Zimbra Collaboration Administrator Guide

Zimbra Collaboration 8.7

Open Source Edition

Legal Notices

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Zimbra Collaboration 8.7

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1 Introduction

Zimbra Collaboration is a full-featured messaging and collaboration solution that includes email, address book, calendaring, tasks, and Web document authoring.

Topics in this chapter:

- Audience, next.
- Third-Party Components, on page 13
- Support and Contact Information, on page 13

Audience

This guide is intended for system administrators responsible for installing, maintaining, and supporting the server deployment of Zimbra Collaboration.

Readers of this guide should have the following recommended knowledge and skill sets:

- Familiarity with the associated technologies and standards Linux operating system, and open source concepts
- Industry practices for mail system management

Third-Party Components

Where possible, Zimbra Collaboration adheres to existing industry standards and open source implementations for backup management, user authentications, operating platform, and database management. However, Zimbra only supports the specific implementations described in the Zimbra Collaboration architecture overview in the Product Overview chapter as officially tested and certified for the Zimbra Collaboration. This document might occasionally note when other tools are available in the marketplace, but such mention does not constitute an endorsement or certification.

Support and Contact Information

Visit **www.zimbra.com** to join the community and to be a part of building the best open source messaging solution. We appreciate your feedback and suggestions.

- Contact sales@zimbra.com to purchase Zimbra Collaboration

- Explore the Zimbra Forums for answers to installation or configurations problems
- Join the Zimbra Forums, to participate and learn more about the Zimbra Collaboration

Let us know what you like about the product and what you would like to see in the product. Post your ideas to the Zimbra Forum.

If you encounter problems with this software, go to http://bugzilla.zimbra.com to submit a bug report. Make sure to provide enough detail so that the bug can be easily duplicated.

2 Product Overview

This chapter provides a system overview of Zimbra components, in the following topics:

- Architectural Overview, next.
- Core Email, Calendar and Collaboration Functionality, on page 16.
- Zimbra Components, on page 16.
- Zimbra Application Packages, on page 17.
- Zimbra System Directory Tree, on page 20.
- Zimbra Web Clients, on page 22.
- Security Measures, on page 23.

Architectural Overview

The Zimbra Collaboration architecture is built with well-known open source technologies and standards-based protocols. The architecture consists of client interfaces and server components that can run as a single node configuration or be deployed across multiple servers for high availability and increased scalability.

The architecture includes the following core advantages:

Core Advantage	Components/Description
Open source integrations	Linux®, Jetty, Postfix, MariaDB, OpenLDAP®
Industry-standard open protocols	SMTP, LMTP, SOAP, XML, IMAP, POP.
Modern technology Design	HTML5, Javascript, XML, and Java.
Scalability	Each Zimbra mailbox server includes its own mailbox accounts and associated message store and indexes. The Zimbra platform scales vertically (by adding more system resources) and horizontally (by adding more servers).
Browser-based client interface	Easy, intuitive access to Zimbra Collaboration features, using a standard web platform.
Browser-based Administration Console	

Core Email, Calendar and Collaboration Functionality

Zimbra Collaboration is an innovative messaging and collaboration application that offers the following state-of-the-art solutions that are accessed through the browser based web client.

- Intuitive message management, search, tagging, and sharing.
- Personal, external, and shared calendar.
- Personal and shared Address Books and Distribution Lists.
- Personal and Shared Task lists.

Zimbra Components

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Table 1: Third-Party Software

3rd-Party Component	Description
Jetty	Web application server that runs Zimbra software.
Postfix	Open source mail transfer agent (MTA) that routes mail messages to the appropriate Zimbra server
Open LDAP software	Open source implementation of the Lightweight Directory Access Protocol (LDAP) that stores Zimbra system configuration, the Zimbra Global Address List, and provides user authentication. Zimbra can also work with GAL and authentication services provided by external LDAP directories such as Active Directory
MariaDB	Database software.
Lucene	Open source full-featured text and search engine
Anti-virus/anti-spam	Open source components that include: • ClamAV, an anti-virus scanner that protects against malicious files. • SpamAssassin, a mail filter that attempts to identify spam. • Amavisd-new interfaces between the MTA and one or more content checkers.
James/Steve filtering	Creates filters for email.
LibreOffice	High fidelity document preview.

Zimbra Application Packages

Zimbra Collaboration provides the application packages listed in .

Table 2: Application Packages

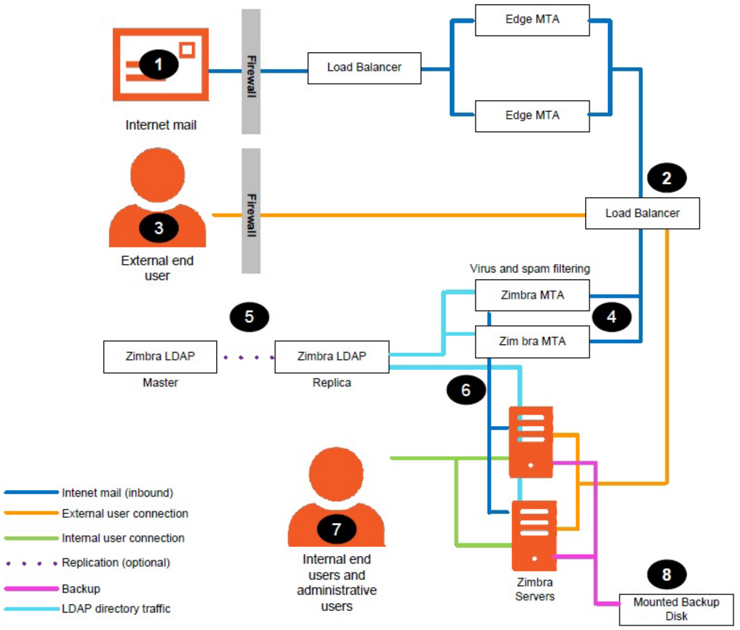
Package	Description
Zimbra Core	The libraries, utilities, monitoring tools, and basic configuration files. `zmconfigd` is contained in the zimbra-core and is automatically enabled to run on all systems.
Zimbra Store (mailbox server)	The components for the mailbox server (including Jetty). The Zimbra mailbox server includes the following components: • **Data store**. A MariaDB© database. • **Message store**. Location of all email messages and file attachments. • **Index store**. Index and search technology is provided through Lucene. Index files are maintained for each mailbox. • **Web application services**. The Jetty web application server runs web applications (webapps) on any store server. It provides one or more web application services.
Zimbra LDAP	Zimbra Collaboration uses the OpenLDAP® software, which is an open source LDAP directory server. User authentication, the Zimbra Global Address List, and configuration attributes are services provided through OpenLDAP. Note that the Zimbra GAL and authentication services can be provided by an external LDAP Directory such as Active Directory.
Zimbra MTA	Postfix is the open source mail transfer agent (MTA) that receives email via SMTP and routes each message to the appropriate Zimbra mailbox server using Local Mail Transfer Protocol (LMTP). The Zimbra MTA also includes the anti-virus and anti-spam components.
Zimbra Proxy	Zimbra Proxy is a high-performance reverse proxy service for passing IMAP[S]/POP[S]/HTTP[S] client requests to other internal ZCS services.This package is normally installed on the MTA server(s) or on its own independent server(s). When the zimbra-proxy package is installed, the proxy feature is enabled by default. Installing the Zimbra Proxy is highly recommended, and required if using a separate web application server.
Zimbra SNMP (Optional)	If you choose to install zimbra-SNMP for monitoring, this package should be installed on every Zimbra server.

Table 2: Application Packages (Continued)

Package	Description
Zimbra Logger (Optional)	If used, this is installed on one mailbox server, and must be installed at the same time as the mailbox server.The Zimbra Logger installs tools for syslog aggregation and reporting. If you do not install Logger, the **server statistics** section of the Administration Console will not display.
Zimbra Spell (Optional)	Aspell is the open source spell checker used on the Zimbra Web Client. When Zimbra-Spell is installed, the Zimbra-Apache package is also installed.
Zimbra Apache	This package is installed automatically when Zimbra Spell is installed.

Mail Flow—Multi-Server Configuration

The configuration for each deployment is dependent on numerous variables such as the number of mailboxes, mailbox quotas, performance requirements, existing network infrastructure, IT policies, security methodologies, spam filtering requirements, and more. In general, deployments share common characteristics for incoming traffic and user connectivity, as depicted in the following diagram. Alternate methods for configuring numerous points within the network are also possible.



The numbered sequences are described below:

1. Inbound Internet mail goes through a firewall and load balancing to the edge MTA for spam filtering.

2. The filtered mail then goes through a second load balancer.

3. An external user connecting to the messaging server also goes through a firewall to the second load balancer.

4. The inbound Internet mail goes to any of the Zimbra Collaboration MTA servers and goes through spam and virus filtering.

5. The designated Zimbra Collaboration MTA server looks up the addressee’s directory information from the Zimbra Collaboration LDAP replica server.

6. After obtaining the user’s information from the Zimbra Collaboration LDPA server, the MTA server sends the mail to the appropriate Zimbra Collaboration server.

7. Internal end-user connections are made directly to any Zimbra Collaboration server that then obtains the user’s directory information from Zimbra Collaboration LDAP and redirects the user, as needed.

8. The backups from the Zimbra Collaboration servers can be processed to a mounted disk.

Zimbra System Directory Tree

The following table lists the main directories created by the Zimbra installation packages. The directory organization is identical for any server in the Zimbra Collaboration, when installing under (parent) /**opt/zimbra**.

Note: *The directories not listed in the following table are libraries used for building the core Zimbra software or miscellaneous third-party tools.*

Table 3: System Directory Tree

`opt/zimbra` **File**	**Description**
`bin/`	Zimbra Collaboration application files, including the utilities described in Appendix A, Command -Line Utilities
`cdpolicyd`	Policy functions, throttling
`clamav/`	Clam AV application files for virus and spam controls
`conf/`	Configuration information
`contrib/`	Third-party scripts for conveyance
`convertd/`	Convert service
`cyrus-sasl/`	SASL AUTH daemon
`data/`	Includes data directories for LDAP, mailboxd, postfix, amavisd, clamav
`db/`	Data Store
`docs/`	SOAP txt files and technical txt files
`extensions-extra/`	Server extensions for different authentication types
`extensions-network-extra/`	Server extensions for different network version authentication types
`httpd/`	Contains the Apache Web server. Used for both aspell and convertd as separate processes
`index/`	Index store
`java/`	Contains Java application files
`jetty/`	mailboxd application server instance. In this directory, the **webapps/zimbra/skins** directory includes the Zimbra UI theme files
`lib/`	Libraries

Table 3: System Directory Tree (Continued)

opt/zimbra File	Description
libexec/	Internally used executables
log/	Local logs for Zimbra Collaboration server application
logger/	RRD and SQLite data files for logger services
mariadb/	MariaDB database files
net-snmp/	Used for collecting statistics
openldap/	OpenLDAP server installation, pre-configured to work with Zimbra Collaboration
postfix/	Postfix server installation, pre-configured to work with Zimbra Collaboration
redolog/	Contains current transaction logs for the Zimbra Collaboration server
snmp/	SNMP monitoring files
ssl/	Certificates
store/	Message store
zimbramon/	Contains control scripts and Perl modules
zimlets/	Contains Zimlet zip files that are installed with Zimbra
zimlets-deployed/	Contains Zimlets that are available with the Zimbra Web Client
zmstat/	mailboxd statistics, saved as .csv files

Zimbra Web Clients

Zimbra offers various web client types that users can log into for use of Zimbra features. The web clients provide mail, calendar, address book, and task functions.

Table 4: Zimbra Web Clients

Client Type	Description
Advanced Web Client	includes Ajax capability and offers a full set of web collaboration features. This web client works best with newer browsers and fast Internet connections.
Standard Web Client	A good option when Internet connections are slow or users prefer HTML-based messaging for navigating within their mailbox
Mobile Client	(Native Mail Client): Used to configure and sync the Zimbra mailbox server with the native mail client on a mobile device.
Mobile HTML Client	Provides mobile access to Zimbra when using the Standard Web Client version.

When users sign in, they view the advanced Zimbra Web Client, unless they use the menu on the login screen to change to the standard version. If ZWC detects the screen resolution to be 800 x 600, users are automatically redirected to the standard Zimbra Web Client. Users can still choose the advanced ZWC but see a warning message suggesting the use of the standard ZWC for better screen view.

When connecting to Zimbra using a mobile web browser, Zimbra automatically detects and defaults to the Touch Client. To use the Mobile Client, you must configure your mobile device to sync with the Zimbra server.

Security Measures

The coordinated use of multiple security measures, targeted to increase the security of the whole system, is one of the best approaches to securing your information infrastructure. These measures are implemented in the Zimbra Collaboration platform as a result of defense mechanisms summarized in the following topics:

- Identity and Access Management, next.
- Information Security and Privacy, on page 24.
- System Logs, on page 24.

Note: *To view current and detailed security news and alerts, please refer to https://wiki.zimbra.com/wiki/SecurityCenter.*

Identity and Access Management

Key functions built into the system for user identify management are summarized in Table 5.

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Table 5: Identify and Access Management Functions

Function	Description
Identify Lifecycle Management	The leveraging of LDAP directory for all Create, Read, Update, and Delete (CRUD) functions associated to user administration with Zimbra Collaboration. LDAP usage is optional but all attributes specific to Zimbra Collaboration are stored and managed through the native LDAP directory.
First Factor Authentication	The combined user name and password primarily employed by authorized users when attempting to access the system. These credentials are retained in the user store: the passwords are stored as salted hash that is compared against that of the entered password, for rejection (no match) or acceptance (matched). If external directory (LDAP or Active Directory) is preferred, the appropriate login credentials can be stored in this external LDAP directory. See also Chapter 5 Zimbra LDAP Service, on page 37 for more details.
Two Factor Authentication	A second layer of identify security that is configured at the Admin Console to enable or disable passcode generation to mobile devices associated with Zimbra Collaboration. When enabled, user or COS accounts must use the generated passcode to gain access to their client services. Only available in Network Edition. See also Managing Session Timeout Policies, on page 152, and , on page 165.

Table 5: Identify and Access Management Functions (Continued)

Function	Description
Authorized Access	User accounts are defined by various attributes, permission levels, and policies to allow or disallow what data can be viewed and which functions can be performed. Admin Console administrators can create groups and assign access permissions to support targeted business objectives.

Information Security and Privacy

Functions built into the system to secure data are summarized in Table 6.

Table 6: Information Security and Privacy Functions

Key Concept	Description
Management of security, integrity, and privacy	Zimbra Collaboration supports the use of S/MIME certificates (provided by publicly trusted Certification Authority (CA), as well as internal PKI; DomainKeys Identified Mail (DKIM); Domain-based Message Authentication, Reporting and Conformance (DMARC); Amavisd-new, which is housed in the Mail Transfer Agent (MTA) to manage incoming and out going DMARC policies.
Encryption methods:	
• In-transit	Secure connections between endpoints and services use TLS in addition to various other protocols: SMTP, LMTP+STARTTLS, HTTPS, IMAPS/IMAP+STARTTLS, POP3S/POP3+STARTTLS.
• at-rest	With S/MIME for end-to-end encryption, data stored in a Zimbra Collaboration message store is encrypted until decryption occurs with the appropriate private key.
Anti-virus and Antispam	Both malware and spam are challenged by the Zimbra Collaboration native functionality and third-party plugins: Amavisd-new, ClamAV, and Spam Assassin.

System Logs

The Zimbra Collaboration system logs—generated by SNMP triggers—can be used to record data such as user and administrator activity, login failures, slow queries, mailbox activity, mobile synchronization activity, and data based errors. Events, alerts and traps can be forwarded to log management and event correlation system to create centralized polices and notifications based on your security and compliance requirements.

Table 7: Security Data

Function	Description
Incident response	Administrators can use remote device wiping and/or account lockout in the event of a malicious or accidental activities (such as stolen user account credential, or lost smart phone).
Archiving and discovery	This optional feature allows administrators to select specific user email messages for archival and application of retention policies, which can be used for both archived and live mailboxes.

3 Licensing

A Zimbra license is required in order to create accounts. When you purchase, renew, or change the Zimbra license, you update the Zimbra server with the new license information.

Topics in this chapter:

- License Types, next.
- License Requirements, on page 28.
- License Usage by Account Type, on page 28.
- License Activation, on page 29.
- Obtain a License, on page 30.

License Types

Zimbra Collaboration licensing gives administrators better visibility and control into the licensed features they plan to deploy. You can monitor usages and manage the following license types.

License limitations	To set maximum number of...
Accounts limit	Accounts you can create and the number of accounts created are shown.
Mobile accounts limit	Accounts you can create and the number of accounts created are shown.
Touch client accounts limit	Accounts that can have the touch client mobile feature enabled.
MAPI accounts limit	Accounts that can use Zimbra Connector for Microsoft Outlook (ZCO).
Exchange web services (EWS) accounts limit	Accounts that can use EWS for connecting to an Exchange server. EWS is a separately licensed add-on.
High-fidelity document preview	Accounts that can use the High-Fidelity document preview. LibreOffice must be installed.
Archiving accounts limit	New archive accounts allowable. The archive feature must be installed.

License Requirements

To try out Zimbra Collaboration, you can obtain trial versions free of charge. Once your system is installed in a production environment, you will need to purchase a subscription or a perpetual license.

License Types	Purpose
Trial	Free of charge: Trial license from the Zimbra website (www.zimbra.com). The trial license allows you to create up to 50 users. It expires in 60 days.
Trial extended	Free of charge: Allows you to create up to 50 users and is valid for an extended period of time. Obtainable from Zimbra Sales by contacting sales@zimbra.com or calling 1-650-427-5701. This license
Subscription	Purchased: Applicable to a specific Zimbra Collaboration system and encrypted with the number of Zimbra accounts (seats) you have purchased, the effective date, and expiration date of the subscription license
Perpetual	Purchased: This license is similar to a subscription license and is valid for a specific Zimbra Collaboration system, is encrypted with the number of Zimbra accounts (seats) you have purchased, the effective date, and an expiration date of 2099-12-31. When you renew your support agreement, no new perpetual license is sent to you, but your Account records in the systems is updated with your new support end date.

License Usage by Account Type

Below is a description of Zimbra Collaboration accounts and if they impact your license limit.

License Account Type	Purpose
System account	System accounts are specific accounts used by Zimbra Collaboration. They include the spam filter accounts for junk mail (spam and ham), virus quarantine account for email messages with viruses, and GALsync account if you configure GAL for your domain. Do not delete these accounts! These accounts do not count against your license
Administrator account	Administrator and delegated administrator accounts count against your license
User account	User accounts count against your license account limit. When you delete an account, the license account limit reflects the change

License Account Type (Continued)	Purpose
Alias account Distribution list Resource account	Not applicable

License Activation

All network edition installations require license activation. New installations have a 10 day grace period from the license issue date before requiring activation. Your license can be activated by selecting **Configure > Global Settings > License > Activate License**.

Upgraded Zimbra Collaboration versions require an immediate activation to maintain network feature functionality.

Automatic License Activation

Licenses are automatically activated if the Zimbra Collaboration server has a connection to the Internet and can communicate with the Zimbra License server. If you are unable to automatically activate your license, see Manual License Activation.

Manual License Activation

For systems that do not have external access to the Zimbra License server, you can use the Zimbra Support Portal to manually activate your license. Go to the Zimbra website at www.zimbra.com and click **Support** to display the Zimbra Technical Support page. Click the **Zimbra Collaboration Suport** link to display the Zimbra Support Portal page. Enter your email and password to log in.

If you have problems accessing the Zimbra Support Portal, contact Zimbra Support at support@zimbra.com.

When Licenses are not Installed or Activated

If you fail to install or activate your Zimbra Collaboration server license, the following scenarios describe how your Zimbra Collaboration server will be impacted.

License Condition	Description/Impact
Not installed	Zimbra Collaboration defaults to single user mode where all features limited by license are limited to one user.
Not valid	Zimbra Collaboration defaults to single user mode.

License Condition	Description/Impact
Not activated	A license activation grace period is 10 days. If for some reason the license is never activated, Zimbra Collaboration defaults to single user mode after 10 days.
For future date	Zimbra Collaboration defaults to single user mode
In grace period	Rhe license ending date has passed and is within the 30 day grace period. All features limited by license are still enabled, but administrators might see license renewal prompts.
Expired	The license ending date has passed and the 30 day grace period has expired. The Zimbra Collaboration server defaults to the feature set of the Open Source Edition.

Obtain a License

On the Zimbra website, go to Downloads to obtain a trial license from the Zimbra Downloads area. Contact Zimbra sales regarding a trial extended license, or to purchase a subscription license or perpetual license, by emailing sales@zimbra.com.

The subscription and perpetual license can only be installed on the Zimbra Collaboration system for which it is purchased. Only one Zimbra license is required for your Zimbra Collaboration environment. This license sets the number of accounts that can be created.

Current license information, including the number of accounts purchased, the number of accounts used, and the expiration date, can be viewed from **Global Settings > License**.

Managing Licenses

The **Update License** wizard from the Administration Console's **Global Settings** page is used to upload and install a new license. The **Activate License** link on the toolbar activates the license.

Current license information, including the license ID, the issue date, expiration date, number of accounts purchased, and the number of accounts used can be viewed from **Global Settings > License**.

License Information

You must have a Zimbra Collaboration license to create accounts. When you purchase, renew, or change the Zimbra license, you must update the Zimbra server with the new license information. The **Update License Wizard** from the Administration Console's Global Settings is used to upload and install a new license. The **Activate License** link on the toolbar activates the license.

Current license information, including the license ID, the issue date, expiration date, number of accounts purchased, and the number of accounts used can be viewed from the Global Settings > License page.

When the number of accounts created is equal to the number of accounts purchased you will not be able to create new accounts. You can purchase additional accounts or you can delete existing accounts. Contact Zimbra sales to purchase additional accounts.

You must renew your license within 30 days of the expiration date. Starting 30 days before the license expires, when you log on to the Administration Console, a reminder notice is displayed.

License Expiration

When your Zimbra Collaboration Network Edition License expires, a license expiration warning appears in the administrative console and web interface for all users. From the date of the license expiration, there is a 30-day grace period during which the warning message is displayed, but no features are disabled.

Upon expiration of the grace period, the server reverts to the feature set of the Open Source Edition. The following is a list of some of the major functions that are no longer available upon license expiration:

- Backup/Restore
- Zimbra Mobile (ActiveSync)
- Zimbra Touch Client
- Exchange Web Services (EWS)
  - EWS is a separately licensed add-on
- High-Fidelity Document Preview
- Zimbra Connector for Outlook
- Zimbra Connector for Blackberry
- S/MIME

If you maximize your licensed user limit, you are no longer able to create or delete accounts.

If you do not plan to renew your license, you can regain the ability to create or delete accounts by upgrading to Zimbra Collaboration free and open source software (FOSS). You should choose the same version of FOSS that you are currently running on the Zimbra Collaboration Network Edition for this transition, after which you can upgrade to the latest version of Zimbra Collaboration FOSS.

Renewal

When the number of accounts created is equal to the number of accounts purchased you will not be able to create new accounts. You can purchase additional accounts or you can delete existing accounts. Contact Zimbra sales to purchase additional accounts.

You must renew your license within 30 days of the expiration date. Starting 30 days before the license expires, when you log on to the Administration Console, a reminder notice is displayed.

Updating Your License

When you renew or change the Zimbra license, you update Zimbra Collaboration mailbox servers with the new license information. This operation be performed from either the Administration Console or the CLI.

CLI: zmlicense

Admin Console: Updating a license:

1. Save the license on the computer you use to access the Administration Console.
2. Log on to the Administration Console, go to **Global Settings > License** and on the toolbar click **Update License**. The License Installation Wizard opens.
3. Browse to select the license file and click **Next**.

   The license file is now uploaded.
4. Click **Install** to install the license file.
5. Click **Activate License**. Upgraded Zimbra Collaboration versions require an immediate activation to maintain network feature functionality.

   Your license information is updated automatically. The cached account license count is automatically refreshed on each mailbox server.

4 Zimbra Mailbox Server

The Zimbra mailbox server is a dedicated server that manages all the mailbox content, including messages, contacts, calendar, and attachments.

Each Zimbra mailbox server can see only its own storage volumes. Zimbra mailbox servers cannot see, read, or write to another server.

Topics in this chapter:

Mailbox Server

Each account is configured on one mailbox server, and this account is associated with a mailbox that contains email messages, attachments, calendar, contacts and collaboration files for that account.

Each mailbox server has its own standalone message store, data store, and index store for the mailboxes on that server. The following is an overview of each store and their directory location.

Message Store

All email messages are stored in MIME format in the Message Store, including the message body and file attachments.

By default, the message store is located on each mailbox server under `/opt/zimbra/store`. Each mailbox has its own directory named after its internal mailbox ID. Mailbox IDs are unique per server, not system-wide.

Messages with multiple recipients are stored as a single-copy on the message store. On UNIX systems, the mailbox directory for each user contains a hard link to the actual file.

When Zimbra Collaboration is installed, one index volume and one message volume are configured on each mailbox server. Each mailbox is assigned to a permanent directory on the current index volume. When a new message is delivered or created, the message is saved in the current message volume.

Data Store

The Data Store is a MariaDB database where internal mailbox IDs are linked with user accounts. All the message metadata including tags, conversations, and pointers indicate where the messages are stored in the file system. The MariaDB database files are located in `/opt/zimbra/db.`

Each account (mailbox) resides only on one server. Each server has its own standalone data store containing data for the mailboxes on that server.

- The data store maps the mailbox IDs to the users' OpenLDAP accounts.The primary identifier within the Zimbra Collaboration database is the mailbox ID, rather than a user name or account name. The mailbox ID is only unique within a single mailbox server.
- Metadata including user's set of tag definitions, folders, contacts, calendar appointments, tasks, Briefcase folders, and filter rules are in the data store database.
- Information about each mail message, including whether it is read or unread, and which tags are associated is stored in the data store database.

Index Store

The index and search technology is provided through Apache Lucene. Each email message and attachment is automatically indexed when the message arrives. An index file is associated with each account. Index files are located in `/opt/zimbra/index.`

The tokenizing and indexing process is not configurable by administrators or users.

The process is as follows:

1. The Zimbra MTA routes the incoming email to the mailbox server that contains the account's mailbox.
2. The mailbox server parses the message, including the header, the body, and all readable file attachments such as PDF files or Microsoft Word documents, in order to tokenize the words.
3. The mailbox server passes the tokenized information to Lucene to create the index files.

Note: *Tokenization is the method for indexing by each word. Certain common patterns, such as phone numbers, email addresses, and domain names are tokenized as shown in the Message Tokenization illustration.*

Web Application Server

The Jetty web application server runs web applications (webapps) on any store server. It provides one or more web application services.

Mailstore Services

Mailstore services provides the back-end access to mailbox/account data. Webapps for the mailstore include:

- Mailstore (mail server) = `/opt/zimbra/jetty/webapps/service`
- Zimlets = `/opt/zimbra/jetty/webapps/zimlet`

User Interface Services

User Interface services provide front-end user interface access to the mailbox account data and Administration Console, including:

- Zimbra Web Client = `/opt/zimbra/jetty/webapps/zimbra`
- Zimbra administrator console = `/opt/zimbra/jetty/webapps/zimbraAdmin`
- Zimlets = `/opt/zimbra/jetty/webapps/zimlet`

Web Application Server Split

The Web Application Server Split functionality provides an option to separate the mailstore services (mail server) and the user interface services (web client server).

For example, a web client server running ‘zimbra,zimbraAdmin’ webapps serving the static UI content like html/css pages, and mail server running ‘service’ webapp serving all the SOAP requests. These servers are running in split mode.

The Web Application Server Split benefits include:

- Splitting the web client server from the mail server makes the customization process more agile, allowing the roll out of new or updated web UI customization without having to restart the mail servers. This means zero down time.
- If you want to customize the Zimbra web client or Zimbra Administration Console, you can take the web client server offline and run customization or maintenance, while not having to take down the mail server.
- The web client server is completely decoupled from mailbox accounts. This means any web client server can service any account request.

Installation and Configuration of the Web Application Server Split

For installation and configuration of the Web Application Server Split, see the Zimbra Collaboration Multi-Server Installation Guide.

Mailbox Server Logs

A Zimbra Collaboration deployment consists of various third-party components with one or more mailbox servers. Each of the components may generate its own logging output. Local logs are in **/opt/zimbra/log**.

Note: Selected Zimbra Collaboration log messages generate SNMP traps, which you can capture using any SNMP monitoring software. See Chapter 15, Monitoring ZCS Servers.

5 Zimbra LDAP Service

LDAP directory services provide a centralized repository for information about users and devices that are authorized to use your Zimbra service. The central repository used for Zimbra's LDAP data is the OpenLDAP directory server.

Topics in this chapter:

- LDAP Traffic Flow, next.
- Zimbra Collaboration LDAP Schema, on page 39.
- Account Authentication, on page 42.
- Zimbra Collaboration Objects, on page 40.
- Global Address List, on page 45.
- Flushing LDAP Cache, on page 47.

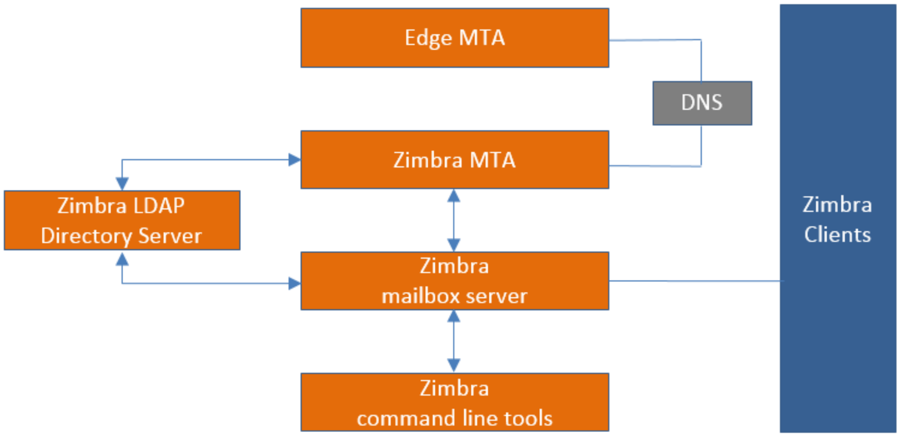
The LDAP server is installed when ZCS is installed. Each server has its own LDAP entry that includes attributes specifying operating parameters. In addition, a global configuration object sets defaults for any server whose entry does not specify every attribute.

A subset of these attributes can be modified through the Zimbra administration console and others through the zmprov commands.

LDAP Traffic Flow

The LDAP Directory Traffic figure shows traffic between the Zimbra-LDAP directory server and the other servers in the Zimbra Collaboration system. The Zimbra MTA and the Zimbra Collaboration mailbox server read from, or write to, the LDAP database on the directory server.

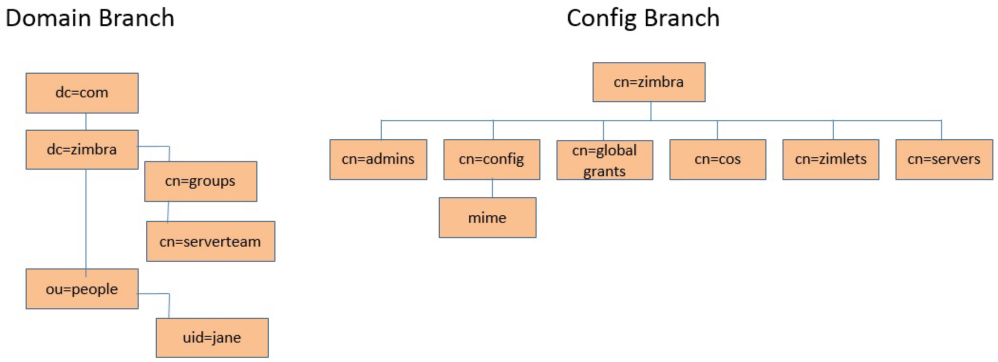
The Zimbra clients connect through the Zimbra server, which connects to LDAP.



LDAP Directory Hierarchy

LDAP directories are arranged in an hierarchal tree-like structure with two types of branches, the mail branches and the config branch. Mail branches are organized by domain. Entries belong to a domain, such as accounts, groups, aliases, are provisioned under the domain DN in the directory. The config branch contains admin system entries that are not part of a domain. Config branch entries include system admin accounts, global config, global grants, COS, servers, mime types, and zimlets.

The Zimbra LDAP Hierarchy figure shows the Zimbra LDAP hierarchy. Each type of entry (object) has certain associated object classes.



An LDAP directory entry consists of a collection of attributes and has a globally unique distinguished name (dn). The attributes allowed for an entry are determined by the *object classes* associated with that entry. The values of the object class attributes determine the schema rules the entry must follow.

An entry's object class that determines what kind of entry it is, is called a structural object class and cannot be changed. Other object classes are called auxiliary and may be added to or deleted from the entry.

Use of auxiliary object classes in LDAP allows for an object class to be combined with an existing object class. For example, an entry with structural object class **inetOrgPerson,** and auxiliary object class **zimbraAccount,** would be an account. An entry with the structural object class **zimbraServer** would be a server in the Zimbra system that has one or more Zimbra packages installed.

Zimbra Collaboration LDAP Schema

At the core of every LDAP implementation is a database organized using a schema.

The Zimbra LDAP schema extends the generic schema included with OpenLDAP software. It is designed to coexist with existing directory installations.

All attributes and object classes specifically created for Zimbra Collaboration are prefaced by “zimbra.,” such as, `zimbraAccount` object class or `zimbraAttachmentsBlocked` attribute.

The following schema files are included in the OpenLDAP implementation:

- core.schema
- cosine.schema
- inetorgperson.schema
- zimbra.schema
- amavisd.schema
- dyngroup.schema
- nis.schema

Note: *You cannot modify the Zimbra schema.*

Zimbra Collaboration Objects

Object	Description	Object class
Accounts	Represents an account on the Zimbra mailbox server that can be logged into. Account entries are either administrators or user accounts. The object class name is **zimbraAccount**. This object class extends the **zimbraMailRecipient** object class. All accounts have the following properties: A name in the format of user@example.domain A unique ID that never changes and is never reused A set of attributes, some of which are user-modifiable (preferences) and others that are only configurable by administrators All user accounts are associated with a domain, so a domain must be created before creating any accounts.	**zimbraAccount**
Class of Service (COS)	Defines the default attributes an account has and what features are allowed or denied. The COS controls features, default preference settings, mailbox quotas, message lifetime, password restrictions, attachment blocking, and server pools for creation of new accounts.	**zimbraCOS**
Domains	Represents an email domain such as **example.com** or **example.org**. A domain must exist before email addressed to users in that domain can be delivered.	**zimbraDomain**
Distribution Lists	Also known as mailing lists, are used to send mail to all members of a list by sending a single email to the list address.	**zimbraDistributionList**

Object	Description	Object class
Dynamic Groups	Are like distribution lists. The difference is members of a dynamic group are dynamically computed by a LDAP search. The LDAP search filter is defined in an attribute on the dynamic group entry. **Note**: Both distribution lists and dynamic groups can be used as grantee or target in the delegated administrator framework.	**zimbraGroup**
Servers	Represents a particular server in the Zimbra system that has one or more of the Zimbra software packages installed. Attributes describe server configuration information, such as which services are running on the server.	**zimbraServer**
Global Configuration	Specifies default values for the following objects: server and domain. If the attributes are not set for other objects, the values are inherited from the global settings. Global configuration values are required and are set during installation as part of the Zimbra core package. These become the default values for the system.	**zimbraGlobalConfig**
Alias	Represents an alias of an account, distribution list or a dynamic group. The **zimbraAliasTarget** attribute points to target entry of this alias entry.	**zimbraAlias**
Zimlet	Defines Zimlets that are installed and configured in Zimbra.	**zimbraZimletEntry**
Calendar Resource	Defines a calendar resource such as conference rooms or equipment that can be selected for a meeting. A calendar resource is an account with additional attributes on the **zimbraCalendarResource** object class.	**zimbraCalendarResource**
Identity	Represents a persona of a user. A persona contains the user’s identity such as display name and a link to the signature entry used for outgoing emails. A user can create multiple personas. Identity entries are created under the user’s LDAP entry in the DIT.	**zimbraIdentity**

Object	Description	Object class
Data Source	Represents an external mail source of a user. Two examples of data source are POP3 and IMAP. A data source contains the POP3/IMAP server name, port, and password for the user's external email account. The data source also contains persona information, including the display name and a link to the signature entry for outgoing email messages sent on behalf of the external account. Data Source entries are created under the user's LDAP entry in the DIT.	**zimbraDataSource**
Signature	Represents a user's signature. A user can create multiple signatures. Signature entries are created under the user's LDAP entry in the DIT.	**zimbraSignature**

Account Authentication

Supported authentication mechanisms are Internal, External LDAP, and External Active Directory. The authentication method type is set on a per-domain basis. If `zimbraAuthMech` attribute is not set, the default is to use internal authentication.

The internal authentication method uses the Zimbra schema running on the OpenLDAP server.

The `zimbraAuthFallbackToLocal` attribute can be enabled so that the system falls back to the local authentication if external authentication fails. The default is FALSE.

Internal Authentication Mechanism

The internal authentication method uses the Zimbra schema running on the OpenLDAP directory server. For accounts stored in the OpenLDAP server, the `userPassword` attribute stores a salted-SHA1 (SSHA) digest of the user's password. The user's provided password is computed into the SSHA digest and then compared to the stored value.

External LDAP and External AD Authentication Mechanism

External LDAP and external Active Directory authentication can be used if the email environment uses another LDAP server or Microsoft Active Directory for authentication and Zimbra-LDAP for all other Zimbra Collaboration-related transactions. This requires that users exist in both OpenLDAP and in the external LDAP server.

The external authentication methods attempt to bind to the specified LDAP server using the supplied user name and password. If this bind succeeds, the connection is closed and the password is considered valid.

The `zimbraAuthLdapURL` and `zimbraAuthLdapBindDn` attributes are required for external authentication.

- `zimbraAuthLdapURL` attribute `ldap://ldapserver:port/` identifies the IP address or host name of the external directory server, and port is the port number. You can also use the fully qualified host name instead of the port number.

  For example:

  ```
  ldap://server1:3268
  ldap://exch1.acme.com
  ```

  If it is an SSL connection, use `ldaps:` instead of `ldap`:. The SSL certificate used by the server must be configured as a trusted certificate.

- `zimbraAuthLdapBindDn` attribute is a format string used to determine which DN to use when binding to the external directory server.

  During the authentication process, the user name starts out in the format:

  user@domain.com

  The user name might need to be transformed into a valid LDAP bind `DN` (distinguished name) in the external directory. In the case of Active Directory, that bind `dn` might be in a different domain.

Custom Authentication

You can implement a custom authentication to integrate external authentication to your proprietary identity database. When an authentication request comes in, Zimbra checks the designated auth mechanism for the domain. If the auth mechanism is set to custom authentication, Zimbra invokes the registered custom auth handler to authenticate the user.

To set up custom authentication, prepare the domain for the custom auth and register the custom authentication handler.

Preparing a domain for custom auth

To enable a domain for custom auth, set the domain attribute, **zimbraAuthMet to custom:{registered-custom-auth-handler-name}**.

CLI: In the following example, “sample” is the name under which custom authentication is registered.

```
zmprov modifydomain {domain|id} zimbraAuthMech custom:sample.
```

Register a custom authentication handler.

To register a custom authentication handler, invoke **ZimbraCustomAuth.register [handlerName, handler]** in the init method of the extension.

- Class: **com.zimbra.cs.account.ldap.ZimbraCustomAuth**
- Method: public synchronized static void register [**String handlerName, ZimbraCustomAuth handler**]

  Definitions

  - **handlerName** is the name under which this custom auth handler is registered to Zimbra's authentication infrastructure. This name is set in the domain's zimbraAuthMech attribute of the domain.
  - **handler** is the object on which the authenticate method is invoked for this custom auth handler. The object has to be an instance of **ZimbraCustomAuth** (or subclasses of it).

CLI: Example

```
public class SampleExtensionCustomAuth implements
ZimbraExtension {
public void init() throws ServiceException {
        /*
         * Register to Zimbra's authentication infrastructure
         *
         * custom:sample should be set for domain attribute
zimbraAuthMech
         */
        ZimbraCustomAuth.register("sample", new
SampleCustomAuth());
    }
...
}
```

How Custom Authentication Works

When an authentication request comes in, if the domain is specified to use custom auth, the authenticating framework invokes the authenticate method on the `ZimbraCustomAuth` instance passed as the handler parameter to `ZimbraCustomAuth.register ()`.

The account object for the principal to be authenticated and the clear-text password entered by the user are passed to `ZimbraCustomAuth.authenticate` ().

All attributes of the account can be retrieved from the account object.

Kerberos5 Authentication Mechanism

Kerberos5 Authentication Mechanism authenticates users against an external Kerberos server.

1. Set the domain attribute **zimbraAuthMech** to kerberos5.

2. Set the domain attribute `zimbraAuthKerberos5Realm` to the Kerberos5 realm in which users in this domain are created in the Kerberos database.

   When users log in with an email password and the domain, `zimbraAuthMech` is set to kerberos5, the server constructs the Kerberos5 principal by `{localpart-of-the-email}@{value-of-zimbraAuthKerberos5Realm}` and uses that to authenticate to the kerberos5 server.

To specify Kerberos5 for an individual account set the account's `zimbraForeignPrincipal as kerberos5:{kerberos5-principal}`. For example: kerberos5:user1@MYREALM.COM.

Global Address List

The Global Address List (GAL) is a company directory of users, usually within the organization itself, that is available to all users of the email system. Zimbra Collaboration uses the company directory to look up user addresses from within the company.

For each Zimbra Collaboration domain you can configure GAL to use:

- External LDAP server
- Zimbra Collaboration internal LDAP server
- Both external LDAP server and OpenLDAP in GAL searches

The Zimbra Collaboration Web Client can search the GAL. When the user searches for a name, that name is turned into an LDAP search filter similar to the following example, where the string %s is the name the user is searching for.

CLI: Example—searching the GAL

```
(|(cn = %s*)(sn=%s*)(gn=%s*)(mail=%s*))
  (zimbraMailDeliveryAddress = %s*)
  (zimbraMailAlias=%s*)
  (zimbraMailAddress = %s*)
```

GAL Attributes in Zimbra Collaboration

The Attributes Mapped to Zimbra Collaboration Contact table maps generic GAL search attributes to their Zimbra Collaboration contact fields.

LDAP attributes are mapped to GAL entry fields. For example, the LDAP attribute `displayName` and cn can be mapped to GAL entry field `fullName`. The mapping is configured in the `zimbraGalLdapAttrMap` attribute.

Table 8: Attributes Mapped to Zimbra Collaboration Contact

Standard LDAP Attribute	Zimbra Collaboration Contact Field
co	workCountry
company	Company
givenName/gn	firstName
sn	lastName
cn	fullName
initials	initials
l	workCity
street, streetaddress	workStreet
postalCode	workPostalCode
telephoneNumber	workPhone
mobile	mobile
pager	pager
facisimileTelephoneNumber	faxNumber
st	workState
title	jobTitle
mail	email
objectClass	Not currently mapped

Zimbra Collaboration GAL Search Parameters

GAL is configured on a per-domain basis. To configure the attributes, you can run the GAL Configuration Wizard from the Administration Console.

Modifying Attributes

Additions, changes and deletions to the GAL attributes are made through the Zimbra Administration Console or from the zmprov commands.

Users can modify attributes for their account in the directory when users change their options from the Zimbra Web Client, they also modify the attributes when they change their preferences.

Flushing LDAP Cache

When you modify the following type of entries in the Zimbra LDAP server, you might need to flush the LDAP cache to make the change available on the server.

- Themes
- Locales
- Account
- Groups
- COS
- Domains
- Global configuration
- Server
- Zimlet configuration

Flush the Cache for Themes and Locales

When you add or change theme (skin) property files and locale resource files for ZCS on a server, you must flush the cache to make the new content available.

CLI: To flush skins:

```
zmprov flushCache skin
```

CLI: To flush locales:

```
zmprov flushCache locale
```

Flush Accounts, Groups, COS, Domains, and Servers

When you modify the account, COS, groups, domain, and server attributes, the change is effective immediately on the server to which the modification is done. On the other servers, the LDAP entries are automatically updated after a period of time if the attributes are cached.

The default ZCS setting to update the server is 15 minutes. The caching period is configured on local config key.

CLI: To change the setting:

```
zmlocalconfig ldap_cache_<object>_maxage
```

CLI: To enable changes immediately:

```
zmprov flushCache [account|cos|domain|group|server] [name|id]
```

If you do not specify a name or ID along with the type, all entries in cache for that type are flushed and the cache is reloaded.

Note: *Some server attributes require a server restart even after the cache is flushed. For example, settings like bind port or number of processing threads.*

Flush Global Attributes

When you modify global config attributes, the changes are effective immediately on the server to which the modification is done. On other mailbox servers, you must flush the cache to make the changes available or restart the server. LDAP entries for global config attributes do not expire.

Some global config attributes are computed into internal representations only once per server restart. For efficiency reasons, changes to those attributes are not effective until after a server restart, even after the cache is flushed. Also, some global configuration settings and server settings that are inherited from global config are only read once at server startup, for example port or number of processing threads. Modifying these types of attributes requires a server restart.

CLI: To flush the cache for global config changes on all servers:

1. Modify the setting on the local server

   ```
   zmprov mcf zimbraImapClearTextLoginEnabled TRUE
   ```

   The change is only effective on the server **zimbra_zmprov_default_soap_server, port zimbra_admin-service_port**.

2. Flush the global config cache on all other servers, **zmprov flushCache** must be issued on all servers, one at a time. For example:

   ```
   zmprov –s server-2 flushcache config
   ```

   ```
   zmprov –s server-3 flushcache config
   ```

3. To determine if the action requires a restart

   `zmprov desc -a <attributename>`.

   The `requiresRestart` value is added to the output if a restart is required.

6 Zimbra Mail Transfer Agent

The Zimbra MTA (Mail Transfer Agent) receives mail via SMTP and routes each message using Local Mail Transfer Protocol (LMTP) to the appropriate Zimbra mailbox server.

Note: *You can set MTA parameters with the Admin Console and the CLI. However, it is highly recommended that you use the CLI for MTA configuration to ensure the best results.*

Topics in this chapter:

- Zimbra MTA Deployment, next.
- SMTP Authentication, on page 51.
- Anti-Virus and Anti-Spam Protection, on page 52.
- Receiving and Sending Mail, on page 66.

The Zimbra MTA server includes the following programs:

MTA Server Programs	Purpose/Description
Postfix MTA	Mail routing, mail relay, and attachment blocking
Clam AntiVirus	Scanning email messages and attachments in email messages for viruses
Spam Assassin	Identify unsolicited commercial email (spam)
Amavisd-New	Interface between Postfix and ClamAV / SpamAssassin
Zimbra Milter Server	Enforce restrictions on which addresses can send to distribution lists and adds **Reply-To** and **X-Zimbra-DL** headers to messages sent from distribution lists
Zimbra policy server	Aid in protecting Alias Domains from Backscatter Spam
Cluebringer	Policy daemon/cbpolicyd used to enforce actions, such as rate limiting. For more information, see https://wiki.zimbra.com/wiki/Postfix_Policyd
Opendkim	Sign outgoing email if it has been configured to do so. For more information, see https://wiki.zimbra.com/wiki/Configuring_for_DKIM_Signing

In the Zimbra Collaboration configuration, mail transfer and delivery are distinct functions: Postfix acts as a MTA, and the Zimbra mail server acts as a Mail Delivery Agent (MDA).

The MTA configuration is stored in LDAP. The zmconfigd process polls the LDAP directory every two minutes for modifications and updates the Postfix configuration files with the changes.

Incoming Mail Routing Overview

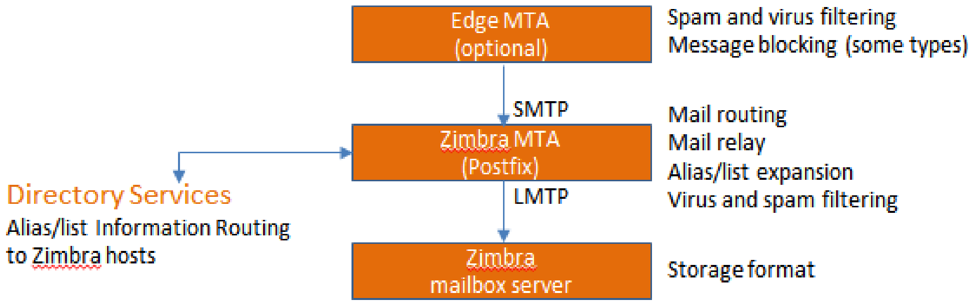
The Zimbra mailbox server receives the messages from the Zimbra MTA server and passes them through any filters that have been created.

The MTA server receives mail via SMTP and routes each mail message to the appropriate mailbox server using LMTP. As each mail message arrives, its contents are indexed so that all elements can be searched.

Zimbra MTA Deployment

ZCS includes a precompiled version of Postfix to route and relay mail and manage attachments. Postfix receives inbound messages via SMTP, performs anti-virus and anti-spam filtering and hands off the mail messages to the Zimbra Collaboration server via LMTP.

Postfix also plays a role in transferring outbound messages. Messages composed from the Zimbra Web Client are sent by the Zimbra server through Postfix, including messages sent to other users on the same server.



*The Edge MTA can be any edge security solution for mail. You might already deploy such solutions for functions such as filtering. Some filtering might be duplicated between an edge MTA and the Zimbra MTA.

Postfix Configuration Files

Zimbra modified Postfix files—main.cf and master.cf—specifically to work with ZCS:

- **main.cf.** Modified to include the LDAP tables. The `zmconfigd` in the Zimbra MTA pulls data from the Zimbra LDAP and modifies the Postfix configuration files.
- **master.cf.** Modified to use Amavisd-New.

Important: *Changes made to postfix configuration files will be overwritten with every upgrade and should be well documented. If possible, try to implement any necessary configuration changes using Zimbra defined parameters.*

SMTP Authentication

SMTP authentication allows authorized mail clients from external networks to relay messages through the Zimbra MTA. The user ID and password is sent to the MTA when the SMTP client sends mail so that the MTA can verify if the user is allowed to relay mail.

The user ID and password is sent to the MTA when the SMTP client sends mail. This ensures that the MTA can verify if the user is allowed to relay mail, by checking the associated credentials with the LDAP account.

Note: *User authentication is provided through the Zimbra LDAP directory server, or if implemented, through the Microsoft Active Directory Sever.*

SMTP Restrictions

You can enable restrictions so that messages are not accepted by Postfix when non-standard or other disapproved behavior is exhibited by an incoming SMTP client. These restrictions provide some protection against spam senders. By default, clients that do not greet with a fully qualified domain name are restricted. DNS based restrictions are also available.

Important: *Understand the implications of these restrictions before you implement them. You might have to compromise on these checks to accommodate people outside of your system who have poorly implemented mail systems.*

Sending Non Local Mail to a Different Server

You can configure Postfix to send nonlocal mail to a different SMTP server, commonly referred to as a relay or smart host.

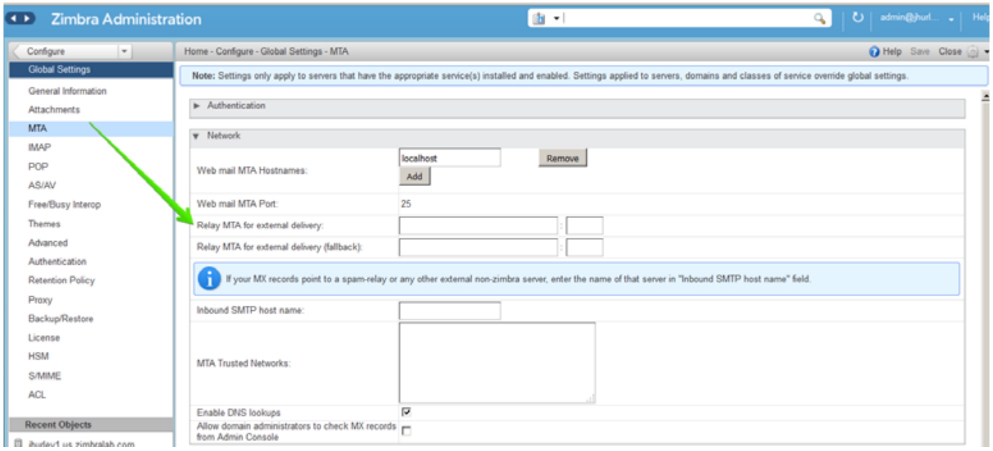
A common use case for a relay host is when an ISP requires that all your email be relayed through a designated host, or if you have filtering SMTP proxy servers.

The relay host setting must not be confused with Web mail MTA setting. Relay host is the MTA to which Postfix relays non-local email. Webmail MTA is used by the Zimbra server for composed messages and must be the location of the Postfix server in the Zimbra MTA package.

To use the Administration Console to configure Relay MTA for external delivery:

Admin Console: **Home> Global Settings**>**MTA** page, **Network** container.

Important: *To prevent mail loops, use caution when setting the relay host.*



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Settings applied to servers, domains and classes of service override global settings.

Web mail MTA Hostnames: localhost

Web mail MTA Port: 25

Relay MTA for external delivery:

Relay MTA for external delivery (fallback):

If your MX records point to a spam-relay or any other external non-zimbra server, enter the name of that server in "Inbound SMTP host name" field.

Inbound SMTP host name:

MTA Trusted Networks:

Enable DNS lookups ☑

Allow domain administrators to check MX records from Admin Console ☐

Anti-Virus and Anti-Spam Protection

The Amavisd-New utility is the interface between the Zimbra MTA and Clam AntiVirus (ClamAV) and SpamAssassin scanners.

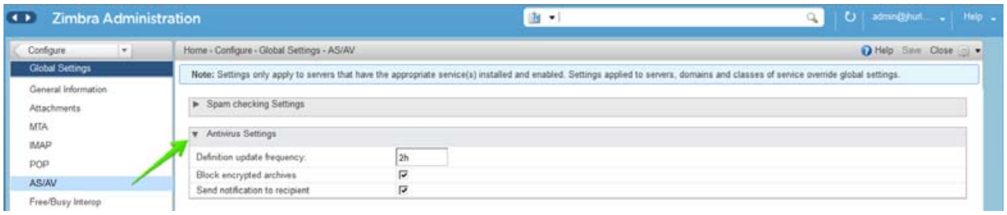
Anti-Virus Protection

ClamAV software is the virus protection engine enabled for each ZCS server.

The anti-virus software is configured to put messages that have been identified as having a virus to the virus quarantine mailbox. By default, the Zimbra MTA checks every two hours for any new anti-virus updates from ClamAV.

You can change anti-virus settings at the Administration Console.

Admin Console: **Home> Configure> Global Settings**>**AS/AV** page, **Antivirus Settings** container.



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Settings applied to servers, domains and classes of service override global settings.

Definition update frequency: 2h

Block encrypted archives ☑

Send notification to recipient ☑

Note: *Updates are obtained via HTTP from the ClamAV website.*

Scanning Attachments in Outgoing Mail

You can enable real-time scanning of attachments in outgoing emails sent using the Zimbra Web Client. If enabled, when an attachment is added to an email, it is scanned using ClamAV prior to sending the message. If ClamAV detects a virus, it will block attaching the file to the message. By default, scanning is configured for a single node installation.

CLI: To enable scanning, using a single node:

```
zmprov mcf zimbraAttachmentsScanURL clam://localhost:3310/
zmprov mcf zimbraAttachmentsScanEnabled TRUE
```

CLI: To enable scanning in a multi-node environment:

1. Designate the MTA nodes to handle ClamAV scanning.
2. Enable, as follows:

```
zmprov ms <mta server> zimbraClamAVBindAddress <mta server>
zmprov mcf zimbraAttachmentsScanURL clam://<mta
server>:3310/
zmprov mcf zimbraAttachmentsScanEnabled TRUE
```

Anti-Spam Protection

Zimbra uses SpamAssassin to identify unsolicited commercial email (spam) with learned data stored in either the Berkeley DB database or a MariaDB database. You can also use the Postscreen function to provide additional protection against mail server overload. Both strategies are described in the following topics:

- Spam Assassin Methods for Avoiding Spam, next.
- Postscreen Methods for Avoiding Spam, on page 57.

Spam Assassin Methods for Avoiding Spam

Usage guidelines are provided in the following topics:

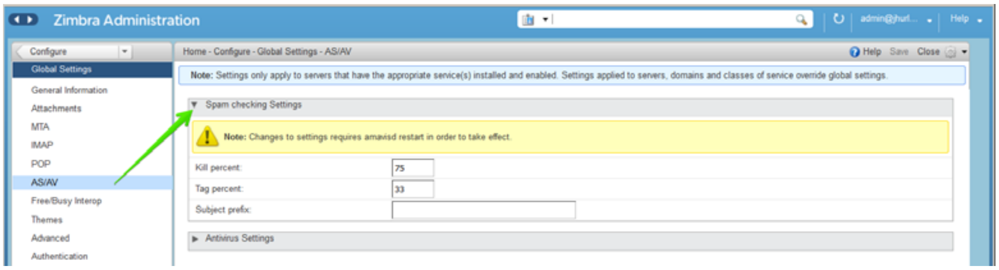
- Managing the Spam Assassin Score, next.
- Training the Spam Filter, on page 54.
- Configuring Final Destination for Spam, on page 55.
- Setting Up Trusted Networks, on page 55.
- Enabling a Milter Server, on page 56.

Note: *For information about how to customize SpamAssassin, see https://wiki.zimbra.com/wiki/Anti-spam_strategies.*

Managing the Spam Assassin Score: SpamAssassin uses predefined rules as well as a Bayes database to score messages with a numerical range. Zimbra uses a percentage value to determine "spaminess" based on a SpamAssassin score of 20 as 100%. Any message tagged between 33%-75% is considered spam and delivered to the user's junk folder. Messages tagged above 75% are always considered spam and discarded.

You can change the spam percentage settings, and the subject prefix at the Administration Console:

Admin Console: **Home> Configure> Global Settings**>**AS/AV** page, **Spam checking Settings** container.



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Settings applied to servers, domains and classes of service override global settings.

▼ Spam checking Settings

Note: Changes to settings requires amavisd restart in order to take effect.

Kill percent:	75
Tag percent:	33
Subject prefix:	

By default, Zimbra uses the Berkeley DB database for spam training. You can also use a MariaDB database.

CLI: To use the MariaDB method on the MTA servers:

```
zmlocalconfig -e antispam_mariadb_enabled=TRUE
```

When this is enabled, Berkeley DB database is not enabled.

Training the Spam Filter: The effectiveness of the anti-spam filter is dependent on user input to differentiate spam or ham. The SpamAssassin filter learns from messages that users specifically mark as spam by sending them to their junk folder or not spam by removing them from their junk folder. A copy of these marked messages is sent to the appropriate spam training mailbox.

At installation, a spam/ham cleanup filter is configured on only the first MTA. The ZCS spam training tool, `zmtrainsa`, is configured to automatically retrieve these messages and train the spam filter. The `zmtrainsa` script empties these mailboxes each day.

Note: *New installations of ZCS limit spam/ham training to the first MTA installed. If you uninstall or move this MTA, you will need to enable spam/ham training on another MTA, as one host should have this enabled to run* `zmtrainsa --cleanup`*.*

To set this on a new MTA server:

```
zmlocalconfig -e zmtrainsa_cleanup_host=TRUE
```

Initially, you might want to train the spam filter manually to quickly build a database of spam and non-spam tokens, words, or short character sequences that are commonly found in spam or ham. To do this, you can manually forward messages as message/rfc822 attachments to the spam and non-spam mailboxes. When `zmtrainsa` runs, these messages are used to teach the spam filter. Make sure you add a large enough sampling of messages to get accurate scores. To determine whether to mark messages as spam at least 200 known spams and 200 known hams must be identified.

SpamAssassin's sa-update tool is included with SpamAssassin. This tool updates SpamAssassin rules from the SA organization. The tool is installed into `/opt/zimbra/common/bin`.

Configuring Final Destination for Spam: You can configure Amavis behavior to handle a spam item's final destination by using the following attribute:

```
zimbraAmavisFinalSpamDestiny
```

The default is D_DISCARD (which will not deliver the email to the addressee).

CLI: Setting final spam destiny attributes:

```
zmprov mcf "zimbraAmavisFinalSpamDestiny" D_PASS
zmprov ms serverhostname.com D_PASS
```

Configurable attribute values are:

`D_PASS`

Deliver the email to the recipient. The email is likely to be placed in the recipient's junk folder (although some sites disable junk).

`D_BOUNCE`

The email is bounced back to the sender. Because this setting can create backscatter—as the "sender" is not the person who actually sent the email—it is not advised.

`D_REJECT`

Reject the email. This setting reduces the chance of backscatter:

- If the sender is valid, the MTA will notify this person about the rejection.
- If the sender is not valid, the associated MTA will discard the email (i.e. email that was sent by a spammer spoofing someone else).

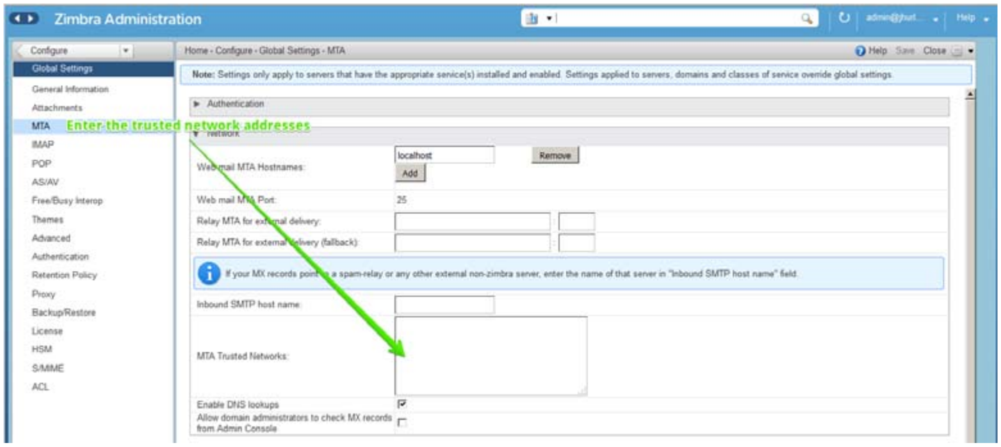
- `D_DISCARD`

The email is silently discarded (not delivered).

Setting Up Trusted Networks: The ZCS configuration allows relaying only for the local network, but you can configure trusted networks that are allowed to relay mail. You set the MTA trusted networks as a global setting, but you can configure trusted networks as a server setting. The server setting overrides the global setting.

To use the Administration Console to set up MTA trusted networks as a global setting:

Admin Console: **Home**> **Configure** > **Global Settings** > **MTA** page, **Network** container.



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Settings applied to servers, domains and classes of service override global settings.

Web mail MTA Hostnames: localhost

Web mail MTA Port: 25

Relay MTA for external delivery:

Relay MTA for external delivery (fallback):

If your MX records point to a spam-relay or any other external non-zimbra server, enter the name of that server in "Inbound SMTP host name" field.

Inbound SMTP host name:

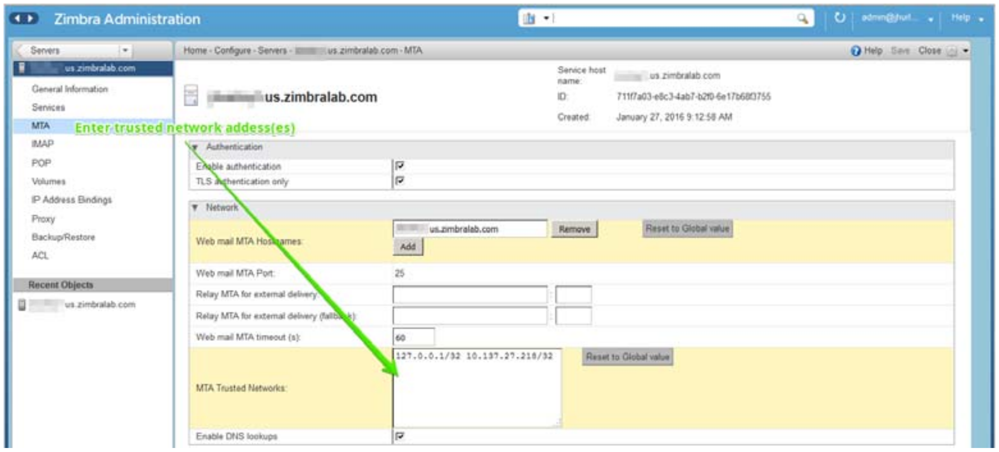
MTA Trusted Networks:

Enable DNS lookups ☑

Allow domain administrators to check MX records from Admin Console □

When using the Administration Console to set up MTA trusted networks on a per server basis, first ensure that MTA trusted networks have been set up as global settings.

Admin Console: **Home**> **Configure** > **Servers** > <Edit> **MTA** page, **Network** container.



[redacted]us.zimbralab.com

Home - Configure - Servers - [redacted]us.zimbralab.com - MTA

[redacted]us.zimbralab.com

Service host name: [redacted]us.zimbralab.com

ID: 711f7a03-e8c3-4ab7-b2f0-6e17b68f3755

Created: January 27, 2016 9:12:58 AM

Enable authentication ☑

TLS authentication only ☑

Web mail MTA Hostnames: [redacted]us.zimbralab.com

Web mail MTA Port: 25

Relay MTA for external delivery:

Relay MTA for external delivery (fallback):

Web mail MTA timeout (s): 60

MTA Trusted Networks: 127.0.0.1/32 10.137.27.218/32

Enable DNS lookups ☑

Enter the network addresses separated by commas and/or a space. Continue long lines by starting the next line with space, similar to the following examples:

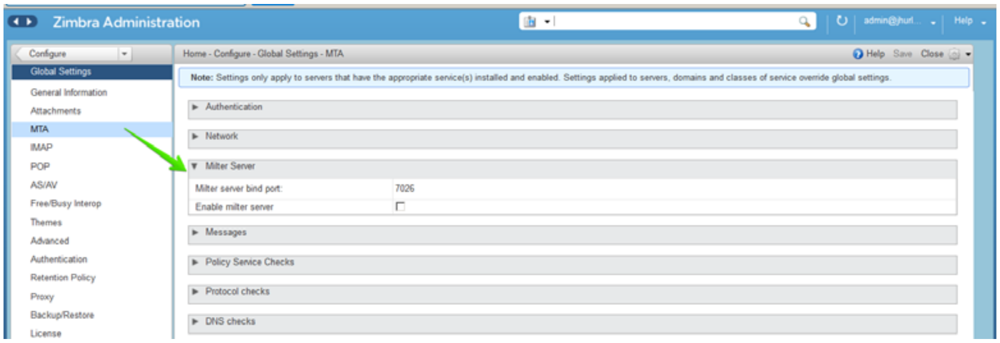
- 127.0.0.0/8, 168.100.189.0/24
- No commas: 127.0.0.0/8 168.100.189.0/24 10.0.0.0/8 [::1]/128 [fe80::%eth0]/64

Enabling a Milter Server: Milter server can be enabled to enforce restrictions on which addresses can send to distribution lists and add **Reply-To** and **X-Zimbra-DL** headers to messages sent from distribution lists. This can be enabled globally or for specific servers from the Administration Console.

Note: *Only enable a Milter Server on a server where an MTA is running.*

For global configuration, enable the milter server from the Administration Console:

Admin Console: **Home> Configure> Global Settings> MTA** page, **Milter Server** container.



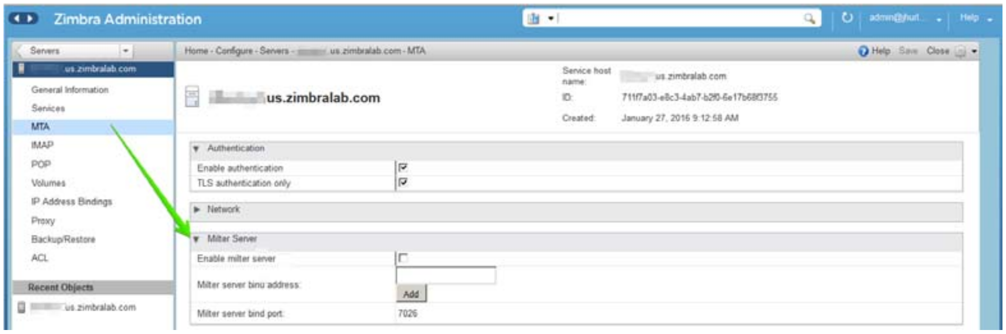
Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Settings applied to servers, domains and classes of service override global settings.

Milter server bind port: 7026

Enable milter server ☐

Use the Administration Console to enable a specific milter server, and to set bind addressing for individual servers.

Admin Console: **Home**> **Configure**> **Servers**> <Edit> **MTA** page> **Milter Server** container.



[redacted] us.zimbralab.com

Service host name: [redacted] us.zimbralab.com

ID: 711f7a03-e8c3-4ab7-b2f0-6e17b6813755

Created: January 27, 2016 9:12:58 AM

Enable authentication ☑

TLS authentication only ☑

Enable milter server ☐

Milter server binu address:

Milter server bind port: 7026

Postscreen Methods for Avoiding Spam

Use guidelines in this section to work with Postscreen, as described in the following topics:

- About Postscreen, next.
- Postscreen Attributes, on page 59.
- Enabling Postscreen, on page 65.
- Testing Postscreen, on page 66.

About Postscreen:

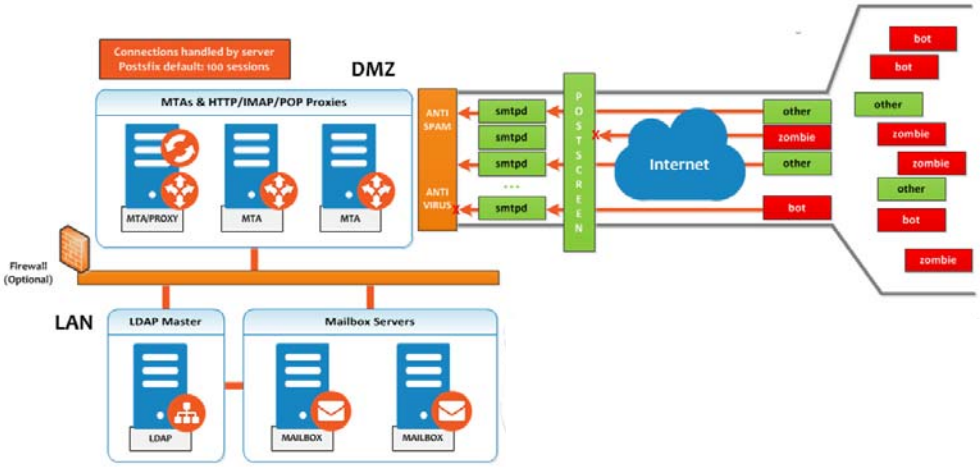
Zimbra Postscreen is the 8.7 enhancement to the Zimbra Collaboration anti-spam strategy, to provide additional protection against mail server overload. By design, Postscreen is not an SMTP proxy. Its purpose is to keep spambots away from Postfix SMTP server processes, while minimizing overhead for legitimate traffic. A single Postscreen process handles multiple inbound SMTP connections and decides which clients may communicate to a Post-fix SMTP server process. By keeping spambots away, Postscreen frees up SMTP server processes for legitimate clients, and delays the onset of server overload conditions.

In a typical deployment, Postscreen handles the MX service on TCP port 25, while MUA clients submit mail via the submission service on TCP port 587, which requires client authentication. Alternatively, a site could set up a dedicated, non-Postscreen, "port 25" server that provides submission service and client authentication without MX service.

Important: *Postscreen should not be used on SMTP ports that receive mail from end-user clients (MUAs).*

Zimbra Collaboration Postscreen maintains a temporary white-list for clients that have passed a number of tests. When an SMTP client IP address is whitelisted, Postscreen immediately passes the connection to a Postfix SMTP server process. This minimizes the overhead for legitimate mail.

In a typical scenario that uses Postscreen service, it is reasonable to expect potentially malicious email entities—such as bots and zombies—to be mixed in with friendly candidates in email loads. This concept is illustrated in the following diagram, in which undesirable entities are depicted in red; good email candidates are green.



Postscreen performs basic checks and denies connection(s) that are clearly from a bot or zombie. If the connection is not in the temporary whitelist, Postscreen passes the email to the local Anti-SPAM and Anti-Virus engines, which can either accept it or deny it. Good connections are accepted via Postscreen security, then allowed to talk directly with the SMTP daemon, which scans the Email (as usual) with the AS/AV. By default, all bots or zombies are rejected.

CLI: Use Zimbra CLI attributes to set parameters for Postscreen operations. For any Postscreen Attributes that provide the ignore, enforce, or drop instruction, use guidelines as follows:

- *ignore*—Ignore this result. Allow other tests to complete. Repeat this test with subsequent client connections. This is the default setting, which is useful for testing and collecting statistics without blocking mail.
- *enforce*—Allow other tests to complete. Reject attempts to deliver mail with a 550 SMTP reply, and log the hello/sender/recipient information. Repeat this test with subsequent client connections.
- *drop*—Drop the connection immediately with a 521 SMTP reply. Repeat this test with subsequent client connections.

Postscreen Attributes:

Go to the `zmprov mcf` prompt (release 8.7+) to use Postscreen commands. You can see example usages of these attributes in Enabling Postscreen, on page 65.

`zimbraMtaPostscreenAccessList`

Postconf postscreen_access_list setting, which is the permanent white/ blacklist for remote SMTP client IP addresses. Postscreen(8) searches this list immediately after a remote SMTP client connects. Specify a comma- or whitespace-separated list of commands (in upper or lower case) or lookup tables. The search stops upon the first command that fires for the client IP address.

Default = permit_mynetworks

`zimbraMtaPostscreenBareNewlineAction`

The action that postscreen(8) is to take when a remote SMTP client sends a bare newline character, that is, a newline not preceded by carriage return— as either ignore, enforce, or drop.

Default = ignore

`zimbraMtaPostscreenBareNewlineEnable`

Enable (yes) or disable (no) "bare newline" SMTP protocol tests in the postscreen(8) server. These tests are expensive: a remote SMTP client must disconnect after it passes the test, before it can talk to a real Postfix SMTP server.

Default = no

`zimbraMtaPostscreenBareNewlineTTL`

The amount of time allowable for postscreen(8) to use the result of a successful "bare newline" SMTP protocol test. During this time, the client IP address is excluded from this test. The default setting is lengthy because a remote SMTP client must disconnect after it passes the test, before it can talk to a real Postfix SMTP server.

Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 30d

`zimbraMtaPostscreenBlacklistAction`

The action that postscreen(8) is to take when a remote SMTP client is permanently blacklisted with the postscreen_access_list parameter, as either ignore, enforce, or drop.

Default = ignore

`zimbraMtaPostscreenCacheCleanupInterval`

The amount of time allowable between postscreen(8) cache cleanup runs. Cache cleanup increases the load on the cache database and should therefore not be run frequently. This feature requires that the cache database supports the "delete" and "sequence" operators. Specify a zero interval to disable cache cleanup.

After each cache cleanup run, the postscreen(8) daemon logs the number of entries that were retained and dropped. A cleanup run is logged as "partial" when the daemon terminates early after "postfix reload", "postfix stop", or no requests for $max_idle seconds.

Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 12h

`zimbraMtaPostscreenCacheRetentionTime`

The amount of time that postscreen(8) is allowed to cache an expired temporary whitelist entry before it is removed. This prevents clients from being logged as "NEW" just because their cache entry expired an hour ago. It also prevents the cache from filling up with clients that passed some deep protocol test once and never came back.

Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 7d

`zimbraMtaPostscreenCommandCountLimit`

Value to set the limit on the total number of commands per SMTP session for postscreen(8)'s built-in SMTP protocol engine. This SMTP engine defers or rejects all attempts to deliver mail, therefore there is no need to enforce separate limits on the number of junk commands and error commands.

Default = 20

`zimbraMtaPostscreenDnsblAction`

The action that postscreen(8) is to take when a remote SMTP client's combined DNSBL score is equal to or greater than a threshold (as defined with the postscreen_dnsbl_sites and postscreen_dnsbl_threshold parameters), as either ignore, enforce, or drop.

Default = ignore

`zimbraMtaPostscreenDnsblSites`

Optional list of DNS white/blacklist domains, filters and weight factors. When the list is non-empty, the dnsblog(8) daemon will query these domains with the IP addresses of remote SMTP clients, and postscreen(8) will update an SMTP client's DNSBL score with each non-error reply.

Caution: when postscreen rejects mail, it replies with the DNSBL domain name. Use the postscreen_dnsbl_reply_map feature to hide "password" information in DNSBL domain names.

When a client's score is equal to or greater than the threshold specified with postscreen_dnsbl_threshold, postscreen(8) can drop the connection with the remote SMTP client.

Specify a list of domain=filter*weight entries, separated by comma or whitespace.

- When no "=filter" is specified, postscreen(8) will use any non-error DNSBL reply. Otherwise, postscreen(8) uses only DNSBL replies that match the filter. The filter has the form d.d.d.d, where each d is a number, or a pattern inside [] that contains one or more ";"-separated numbers or number..number ranges.
- When no "*weight" is specified, postscreen(8) increments the remote SMTP client's DNSBL score by 1. Otherwise, the weight must be an integral number, and postscreen(8) adds the specified weight to the remote SMTP client's DNSBL score. Specify a negative number for whitelisting.
- When one postscreen_dnsbl_sites entry produces multiple DNSBL responses, postscreen(8) applies the weight at most once.

Examples:

To use example.com as a high-confidence blocklist, and to block mail with example.net and example.org only when both agree:

`postscreen_dnsbl_threshold` = 2

`postscreen_dnsbl_sites` = example.com*2, example.net, example.org

To filter only DNSBL replies containing 127.0.0.4:

`postscreen_dnsbl_sites` = example.com=127.0.0.4

`zimbraMtaPostscreenDnsblThreshold`

Value to define the inclusive lower bound for blocking a remote SMTP client, based on its combined DNSBL score as defined with the postscreen_dnsbl_sites parameter.

Default = 1

`zimbraMtaPostscreenDnsblTTL`

The amount of time allowable for postscreen(8) to use the result from a successful DNS-based reputation test before a client IP address is required to pass that test again.

Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 1h

`zimbraMtaPostscreenDnsblWhitelistThreshold`

Allow a remote SMTP client to skip "before" and "after 220 greeting" protocol tests, based on its combined DNSBL score as defined with the postscreen_dnsbl_sites parameter.

Specify a negative value to enable this feature. When a client passes the postscreen_dnsbl_whitelist_threshold without having failed other tests, all pending or disabled tests are flagged as completed with a time-to-live value equal to postscreen_dnsbl_ttl. When a test was already completed, its time-to-live value is updated if it was less than postscreen_dnsbl_ttl.

Default = 0

`zimbraMtaPostscreenGreetAction`

The action that postscreen(8) is to take when a remote SMTP client speaks before its turn within the time specified with the postscreen_greet_wait parameter, as either ignore, enforce, or drop.

Default = ignore

`zimbraMtaPostscreenGreetTTL`

The amount of time allowed for postscreen(8) to use the result from a successful PREGREET test. During this time, the client IP address is excluded from this test. The default is relatively short, because a good client can immediately talk to a real Postfix SMTP server.

Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 1d

`zimbraMtaPostscreenNonSmtpCommandAction`

The action that postscreen(8) takes when a remote SMTP client sends non-SMTP commands as specified with the postscreen_forbidden_ commands parameter, as either ignore, enforce, or drop.

Default = drop

`zimbraMtaPostscreenNonSmtpCommandEnable`

Enable (yes) or disable (no) "non-SMTP command" tests in the postscreen(8) server. These tests are expensive: a client must disconnect after it passes the test, before it can talk to a real Postfix SMTP server.

Default = no

`zimbraMtaPostscreenNonSmtpCommandTTL`

The amount of time allowable for postscreen(8) to use the result from a successful "non_smtp_command" SMTP protocol test. During this time, the client IP address is excluded from this test. The default is long because a client must disconnect after it passes the test, before it can talk to a real Postfix SMTP server.

Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 30d

`zimbraMtaPostscreenPipeliningAction`

The action that postscreen(8) is to take when a remote SMTP client sends multiple commands instead of sending one command and waiting for the server to respond, as either ignore, enforce, or drop.

Default = enforce

`zimbraMtaPostscreenPipeliningEnable`

Enable (yes) or disable (no) "pipelining" SMTP protocol tests in the postscreen(8) server. These tests are expensive: a good client must disconnect after it passes the test, before it can talk to a real Postfix SMTP server.

Default = no

`zimbraMtaPostscreenPipeliningTTL`

Time allowable for postscreen(8) to use the result from a successful "pipelining" SMTP protocol test. During this time, the client IP address is excluded from this test. The default is lengthy because a good client must disconnect after it passes the test, before it can talk to a real Postfix SMTP server.

Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 30d

`zimbraMtaPostscreenWatchdogTimeout`

Time allowable for a postscreen(8) process to respond to a remote SMTP client command, or to perform a cache operation, before it is terminated by a built-in watchdog timer. This is a safety mechanism that prevents postscreen(8) from becoming non-responsive due to a bug in Postfix itself or in system software. To avoid false alarms and unnecessary cache corruption this limit cannot be set under 10s.

Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = 10s

`zimbraMtaPostscreenWhitelistInterfaces`

A list of local postscreen(8) server IP addresses where a non-whitelisted remote SMTP client can obtain postscreen(8)'s temporary whitelist status. This status is required before the client can talk to a Postfix SMTP server process. By default, a client can obtain postscreen(8)'s whitelist status on any local postscreen(8) server IP address.

When postscreen(8) listens on both primary and backup MX addresses, the postscreen_whitelist_interfaces parameter can be configured to give the temporary whitelist status only when a client connects to a primary MX address. Once a client is whitelisted it can talk to a Postfix SMTP server on any address. Thus, clients that connect only to backup MX addresses will never become whitelisted, and will never be allowed to talk to a Postfix SMTP server process.

Specify a list of network addresses or network/netmask patterns, separated by commas and/or whitespace. The netmask specifies the number of bits in the network part of a host address. Continue long lines by starting the next line with whitespace.

You can also specify "/file/name" or "type:table" patterns. A "/file/name" pattern is replaced by its contents; a "type:table" lookup table is matched when a table entry matches a lookup string (the lookup result is ignored).

The list is matched left to right, and the search stops on the first match. Specify "!pattern" to exclude an address or network block from the list.

Note: IPv6 address information must be specified inside [] in the postscreen_whitelist_interfaces value, and in files specified with "/file/name". IP version 6 addresses contain the ":" character, and would otherwise be confused with a "type:table" pattern.

Example:

`/etc/postfix/main.cf:`

```
# Don't whitelist connections to the backup IP address.
postscreen_whitelist_interfaces = !168.100.189.8, static:all
```

`zimbraMtaPostscreenDnsblMinTTL`

The minimum amount of time that postscreen(8) is allowed—resulting from a successful DNS-based reputation test—before a client IP address is required to pass that test again. If the DNS reply specifies a larger TTL value, that value will be used unless it would be larger than postscreen_dnsbl_max_ttl.

- Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).
- Default = 60s

`zimbraMtaPostscreenDnsblMaxTTL`

The maximum amount of time allowable for postscreen(8) to use the result from a successful DNS-based reputation test before a client IP address is required to pass that test again. If the DNS reply specifies a shorter TTL value, that value will be used unless it would be smaller than postscreen_dnsbl_min_ttl.

Specify a non-zero time value (an integral value plus an optional one-letter suffix that specifies the time unit). Time units: s (seconds), m (minutes), h (hours), d (days), w (weeks).

Default = postscreen dnsbl ttl. Note that the default seeting is backwards-compatible with Postscreen versions earlier than 3.1.

Enabling Postscreen:

The example in this section demonstrates settings appropriate for a global configuration with medium-to-high level Postscreen protection.

```
zmprov mcf zimbraMtaPostscreenAccessList permit_mynetworks
zmprov mcf zimbraMtaPostscreenBareNewlineAction ignore
zmprov mcf zimbraMtaPostscreenBareNewlineEnable no
zmprov mcf zimbraMtaPostscreenBareNewlineTTL 30d
zmprov mcf zimbraMtaPostscreenBlacklistAction ignore
zmprov mcf zimbraMtaPostscreenCacheCleanupInterval 12h
zmprov mcf zimbraMtaPostscreenCacheRetentionTime 7d
zmprov mcf zimbraMtaPostscreenCommandCountLimit 20
zmprov mcf zimbraMtaPostscreenDnsblAction enforce
zmprov mcf zimbraMtaPostscreenDnsblSites
'b.barracudacentral.org=127.0.0.2*7' zimbraMtaPostscreenDnsblSites
'dnsbl.inps.de=127.0.0.2*7'
zimbraMtaPostscreenDnsblSites'zen.spamhaus.org=127.0.0.[10;11]*8'
zimbraMtaPostscreenDnsblSites'zen.spamhaus.org=127.0.0.[4..7]*6'
zimbraMtaPostscreenDnsblSites 'zen.spamhaus.org=127.0.0.3*4'
zimbraMtaPostscreenDnsblSites 'zen.spamhaus.org=127.0.0.2*3'
zimbraMtaPostscreenDnsblSites 'list.dnswl.org=127.0.[0..255].0*-2'
zimbraMtaPostscreenDnsblSites 'list.dnswl.org=127.0.[0..255].1*-3'
zimbraMtaPostscreenDnsblSites 'list.dnswl.org=127.0.[0..255].2*-4'
zimbraMtaPostscreenDnsblSites 'list.dnswl.org=127.0.[0..255].3*-5'
zimbraMtaPostscreenDnsblSites 'bl.mailspike.net=127.0.0.2*5'
zimbraMtaPostscreenDnsblSites 'bl.mailspike.net=127.0.0.[10;11;12]*4'
zimbraMtaPostscreenDnsblSites 'wl.mailspike.net=127.0.0.[18;19;20]*-2'
zimbraMtaPostscreenDnsblSites 'dnsbl.sorbs.net=127.0.0.10*8'
zimbraMtaPostscreenDnsblSites 'dnsbl.sorbs.net=127.0.0.5*6'
zimbraMtaPostscreenDnsblSites 'dnsbl.sorbs.net=127.0.0.7*3'
zimbraMtaPostscreenDnsblSites 'dnsbl.sorbs.net=127.0.0.8*2'
zimbraMtaPostscreenDnsblSites 'dnsbl.sorbs.net=127.0.0.6*2'
zimbraMtaPostscreenDnsblSites 'dnsbl.sorbs.net=127.0.0.9*2'
zmprov mcf zimbraMtaPostscreenDnsblTTL 5m
zmprov mcf zimbraMtaPostscreenDnsblThreshold 8
zmprov mcf zimbraMtaPostscreenDnsblTimeout 10s
zmprov mcf zimbraMtaPostscreenDnsblWhitelistThreshold 0
zmprov mcf zimbraMtaPostscreenGreetAction enforce
zmprov mcf zimbraMtaPostscreenGreetTTL 1d
zmprov mcf zimbraMtaPostscreenNonSmtpCommandAction drop
zmprov mcf zimbraMtaPostscreenNonSmtpCommandEnable no
zmprov mcf zimbraMtaPostscreenNonSmtpCommandTTL 30d
zmprov mcf zimbraMtaPostscreenPipeliningAction enforce
zmprov mcf zimbraMtaPostscreenPipeliningEnable no
zmprov mcf zimbraMtaPostscreenPipeliningTTL 30d
zmprov mcf zimbraMtaPostscreenWatchdogTimeout 10s
zmprov mcf zimbraMtaPostscreenWhitelistInterfaces static:all
```

Testing Postscreen:

Testing uses Postscreen to view results without taking any action. In a testing scenario, you instruct Postscreen to log email connections without taking action on them. Once you are satisfied with the results, you can set Postscreen values to enforce or drop emails, as required.

1. Set up the DNS-based Blackhole List (DNSBL).
2. Set Postscreen to ignore.

The following real-world example demonstrates return of a 550 error from Postscreen during a test session:

```
Mar  1 02:03:26 edge01 postfix/postscreen[23154]: DNSBL rank 28 for
[112.90.37.251]:20438

Mar  1 02:03:26 edge01 postfix/postscreen[23154]: CONNECT from
[10.210.0.161]:58010 to [10.210.0.174]:25

Mar  1 02:03:26 edge01 postfix/postscreen[23154]: WHITELISTED
[10.210.0.161]:58010

Mar  1 02:03:27 edge01 postfix/postscreen[23154]: NOQUEUE: reject:
RCPT from [112.90.37.251]:20438: 550 5.7.1 Service unavailable; client
[112.90.37.251] blocked using zen.spamhaus.org;
from=<hfxdgdsggfvfg@gmail.com>, to=<support@zimbra.com>, proto=ESMTP,
helo=<gmail.com>

Mar  1 02:03:27 edge01 postfix/postscreen[23154]: DISCONNECT
[112.90.37.251]:20438
```

Receiving and Sending Mail

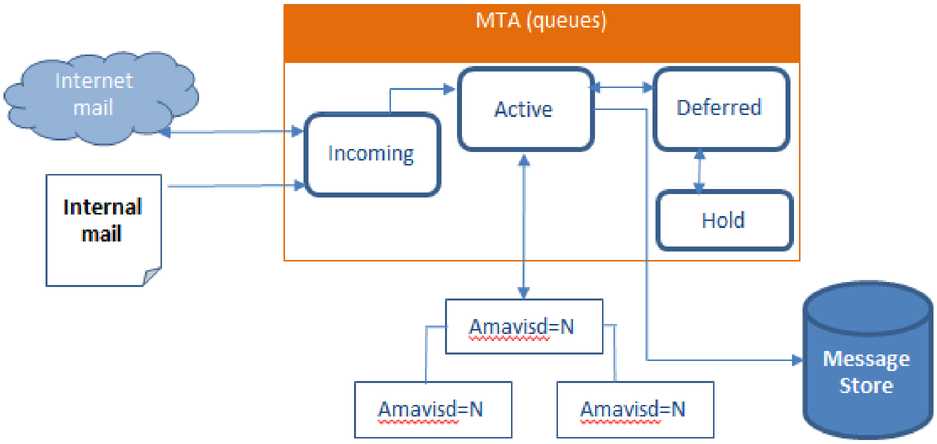
The Zimbra MTA delivers the incoming and the outgoing mail messages. For outgoing mail, the Zimbra MTA determines the destination of the recipient address. If the destination host is local, the message is passed to the Zimbra server for delivery. If the destination host is a remote mail server, the Zimbra MTA must establish a communication method to transfer the message to the remote host. For incoming messages, the MTA must be able to accept connection requests from remote mail servers and receive messages for the local users.

To send and receive email, the MTA must be configured in DNS with both an A record and an MX Record. For sending mail, the MTA uses DNS to resolve hostnames and email-routing information. To receive mail, the MX record must be configured correctly to route messages to the mail server.

You must configure a relay host if you do not enable DNS.

Message Queues

When the Zimbra MTA receives mail, it routes the mail through a series of queues to manage delivery; incoming, active, deferred, hold, and corrupt.



The **incoming** message queue holds the new mail that has been received. Each message is identified with a unique file name. Messages are moved to the active queue when there is room. If there are no problems, message move through this queue very quickly.

The **active** message queue holds messages that are ready to be sent. The MTA sets a limit to the number of messages that can be in the active queue at any one time. From here, messages are moved to and from the anti-virus and anti-spam filters before being delivered to another queue.

Messages that cannot be delivered are placed in the **deferred** queue. The reasons for the delivery failures are documented in a file in the deferred queue. This queue is scanned frequently to resend the message. If the message cannot be sent after the set number of delivery attempts, the message fails and is bounced back to the original sender. You can choose to send a notification to the sender that the message has been deferred.

The **hold** message queue keeps mail that could not be processed. Messages stay in this queue until the administrator moves them. No periodic delivery attempts are made for messages in the hold queue.

The **corrupt** queue stores damaged unreadable messages.

You can monitor the mail queues for delivery problems from the Administration Console. See Chapter 15, Monitoring ZCS Servers.

7 Zimbra Proxy Server

Zimbra Proxy is a high-performance proxy server that can be configured as a POP3/IMAP/HTTP proxy used to reverse proxy IMAP/POP3 and HTTP client requests to a set of backend servers.

The Zimbra Proxy package is installed and configured during the Zimbra Collaboration installation. You can install this package on a mailbox server, MTA server, or on its own independent server. When the Zimbra Proxy package is installed, the proxy feature is enabled. In most cases, no modification is necessary.

Topics in this chapter:

- Benefits of Using Zimbra Proxy, next.
- Zimbra Proxy Components, on page 70.
- Proxy Architecture and Flow, on page 70.
- Changing the Zimbra Proxy Configuration, on page 71
- Zimbra Proxy, on page 71.
- Configuring Zimbra HTTP Proxy, on page 74.
- Configuring Zimbra Proxy for Kerberos Authentication, on page 78.

Benefits of Using Zimbra Proxy

Benefits for using Zimbra Proxy include:

- Zimbra proxy centralizes access to Mailbox servers
- Load Balancing
- Security
- Authentication
- SSL Termination
- Caching
- Centralized Logging and Auditing
- URL Rewriting

For more information, see the wiki page http://wiki.zimbra.com/wiki/Zimbra_Proxy_Guide.

Zimbra Proxy Components

Zimbra Proxy is designed to provide a HTTP/POP/IMAP proxy that is quick, reliable, and scalable. Zimbra Proxy includes the following:

Component	Description
Nginx	High performance HTTP/IMAP/POP3 proxy server that handles all incoming HTTP/POP/IMAP requests.
Memcached	High performance distributed memory object caching system in which routing information is cached to enable increased performance.
Zimbra Proxy Route Lookup Handler	Servelet—located on the ZCS mailbox server—that handles queries for the user account route information. This routing information consists of the server and port number where the user account resides.

Proxy Architecture and Flow

This section describes the architecture and flow sequence of Zimbra proxy.

1. End clients connect to Zimbra Proxy using HTTP/HTTPS/POP/IMAP ports.
2. When Zimbra Collaboration Proxy receives an incoming connection, the Nginx component sends an HTTP request to Zimbra Collaboration Proxy Route Lookup Handler component.

3. Zimbra Collaboration Proxy Route Lookup Handler locates the route information for the account being accessed and returns this to Nginx.
4. The Memcached component stores the route information for the configured period of time (the default is one hour). Nginx uses this route information instead of querying the Zimbra Collaboration Proxy Route Lookup Handler until the default period of time has expired.
5. Nginx uses the route information to connect to Zimbra Collaboration Mailbox.

6. Zimbra Collaboration Proxy connects to Zimbra Collaboration Mailbox and initiates the web/mail proxy session. The end client behaves as if it is connecting directly to Zimbra Collaboration Mailbox.

Changing the Zimbra Proxy Configuration

When Zimbra proxy is configured, the Zimbra proxy config performs keyword substitution as necessary with values from the . LDAP configuration and localconfig.

If changes are required after the Zimbra Proxy is set up, modify the Zimbra LDAP attributes or localconfig values and run `zmconfigd` to generate the updated Zimbra Proxy configuration. The Zimbra proxy configuration file is in `/opt/zimbra/conf/nginx.conf`. The nginx.conf includes the main config, memcache config, mail config, and web config files.

Common changes to Zimbra Proxy configuration are IMAP/POP configuration changes from the original default setup

- HTTP reverse proxy configuration changes from the original default setup
- GSSAPI authentication for Kerberos. In this case you manually identify the location of the Kerberos Keytab file, including Zimbra Proxy password

Zimbra Proxy

Zimbra Proxy allows end users to access their Zimbra Collaboration account using end clients such as Microsoft Outlook, Mozilla Thunderbird, or other POP/IMAP end-client software. End users can connect using POP3, IMAP, POP3S (Secure POP3), or IMAPS (Secure IMAP).

For example, proxying allows users to enter imap.example.com as their IMAP server. The proxy running on imap.example.com inspects their IMAP traffic, does a lookup to determine which backend mailbox server a user's mailbox lives on and transparently proxies the connection from user's IMAP client to the correct mailbox server.

Zimbra Proxy Ports

The following ports are used either by Zimbra Proxy or by Zimbra Mailbox (if Proxy is not configured). If you have any other services running on these ports, turn them off.

End clients connect directly to Zimbra Proxy, using the Zimbra Proxy Ports. Zimbra Proxy connects to the Route Lookup Handler or Zimbra Mailbox using the Zimbra Mailbox Ports.

Zimbra Proxy Ports (External to ZCS)	Port
HTTP	80
HTTPS	443
POP3	110

POP3S (Secure POP3)	995
IMAP	143
IMAPS (Secure IMAP)	993
Zimbra Mailbox Ports (Internal to ZCS)	**Port**
Route Lookup Handler	7072
HTTP Backend (if Proxy configured)	8080
HTTPS Backend (if Proxy configured)	8443
POP3 Backend (if Proxy configured)	7110
POP3S Backend (if Proxy configured)	7995
IMAP Backend (if Proxy configured)	7143
IMAPS Backend (if Proxy configured)	7993

Setting Up IMAP and POP Proxy After HTTP Proxy Installation

. IMAP proxy is installed with Zimbra Collaboration and set up during installation from the configuration menus. To set up the HTTP proxy, . proxy must be installed on the identified proxy nodes in order to set up HTTP proxy. No other configuration is usually required.

If you need to set up IMAP/POP proxy after you have already installed . HTTP proxy, and set up the . mailbox server and the proxy node.

Note: *You can run the command as* **zmproxyconfig -r**, *to run against a remote host. This requires the server to be properly configured in the LDAP master.*

Set Up IMAP/POP Proxy with Separate Proxy Node

CLI: Use steps in this section if your configuration includes a separate proxy server.

1. On each Zimbra mailbox server that you want to proxy with, enable the proxy for IMAP/POP proxy.

   ```
   /opt/zimbra/libexec/zmproxyconfig -e -m -H
   mailbox.node.service.hostname
   ```

   This configures the following:

Port Attributes	Setting
`zimbraImapBindPort`	7143
`zimbraImapProxyBindPort`	143
`zimbraImapSSLBindPort`	7993
`zimbraImapSSLProxyBindPort`	993
`zimbraPop3BindPort`	7110
`zimbraPop3ProxyBindPort`	110
`zimbraPop3SSLBindPort`	7995

Port Attributes (Continued)	Setting
zimbraPop3SSLProxyBindPort	995
zimbralmapCleartextLoginEnabled	TRUE
zimbraReverseProxyLookupTarget	TRUE
zimbraPop3CleartextLoginEnabled	TRUE

2. Restart services on the proxy and mailbox servers.

```
zmcontrol restart
```

Set Up the Proxy Node

CLI: On each proxy node that has the proxy service installed, enable the proxy for the web.

```
/opt/zimbra/libexec/zmproxyconfig -e -m -H
proxy.node.service.hostname
```

This configures the following:

Port Attribute	Setting
zimbraImapBindPort	7143
zimbraImapProxyBindPort	143
zimbraImapSSLBindPort	7993
zimbraImapSSLProxyBindPort	993
zimbraPop3BindPort	7110
zimbraPop3ProxyBindPort	110
zimbraPop3SSLBindPort	7995
zimbraPop3SSLProxyBindPort	995
zimbraReverseProxyMailEnabled	TRUE

Setting Up a Single Node

CLI: Use steps in this section if Zimbra proxy is installed with Zimbra Collaboration on the same server..

1. Enable the proxy for the web.

```
/opt/zimbra/libexec/zmproxyconfig -e -m -H
mailbox.node.service.hostname
```

This configures the following:

Port Attribute	Setting
zimbraImapBindPort	7143
zimbraImapProxyBindPort	143
zimbraImapSSLBindPort	7993
zimbraImapSSLProxyBindPort	993

Port Attribute (Continued)	Setting
`zimbraPop3BindPort`	7110
`zimbraPop3ProxyBindPort`	110
`zimbraPop3SSLBindPort`	7995
`zimbraPop3SSLProxyBindPort`	995
`zimbraImapCleartextLoginEnabled`	TRUE
`zimbraReverseProxyLookupTarget`	TRUE
`zimbraPop3CleartextLoginEnabled`	TRUE
`zimbraReverseProxyMailEnabled`	TRUE

2. Restart services on the proxy and mailbox servers.

```
zmcontrol restart
```

Configuring Zimbra HTTP Proxy

Zimbra Proxy can also reverse proxy HTTP requests to the right back-end server.

For example, users can use a web browser to connect to the proxy server at http://mail.example.com. The connection from users whose mailboxes live on mbs1. example.com is proxied to mbs1.example.com by the proxy running on the mail.example.com server,. REST and CalDAV clients, Zimbra Connector for Outlook, Zimbra Connector for BES, and Zimbra Mobile Sync devices are also supported by the proxy.

Note: *When ZCB is configured in Zimbra Collaboration, the proxy configuration must be changed from the directions here. See the Zimbra wiki article*
Installing Blackberry Enterprise Server in a Zimbra Proxy Environment at http://wiki.zimbra.com/wiki/Installing_Blackberry_Enterprise_Server_%28ZCB/BES%29_in_a_Zimbra_Proxy_Environment.

HTTP reverse proxy routes requests as follows:

- If the requesting URL can be examined to determine the user name, then the request is routed to the backend mailbox server of the user in the URL. REST, CalDAV, and Zimbra Mobile Sync are supported through this mechanism.
- If the request has an auth token cookie (**ZM_AUTH_TOKEN**), the request is routed to the backend mailbox server of the authenticated user.
- If the above methods do not work, the IP hash method is used to load balance the requests across the backend mailbox servers which are able to handle the request or do any necessary internal proxying.

Setting Up HTTP Proxy

To set up HTTP proxy, Zimbra Proxy must be installed on the identified nodes.

Note: *You can run the command as* **/opt/zimbra/libexec/zmproxyconfig -r,** *to run against a remote host. Note that this requires the server to be properly configured in the LDAP master.*

Setting Up HTTP Proxy as a Separate Proxy Node

CLI: Use steps in this section if your configuration includes a separate proxy server.

1. On each Zimbra mailbox server that you want to proxy with, enable the proxy for the web.

   ```
   /opt/zimbra/libexec/zmproxyconfig -e -w -H
   mailbox.node.service.hostname
   ```

   This configures the following:

Attribute	Setting
zimbraMailReferMode	reverse-proxied.
zimbraMailPort	8080 (to avoid port conflicts)
zimbraMailSSLPort	8443 (to avoid port conflicts)
zimbraReverseProxyLookupTarget	TRUE
zimbraMailMode	HTTP

2. Restart services on the proxy and mailbox servers.

   ```
   zmcontrol restart
   ```

3. Configure each domain with the public service host name to be used for REST URLs, email, and Briefcase folders.

   ```
   zmprov modifyDomain <domain.com> zimbraPublicServiceHostname
   <hostname.domain.com>
   ```

Setting Up Proxy Node

CLI: On each proxy node that has the proxy service installed, enable the proxy for the web.

```
/opt/zimbra/libexec/zmproxyconfig -e -w -H
proxy.node.service.hostname
```

This configures the following:

Attribute	Setting
zimbraMailReferMode	reverse-proxied. To set the proxy server mail mode, add the -x option to the command, with the specific mode as either http, https, both, redirect, or mixed.
zimbraMailProxyPort	80, (to avoid port conflicts).
zimbraMailSSLProxyPort	443 (to avoid port conflicts).
zimbraReverseProxyHttpEnabled	TRUE (to indicate that Web proxy is enabled).
zimbraReverseProxyMailMode	HTTP (default)

To set the proxy server mail mode, add the **-x** option to the command with the specific mode: **http, https, both, redirect, mixed**.

Set Up a Single Node for HTTP Proxy

CLI: Use steps in this section if Zimbra proxy is installed along with ZCS on the same server..

1. On each zimbra mailbox server that you want to proxy with, enable the proxy for the web.

   ```
   /opt/zimbra/libexec/zmproxyconfig -e -w -H
   mailbox.node.service.hostname
   ```

   This configures the following:

Attribute	Setting
zimbraMailReferMode	reverse-proxied.
zimbraMailPort	8080 (to avoid port conflicts)
zimbraMailSSLPort	8443 (to avoid port conflicts)
zimbraReverseProxyLookupTarget to TRUE	TRUE
zimbraMailMode	HTTP (the only supported mode)
zimbraMailProxyPort	80 (to avoid port conflicts)
zimbraMailSSLProxyPort	443 (to avoid port conflicts)
zimbraReverseProxyHttpEnabled	TRUE (to indicate that Web proxy is enabled)
zimbraReverseProxyMailMode	HTTP (default)

   To set the proxy server mail mode, add the **-x** option to the command with the specific mode: **http, https, both, redirect, mixed**.

2. Restart services on the proxy and mailbox servers.

   ```
   zmcontrol restart
   ```

Configure each domain with the public service host name to be used for REST URLs, email and Briefcase folders.

```
zmprov modifyDomain <domain.com> zimbraPublicServiceHostname
<hostname.domain.com>
```

Set Up Proxy to use Clear Text for Upstream Connections

CLI: When setting up the proxy to use clear text for upstream connections, set `zimbraReverseProxySSLToUpstreamEnabled` to FALSE.

This attribute defaults to TRUE. In an "out of the box" proxy set up, the upstream communication defaults to SSL.

REST URL Generation

CLI: For REST URL, you set the host name, service protocol, and services port globally or for a specific domain from the following attributes.

- `zimbraPublicServiceHostname`
- `zimbraPublicServiceProtocol`
- `zimbraPublicServicePort`

When generating REST URL's:

- If domain.`zimbraPublicServiceHostname` is set, use `zimbraPublicServiceProtocol + zimbraPublicServiceHostname + zimbraPublicServicePort`
- Otherwise it falls back to the server (account's home server) attributes:
  - protocol is computed from server.zimbraMailMode
  - hostname is `server.zimbraServiceHostname`
  - port is computed from the protocol.

Note: *About using* `zimbraMailReferMode` - *In earlier versions, a local config variable—*`zimbra_auth_always_send_refer`*—determined which action the back-end server took when a user's mailbox did not reside on the server that the user logged in to. The default value of FALSE redirected the user if the user was logging in on the incorrect backend host.*

On a multiserver ZCS, if a load balanced name was needed to create a friendly landing page, a user would always have to be redirected. In that case, `zimbra_auth_always_send_refer` was set to TRUE.

Now with a full-fledged reverse proxy, users do not need to be redirected. The localconfig variable `zimbraMailReferMode` is used with nginx reverse proxy.

Setting Proxy Trusted IP Addresses

CLI: When a proxy is configured with ZCS, each proxy server's IP address must be configured in LDAP attribute `zimbraMailTrustedIP` to identify the proxy addresses as trusted when users log in through the proxy. The proxy IP address is added to the X-Forwarded-For header information. The `X-Forwarded-For` header is automatically added to the localconfig `zimbra_http_originating_ip_header` attribute. When a user logs in, this IP address and the user's address are verified in the Zimbra mailbox log.

Set each proxy IP address in the attribute. For example, if you have two proxy servers:

```
zmprov mcf +zimbraMailTrustedIP {IP of nginx-1}
+zimbraMailTrustedIP {IP of nginx-2}
```

Note: *To verify that X-Forwarded-For was correctly added to the localconfig, type* `zmlocalconfig | grep -i http.` *You should see* `zimbra_http originating_ip_header = X-Forwarded-For`*.*

Configuring Zimbra Proxy for Kerberos Authentication

CLI: Use steps in this section if you use the Kerberos5 authenticating mechanism, and want to configure it for the IMAP and POP proxy.

Note: *Make sure that your Kerberos5 authentication mechanism is correctly configured. See Chapter 5, Zimbra LDAP Service.*

1. On each proxy node, set the `zimbraReverseProxyDefaultRealm` server attribute to the realm name corresponding to the proxy server. For example:

   ```
   zmprov ms [DNS name.isp.net] zimbraReverseProxyDefaultRealm
   [ISP.NET]
   ```

2. Each proxy IP address where email clients connect must be configured for GSSAPI authentication by the mail server. On each proxy node for each of the proxy IP addresses:

   ```
   zmprov mcf +zimbraReverseProxyAdminIPAddress [IP address]
   ```

3. On each proxy server:

   ```
   zmprov ms [proxyexample.net]
   zimbraReverseProxyImapSaslGssapiEnabled TRUE
   ```

   ```
   zmprov ms proxyl.isp.net
   zimbraReverseProxyPop3SaslGssapiEnabled TRUE
   ```

4. Restart the proxy server

   ```
   zmproxyctl restart
   ```

8 Zimbra Administration Console

The Zimbra Administration Console is a browser-based user interface that allows you to centrally manage Zimbra servers and user accounts.

Topics in this chapter:

- Administrator Accounts, next.
- Logging in to the Administration Console, on page 80.
- Managing Tasks, on page 81.
- Navigating the User Interface, on page 82.
- Message of the Day, on page 99.
- Functional Reference, on page 100.

Administrator Accounts

When you installed Zimbra Collaboration, one Global Administrator account was created, which enables log in to the Administration Console to manage accounts and server configurations. Additional administrator accounts can be created. All administrator accounts have equal privileges.

To give administrator privileges to an account, check the **Global Administrator** box on the **General Information** page in the user's account.

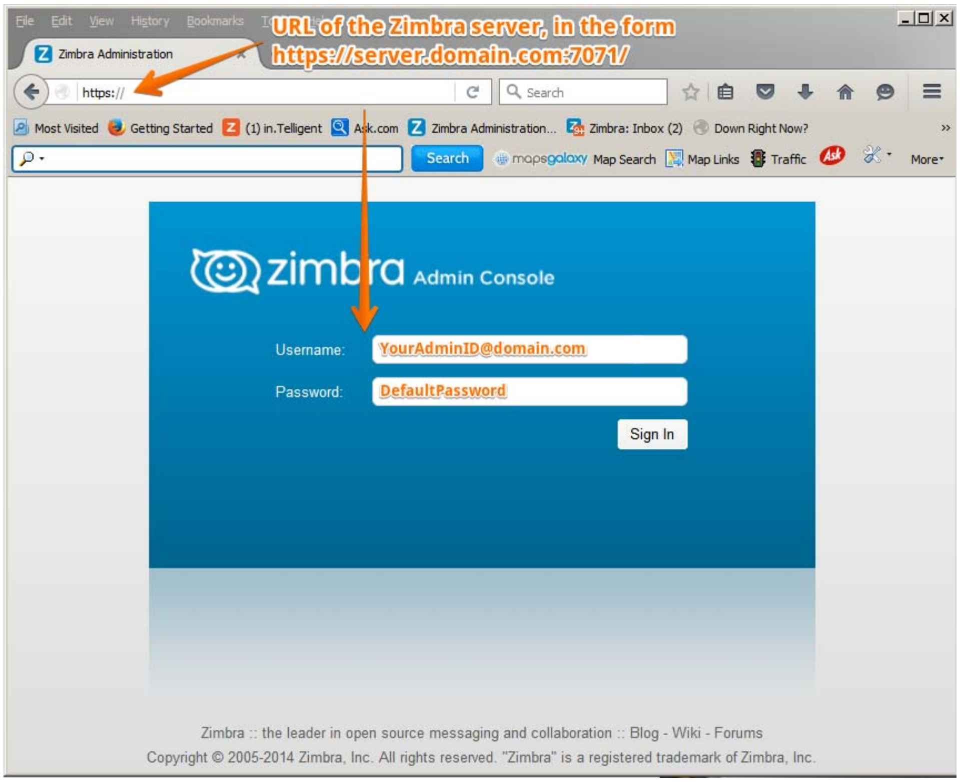
Logging in to the Administration Console

1. To launch the Administration Console in a typical installation, use the following URL pattern.

   https://server.domain.com:7071/

Parameter	Description
server,domain	The Zimbra server name or IP address.
7071	The default HTTP listen port.

2. At the login screen, enter the complete administrator address—as **admin@domain.com**—and the password that was configured during server installation of Zimbra Collaboration.



URL of the Zimbra server, in the form https://server.domain.com:7071/

Username: YourAdminID@domain.com

Password: DefaultPassword

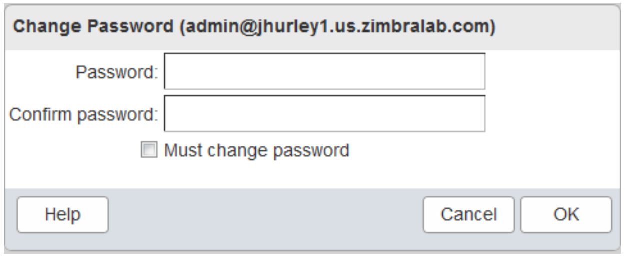
zimbra Admin Console
Sign In
https://
Zimbra Administration
Zimbra :: the leader in open source messaging and collaboration :: Blog - Wiki - Forums
Copyright © 2005-2014 Zimbra, Inc. All rights reserved. "Zimbra" is a registered trademark of Zimbra, Inc.

Modifying Administrator Passwords

You can change the password—from either the Administration Console or the CLI—at any time.

From the Administration Console, use the **Change Password** screen to set the new password string, and to define policy for user password modifications.

Admin Console: **Home**> **Manage**> **Accounts**; select/highlight user account
or
From the **Gear** icon, select **Change Password** from the popup menu.



Change Password (admin@jhurley1.us.zimbralab.com)

Password:

Confirm password:

☐ Must change password

CLI: `zmprov sp adminname@domain.com password`

CLI:

CLI:

Managing Tasks

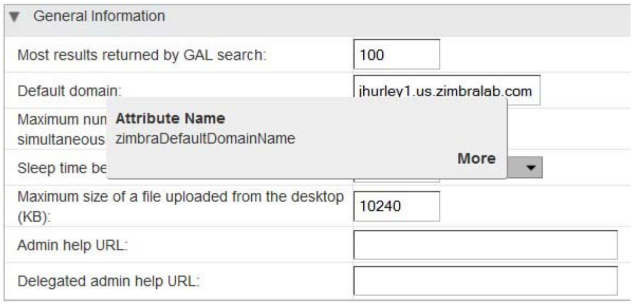
Most ZCS tasks—such as creating accounts and Classes of Service, Server Status Monitoring, Domain management, Backup Scheduling and Session management—can be managed from the Administration Console.

Other configuration and maintenance tasks cannot be handled from the Administration Console—such as starting and stopping services and managing the local server configuration—and require use of the Zimbra CLI.

At the Administration Console, if you need to view the attribute associated with a particular function, you can click on the text labels of the configuration page currently in view to view the information in a popup. Guide text is also provided from these popups, as demonstrated in the following illustration.

Viewing Attributes at the Administration Console

Click the field label to view the Attribute popup.

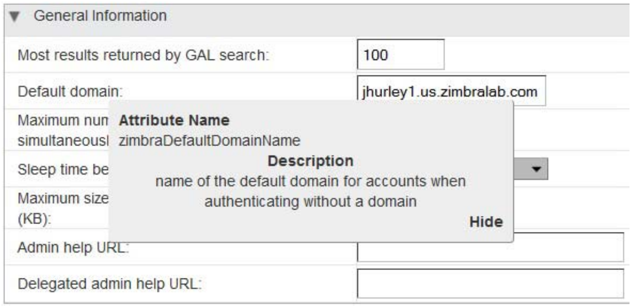


▼ General Information

Most results returned by GAL search:	100
Default domain:	jhurley1.us.zimbralab.com
Maximum nun simultaneous	
Sleep time be	
Maximum size of a file uploaded from the desktop (KB):	10240
Admin help URL:	
Delegated admin help URL:	

Attribute Name
zimbraDefaultDomainName
More

With the attribute popup in view, click **More** to view guide text about the field.



▼ General Information

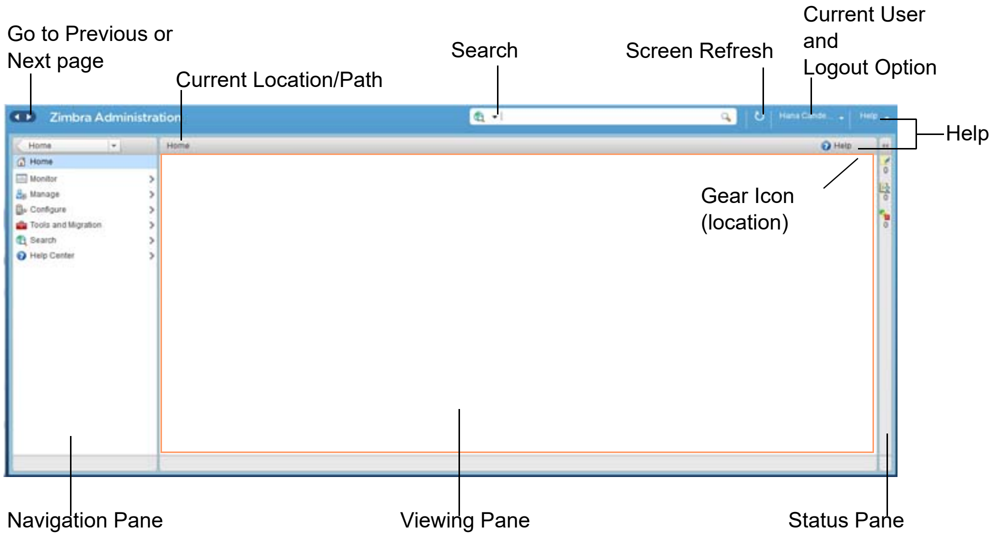
Most results returned by GAL search:	100
Default domain:	jhurley1.us.zimbralab.com
Maximum nun simultaneousl	
Sleep time be	
Maximum size (KB):	
Admin help URL:	
Delegated admin help URL:	

Attribute Name
zimbraDefaultDomainName
Description
name of the default domain for accounts when authenticating without a domain
Hide

Navigating the User Interface

The Zimbra Collaboration Administration Console is organized to provide quick navigation to the configuration and monitoring tools and views associated with your login privileges. It also provides easy access to various types of **Help** and the on-screen guide text.

After logging in to the Administration Console, the **Home** page is displayed to provide status information and options you can select to navigate to the configuration and viewing options described in this user guide.



The displays and options in the navigation pane and viewing pane change in accordance with your selections. Other portions of the UI—arrow buttons, search field, screen refresh, current location/path, current login, and Help—always remain in view.

The Gear Icon is displayed with certain screens, to enable quick access to functions associated with the functions provided in the screens. For more information about the Gear icon, see Using the Gear icon, on page 101.

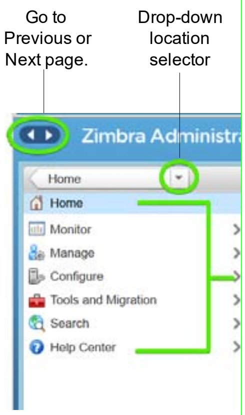
Home Navigation Pane

The options provided in the **Home** navigation pane are categorically defined under the **Home** directory. Some of the options lead to configuration pages; others lead to pages containing reports, as associated with your selections.

The illustration at right is an expanded view of the options currently supported in the Navigation Pane.

Your current position in the hierarchy is always displayed at the upper bar of the page currently in view, and you can use multiple options for dismissing the current view:

- To return to a previous page or go to a next page, click the left or right arrows.
- To return to a specific portion of the UI, select an option from the Home drop down.
- To go directly to a specific option, click through the hierarchy in the Navigation Pane.



Home
- Summary
- Maintenance
- Runtime
- 1 Get Started
- 2 Set up Domain
- 3 Add Accounts

Monitor
- Server Status
- Advanced Statistics
- Message Count
- Message Volume
- Anti-Spam/Anti-Virus Activity
- MobileSync Statistics
- Server Statistics
- Mail Queues

Manage
- Accounts
- Aliases
- Distribution Lists
- Resources

Configure
- Class of Service
- Domains
- Servers
- Global Settings
  - General Information
  - Attachments
  - MTA
  - IMAP
  - POP
  - AS/AV
  - Free/Busy Interop
  - Themes
  - Advanced
  - Authentication
  - Retention Policy
  - Proxy
  - Backup/Restore
  - License
  - HSM
  - S/MIME
  - ACL
- Zimlets
- Admin Extensions
- Certificates
- Voice/Chat Service
- Rights
- Global ACL

Tools and Migration
- Downloads
- Software Updates
- Account Migration
- Client Upload
- Backups

Search
- Counts
- Search Options
- Saved Searches

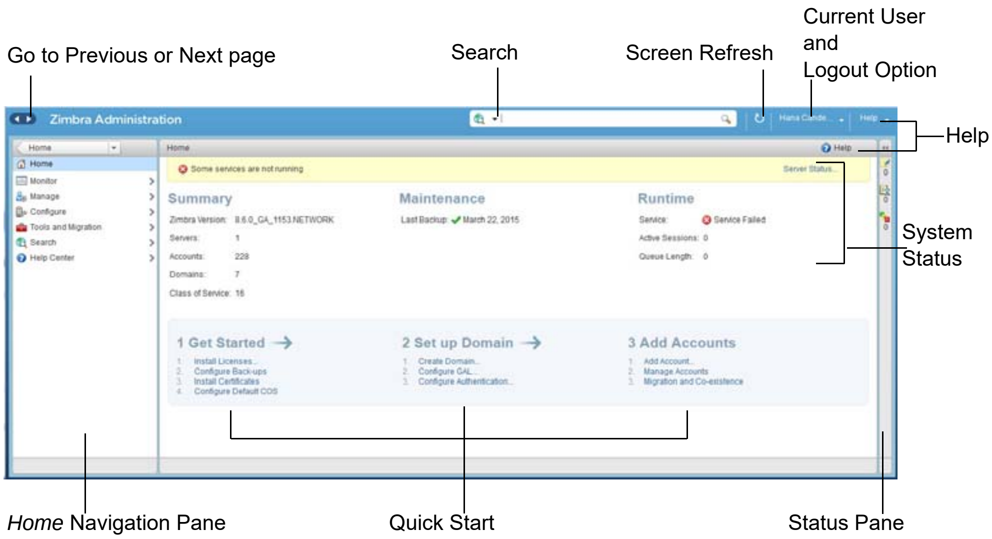
Help Center

The Navigation pane options are described in the following topics:

- Home UI.
- Monitor UI.
- Manage UI.
- Configure UI.
- Global Settings UI.
- Tools and Migration UI.
- Search UI.

Home UI

The **Home** screen is the default, login view, which provides the **Home** navigation pane and the Home page. This page provides a snapshot view of system status and a series of quick access links for essential tasks.



Some services are not running

Zimbra Version: 8.6.0_GA_1153.NETWORK
Servers: 1
Accounts: 228
Domains: 7
Class of Service: 16

Last Backup: ✓ March 22, 2015

Service: Service Failed
Active Sessions: 0
Queue Length: 0

1. Install Licenses...
2. Configure Back-ups
3. Install Certificates
4. Configure Default COS

1. Create Domain...
2. Configure GAL...
3. Configure Authentication...

1. Add Account...
2. Manage Accounts
3. Migration and Co-existence

Table 9: Home UI

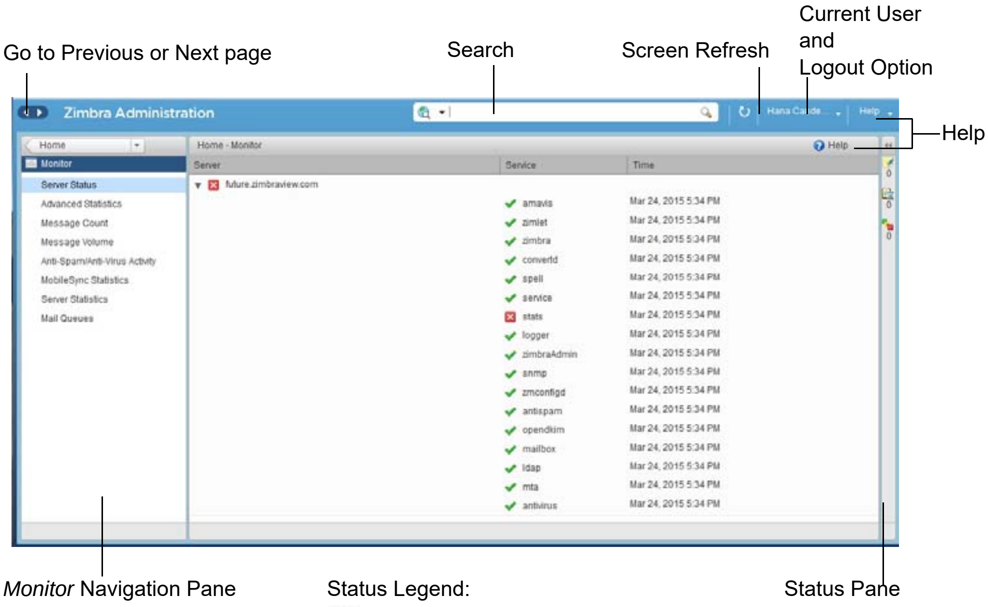
Topic	Description
Summary	Displays the version of Zimbra Collaborator currently running and in view, and the detected number of servers, account, domains, and classes of service associated with this session.
Maintenance	Displays the most recent software backup performed.
Runtime	Displays the runtime statistics for Service, Active Session, and Queue Length.

Table 9: Home UI (Continued)

Topic	Description
1 Get Started	Displays the steps essential to getting started with your Zimbra Collaboration operations, and provides quick links to the functions in this UI: 1. Install Licenses 2. Configure Back-ups 3. Install Certificates 4. Configure Default COS
2 Set up Domain	Displays the steps you use to establish the domain(s) to be managed by the Collaborator. Each step is a link to the function in this UI: 1. Create Domain 2. Configure GAL... 3. Configure Authentication
3 Add Accounts	Displays the steps for adding accounts for management by the Collaborator. Each step is a link to the function in this UI: 1. Add Account 2. Manage Accounts 3. Migration and Co-existence

Monitor UI

The **Monitor** screen provides the Monitor navigation pane and the Monitor pages, which display various itemizations about servers monitored by the Collaborator.



Server	Service	Time
☒ future.zimbraview.com		
	✓ amavis	Mar 24, 2015 5:34 PM
	✓ zimlet	Mar 24, 2015 5:34 PM
	✓ zimbra	Mar 24, 2015 5:34 PM
	✓ convertd	Mar 24, 2015 5:34 PM
	✓ spell	Mar 24, 2015 5:34 PM
	✓ service	Mar 24, 2015 5:34 PM
	☒ stats	Mar 24, 2015 5:34 PM
	✓ logger	Mar 24, 2015 5:34 PM
	✓ zimbraAdmin	Mar 24, 2015 5:34 PM
	✓ snmp	Mar 24, 2015 5:34 PM
	✓ zmconfigd	Mar 24, 2015 5:34 PM
	✓ antispam	Mar 24, 2015 5:34 PM
	✓ opendkim	Mar 24, 2015 5:34 PM
	✓ mailbox	Mar 24, 2015 5:34 PM
	✓ ldap	Mar 24, 2015 5:34 PM
	✓ mta	Mar 24, 2015 5:34 PM
	✓ antivirus	Mar 24, 2015 5:34 PM

Status Legend:

✓ No problems detected.

☒ Server or service is not available.

Monitor Navigation Pane and Pages

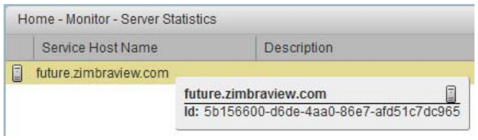
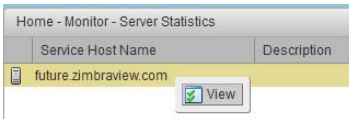
The options provided in the **Monitor** pages provide various methods—dynamic charts, or tables—for viewing the individual or system-wide monitored servers and services listed in the following table.

Note: *Adobe Flash Player must be activated to enable views of the dynamic charts.*

Table 10: Monitor UI

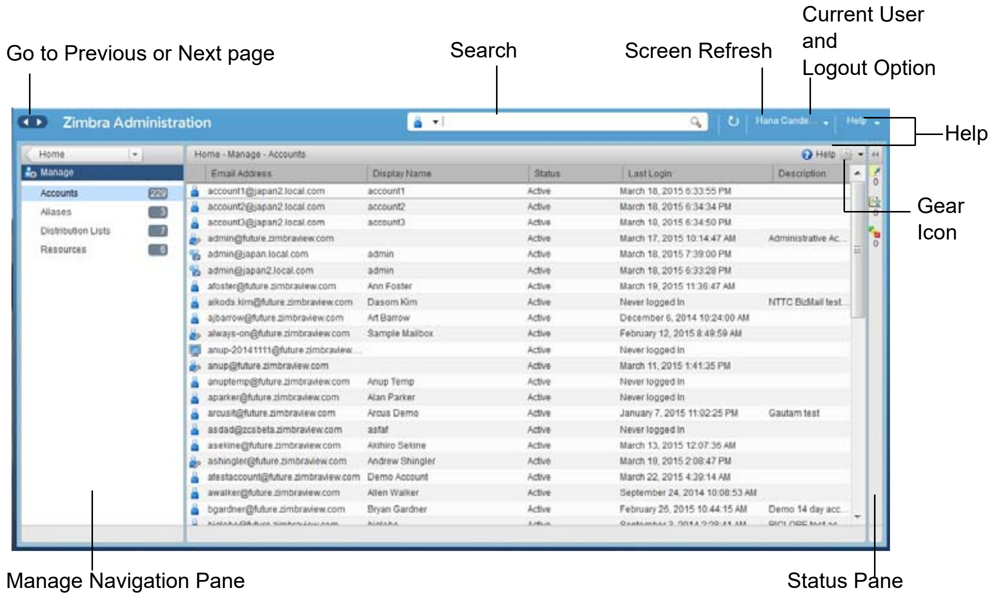
Option	**Description**
Server Status	Server, Service, and Time details for each server monitored by the Collaborator.
Advanced Statistics	System-wide Information page, for Advanced Statistics, which allows you to set up a new monitoring chart using parameters from the selection fields available from this page: Server, Group, Start, end, and Counters. From this Advanced Statistics page, you can also elect to perform the following operations: • Hide Chart Settings • Update Chart, • Remove Chart
Message Count	System-wide Information page, for Message Counts, to examine charts depicting counts over the last 48, 30, 60, and 365 days. The information provided is based on the number of recipients of messages using either SMTP or LMTP. The polling intervals for the counts are posted directly beneath each chart.
Message Volume	System-wide Information page, for Message Volume, to view charts depicting the number of recipients of messages—using either SMTP or LMTP—and associated message sizes. These counts are shown in periods over the last 48, 30, 60, and 365 days. The polling intervals for the counts are posted directly beneath each chart.
Anti-Spam/Anti-Virus Activity	System-wide Information page, for Anti-Spam/Anti-Virus Activity, depicting the number of unique messages processed by the AS/AC system over the last 48, 30, 60, and 365 days. The polling intervals for the counts are posted directly beneath each chart.
Mobile Sync Statistics	System-wide Information page, for Mobile Sync Sessions, which reports the total number of Active Sync devices across servers.

Table 10: Monitor UI (Continued)

Option	Description
Server Statistics	Access to statistics for a selected Service Host. You can view information for a selected host, as follows: • Place and hold the cursor on the Service Host name to view popup license information.  Home - Monitor - Server Statistics Service Host Name | Description future.zimbraview.com future.zimbraview.com Id: 5b156600-d6de-4aa0-86e7-afd51c7dc965 • Right-click on the Service Host name and select **View** from the popup to go to the statistics page for it. You can also double-click on the Service Host name to access the statistics page.  Home - Monitor - Server Statistics Service Host Name | Description future.zimbraview.com View For the selected Server, the Server Statistics navigation pane provides options to view Disk, Session, Mailbox Quota, Message Count, Message Volume, and Anti-Spam/Anti-Virus Activity.
Mail Queues	Tab pages from which to view counts of Deferred, Incoming, Active, Held, and Corrupt statistics for detected mail queues. Each tab page provides summary filtering information and Message details.

Manage UI

The **Manage** screen provides the **Manage** navigation pane and the **Manage** pages, which display the tables categorically provided as Accounts, Aliases, Distribution Lists, and Resources that are currently managed by Collaborator.



Home - Manage - Accounts

Email Address	Display Name	Status	Last Login	Description
account1@japan2.local.com	account1	Active	March 18, 2015 6:33:55 PM	
account2@japan2.local.com	account2	Active	March 18, 2015 6:34:34 PM	
account3@japan2.local.com	account3	Active	March 18, 2015 6:34:50 PM	
admin@future.zimbraview.com		Active	March 17, 2015 10:14:47 AM	Administrative Ac...
admin@japan.local.com	admin	Active	March 18, 2015 7:39:00 PM	
admin@japan2.local.com	admin	Active	March 18, 2015 6:33:28 PM	
afoster@future.zimbraview.com	Ann Foster	Active	March 19, 2015 11:36:47 AM	
aikods.kim@future.zimbraview.com	Dasom Kim	Active	Never logged In	NTTC BizMail test...
ajbarrow@future.zimbraview.com	Art Barrow	Active	December 6, 2014 10:24:00 AM	
always-on@future.zimbraview.com	Sample Mailbox	Active	February 12, 2015 8:49:59 AM	
anup-20141111@future.zimbraview...		Active	Never logged In	
anup@future.zimbraview.com		Active	March 11, 2015 1:41:35 PM	
anuptemp@future.zimbraview.com	Anup Temp	Active	Never logged In	
aparker@future.zimbraview.com	Alan Parker	Active	Never logged In	
arcusit@future.zimbraview.com	Arcus Demo	Active	January 7, 2015 11:02:25 PM	Gautam test
asdad@zcsbeta.zimbraview.com	asfaf	Active	Never logged In	
asekine@future.zimbraview.com	Akihiro Sekine	Active	March 13, 2015 12:07:36 AM	
ashingler@future.zimbraview.com	Andrew Shingler	Active	March 19, 2015 2:08:47 PM	
atestaccount@future.zimbraview.com	Demo Account	Active	March 22, 2015 4:39:14 AM	
awalker@future.zimbraview.com	Allen Walker	Active	September 24, 2014 10:08:53 AM	
bgardner@future.zimbraview.com	Bryan Gardner	Active	February 26, 2015 10:44:15 AM	Demo 14 day acc...

Table 11: Manage UI

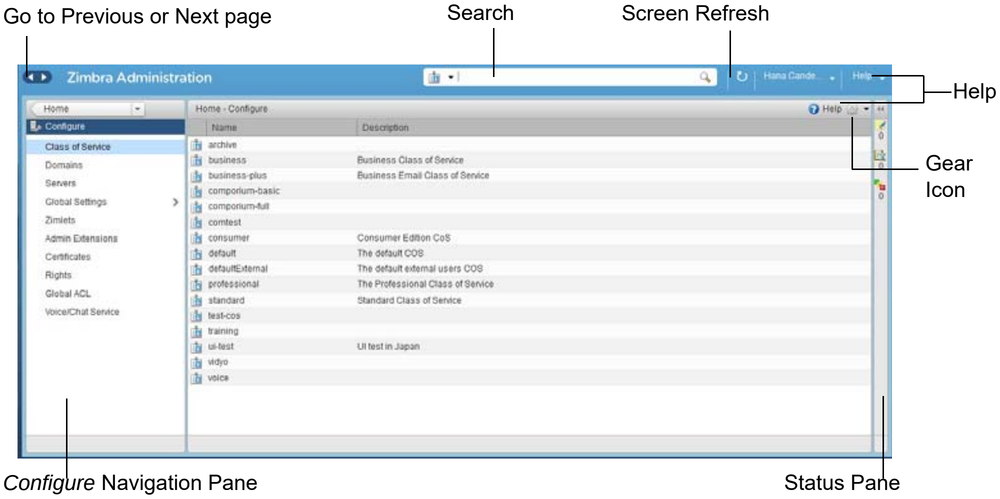
Option	Description
Accounts (count)	Table of accounts managed by the Collaborator. Actions you can perform: • View ID information from a popup display: Hold the cursor over an Accounts row. • Right-click on a table row, or use the Gear icon to access the following functions: **Delete**, **Edit**, **Change Password**, **New Administrator**, **View Mail, New**, **Invalidate Session**, **View Rights**, **Configure Grants**, **Move Mailbox**, **Search Mail**.
Aliases (count)	Table of Aliases managed by the Collaborator. Each alias is an email address that forwards all email to a specified account. Actions you can perform: • View ID information in a popup display: Hold the cursor over an Alias row. • Right-click on a table row, or use the Gear icon to access the following functions: **Delete**, **Edit**, **New Administrator**, **View Mail, Move Alias**, **New**, **Invalidate Session**, **View Rights, Configure Grants**, **Move Mailbox**, **Search Mail**.

Table 11: Manage UI (Continued)

Option	Description
Distribution Lists (count)	Table of Distribution Lists managed by the Collaborator. A Distribution List is a group of mail addresses contained in a list, with a common mail address. When you sen to a distribution list, you are sending to everyone whose address is included in the list. the **To:** address line displays the distribution list address. Actions you can perform: • View ID information: Hold the cursor over an Distribution List row. • Right-click on a table row, or use the Gear icon to access the following functions: **Delete**, **Edit**, **New Administrator**, **View Mail**, **New**, **View Rights**, **Configure Grants, Search Mail.**
Resources (count)	Table of Resources managed by the Collaborator. A Resource is a location or a piece of equipment that can be scheduled for meetings. Actions you can perform: • View ID information: Hold the cursor over a Resources row. • Right-click on a table row, or use the Gear icon to access the following functions: **Delete**, **Edit**, **New Administrator**, **View Mail, New**, **View Rights**, **Configure Grants, Search Mail**.

Configure UI

The **Configure** screen provides the **Configure** navigation pane and the **Configure** pages, which enable configurations for individual and/or global components.



Name	Description
archive	
business	Business Class of Service
business-plus	Business Email Class of Service
comporium-basic	
comporium-full	
comtest	
consumer	Consumer Edition CoS
default	The default COS
defaultExternal	The default external users COS
professional	The Professional Class of Service
standard	Standard Class of Service
test-cos	
training	
ui-test	UI test in Japan
vidyo	
voice	

Table 12: Configure UI

Option	Description
Class of Service	Displays the COSs managed from this Administration Console. • Double-click on a table row to access the configuration screens for the selected COS, or • Right-click on a table row, or use the Gear icon to access the following functions: **New**, **Delete**, **Edit**, **Duplicate**
Domains	Displays the domains managed from this Administration Console. • Double-click on a table row to access the configuration screens for the selected domain, or • Right-click on a table row, or use the Gear icon to access the following functions: **New**, **Delete**, **Edit**, **Configure GAL**, **Configure Authentication**, **View Accounts**, **Add a Domain Alias, Configure Grants**
Servers	Displays the servers managed from this Administration Console. • Double-click on a table row to access the configuration screens for the selected server, or • Right-click on a table row, or use the Gear icon to access the following functions: **Edit**, **Flush Cache**, **Enable Proxy**, **Disable Proxy**

Table 12: Configure UI (Continued)

Option	Description
Global Settings	Provides access to tools you use to set various global parameters for your Zimbra Collaboration. Gear Icon: **Save**, **Download**, **Update License**, **Activate License, Manually Activate License**
Zimlets	Displays the Zimlets managed from this Administration Console. • Double-click on a table row to access the configuration screens for the selected Zimlet, or • Right-click on a table row, or use the Gear icon to access the following functions: **Deploy**, **Undeploy**, **Toggle Status**
Admin Extensions	Displays the Admin Extensions managed from this Administration Console. • Double-click on a table row to access the configuration screens for the selected Admin Extension, or • Right-click on a table row, or use the Gear icon to access the following functions: **Deploy**, **Undeploy**
Certificates	Displays the Certificates managed from this Administration Console. • Double-click on a table row to access the General Information screen for the selected certificate, or • Right-click on a table row, or use the Gear icon to access the following functions: **Install Certificate, View Certificate**
Rights	Displays the various Rights managed from this Administration Console. • Double-click on a table row to access the General Information screen for the selected Right, or • Right-click on a table row, or use the Gear icon to access the following function: **View**
Global ACL	Displays the Global Access Control Lists managed from this Administration Console. • Double-click on a table row to access the Edit ACE screen for the selected Global ACL, or • Right-click on a table row, or use the Gear icon to access the following functions: **Add**, **Delete**, **Edit**

Global Settings UI

Global Settings define the default global values for servers, accounts, COS, and domains. These default values and parameters apply if the values and parameters have not been explicitly defined in settings configures elsewhere.

The defaults for Global Settings are configured during installation. You can change the settings at any time from Global Settings at the Administration Console.

Table 13: Global Settings UI

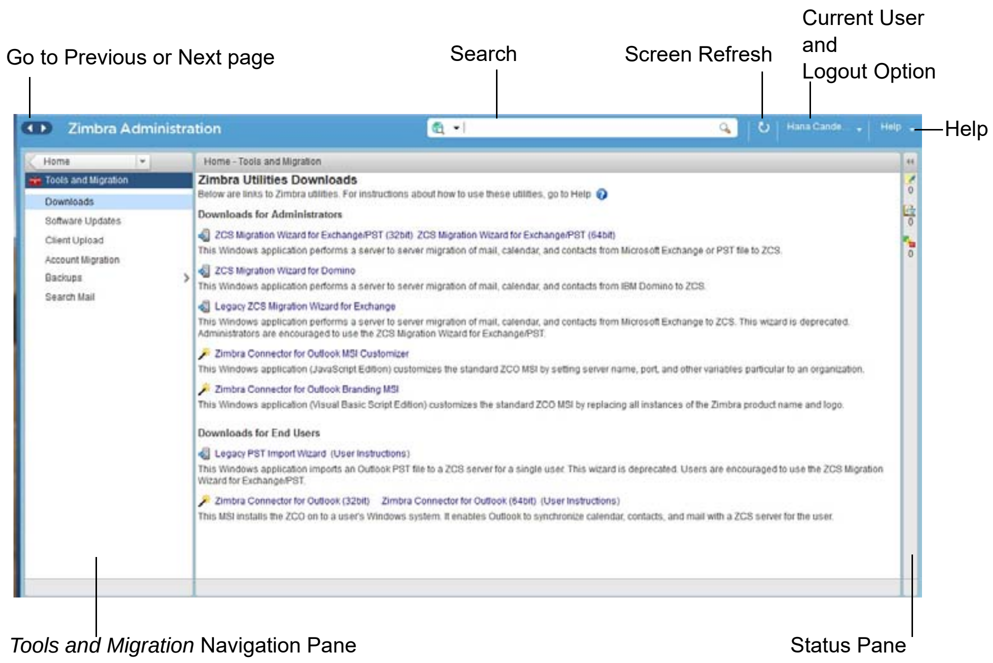
Option	Description
General Information	• Set global ceiling for the number of results from a GAL search. • Define default domain. • Configure the number of threads that can be used to get the content from the remote data sources. For more information, see General Information Configuration.
Attachments	• Enable rules to reject message that include attachments of a specific extension. • Disable attachments from being read. • Convert attachments to HTML for viewing. For more information, see Attachments Configuration.
MTA	• Enable authentication. • Set maximum message size. • enable or disable protocol and DNS check. • Add X-Originating-IP message headers. For more information, see MTA Configuration.
IMAP	Enable IMAP service. Changes to these settings do not take effect until the server is restarted.
POP	Enable POPS3 Service. Changes to these settings do not take effect until the server is restarted.
AS/AV	Set anti-spam and anti-virus rules. Change to the Spam-check settings do not take effect until the server is restarted.
Themes	• Customize the color scheme of existing themes • Add logo to a theme. Change to theme settings require the server theme cache to be flushed, by using the Flush Cache toolbar button at Server settings. For more information, see Chapter 20 Color and Logo Management, on page 283.

Table 13: Global Settings UI (Continued)

Option	Description
Advanced	• Configure the company name to be displayed in the prompt on the Authentication Required dialog used to log in to Briefcase folders shared with external guests • Add regular expression rules for Account Email Validation.
Retention Policy	Set up a retention and deletion time threshold for items in user folders. Retention and deletion policies can be configured as a global setting or your can configure COS-level policies instead of inheriting from the global settings.
Proxy	Set parameters for Web Proxy and Mail Proxy. Tools are also provided for setting Advanced Proxy parameters.
S/MIME	(Secure Multipurpose Internet Mail Extensions): Configure the LDAP settings on the S/MIME tab (if S/MIME feature has been enabled). Users will use LDAP servers to retrieve private keys.
ACL	(Access Control List): Go to ACE (Access Control Entry) configuration for delegated administration rights granted on selected target(s), to add, edit, or delete an ACE.
Backup/Restore	Set parameters for backup—for standard or auto-grouped mode. For more information see the Chapter 16 Backup and Restore, on page 233.
HSM	(hierarchical storage management): Configure aging of message before it is to be moved to secondary volume.
License	• Update and install your Zimbra license. • View current license information.

Tools and Migration UI

The **Tools and Migration** screen provides the **Tools and Migration** navigation pane, for access to system software management and system backup/restore. Administrators can access and download specific wizards and tools from this page.



Zimbra Utilities Downloads

Below are links to Zimbra utilities. For instructions about how to use these utilities, go to Help

Downloads for Administrators

ZCS Migration Wizard for Exchange/PST (32bit) ZCS Migration Wizard for Exchange/PST (64bit)

This Windows application performs a server to server migration of mail, calendar, and contacts from Microsoft Exchange or PST file to ZCS.

ZCS Migration Wizard for Domino

This Windows application performs a server to server migration of mail, calendar, and contacts from IBM Domino to ZCS.

Legacy ZCS Migration Wizard for Exchange

This Windows application performs a server to server migration of mail, calendar, and contacts from Microsoft Exchange to ZCS. This wizard is deprecated. Administrators are encouraged to use the ZCS Migration Wizard for Exchange/PST.

Zimbra Connector for Outlook MSI Customizer

This Windows application (JavaScript Edition) customizes the standard ZCO MSI by setting server name, port, and other variables particular to an organization.

Zimbra Connector for Outlook Branding MSI

This Windows application (Visual Basic Script Edition) customizes the standard ZCO MSI by replacing all instances of the Zimbra product name and logo.

Downloads for End Users

Legacy PST Import Wizard (User Instructions)

This Windows application imports an Outlook PST file to a ZCS server for a single user. This wizard is deprecated. Users are encouraged to use the ZCS Migration Wizard for Exchange/PST.

Zimbra Connector for Outlook (32bit) Zimbra Connector for Outlook (64bit) (User Instructions)

This MSI installs the ZCO on to a user's Windows system. It enables Outlook to synchronize calendar, contacts, and mail with a ZCS server for the user.

Table 14: Tools and Migration

Option	Description
Downloads	Access Zimbra utilities, which provides downloadable zip packages—for general administration use, and to synchronize an individual end user—containing migration wizards for various platforms, and Outlook connectors. Additional information is provided in Downloadable Wizards and Connectors on page 95.
Software Updates	Find out if your system needs a Zimbra Server update or not, and use this page to view polling and email contact information pertinent to software updates for your system. See also Checking for Zimbra Collaboration Software Updates on page 229.
Account Migration	View tabular details about account migrations, as detected by your system. This page lists total imports, and status of each. This page also provides the name(s) of the owners for each account migration listed. See also Migrating Accounts from a Zimbra Server on page 168.

Table 14: Tools and Migration (Continued)

Option	Description
Client Upload	Use this page to browse for the latest version of software to be uploaded to your system. After selecting the image, you can use the **Upload** button on this page to complete the software upload.
Backups	Access a summary view of current free and total space (MB) based on the most recent system backup. You can also select a specific administrator from this navigation pane to view backup history as associated with the selected administrator. The history lists labels, start and end times. and success or failure for each backup occurrence; each of these are associated with the identical, displayed directory path to the backup target. Additional information is provided in Chapter 16 Backup and Restore, on page 233.

Downloadable Wizards and Connectors

Use the **Tools and Migration** screen **Downloads** option to get the tools described in this section.

Table 15: Administrator Tools and Migration Options

ZCS Migration Wizard for Exchange/PST (32 bit)
ZCS Migration Wizard for Exchange/PST (63 bit)

Get zip files to perform a server-to-server migration of mail calendar, and contacts, from Microsoft Exchange or PST file to the Zimbra Collaboration Server.

ZCS Migration Wizard for Domino

Get zip files to perform a server-to-server migration of mail, calendar, and contacts from IBM Domino to the Zimbra Collaboration Server.

Legacy ZCS Migration Wizard for Exchange

NOTE: This package is deprecated! Choose, instead, the ZCS Migration Wizard for Exchange/PST.

Zimbra Connector for Outlook MSI Customizer

Present text file containing functions you can use to customize the standard ZCO MSI. Server name, port, other variables particular to an organization can be customized.

Zimbra Connector for Outlook Branding MSI

Get the Windows Visual Basic Script Edition (VBScript Script File) to customize the standard ZCO MSI. Customization replaces all instances of the Zimbra product name and logo.

Table 16: End User Tools and Migration Options

Legacy PST Import Wizard (User Instructions)

NOTE: This package is deprecated! Choose, instead, the ZCS Migration Wizard for Exchange/PST.

Table 16: End User Tools and Migration Options (Continued)

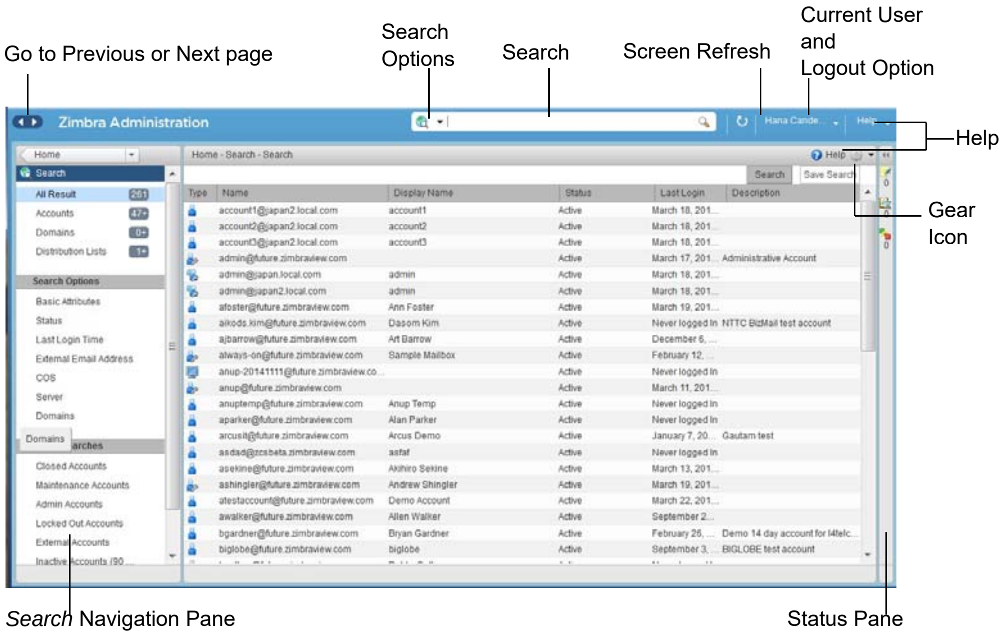
Zimbra Connector for Outlook (32 bits)
Zimbra Connector for Outlook (64 bit) (User Instructions)

Get the Windows Installer Package zip file to install in a user's Windows system. This application enables the user's Outlook to synchronize calendar, contacts, and mail with the ZCS server.

Search UI

The **Search** screen displays the **Search** results from queries made in the Search field in the Administration Console header.

- When you open this page without entering a search query, *All Results* is the default search, which displays accounts, domains, and distribution lists in the Content pane.
- The auto-completion function allows you to enter a partial name, then select a searchable name from the displayed list of matched strings.
- You can also use the Zimbra mailbox ID number to search for an account. However, to return a search from a mailbox ID, the complete ID string must be entered in the search.



Type	Name	Display Name	Status	Last Login	Description
	account1@japan2.local.com	account1	Active	March 18, 201...	
	account2@japan2.local.com	account2	Active	March 18, 201...	
	account3@japan2.local.com	account3	Active	March 18, 201...	
	admin@future.zimbraview.com		Active	March 17, 201...	Administrative Account
	admin@japan.local.com	admin	Active	March 18, 201...	
	admin@japan2.local.com	admin	Active	March 18, 201...	
	afoster@future.zimbraview.com	Ann Foster	Active	March 19, 201...	
	aikods.kim@future.zimbraview.com	Dasom Kim	Active	Never logged In	NTTC BizMail test account
	ajbarrow@future.zimbraview.com	Art Barrow	Active	December 6, ...	
	always-on@future.zimbraview.com	Sample Mailbox	Active	February 12, ...	
	anup-20141111@future.zimbraview.co...		Active	Never logged In	
	anup@future.zimbraview.com		Active	March 11, 201...	
	anuptemp@future.zimbraview.com	Anup Temp	Active	Never logged In	
	aparker@future.zimbraview.com	Alan Parker	Active	Never logged In	
	arcusit@future.zimbraview.com	Arcus Demo	Active	January 7, 20...	Gautam test
	asdad@zcsbeta.zimbraview.com	asfaf	Active	Never logged In	
	asekine@future.zimbraview.com	Akihiro Sekine	Active	March 13, 201...	
	ashingler@future.zimbraview.com	Andrew Shingler	Active	March 19, 201...	
	atestaccount@future.zimbraview.com	Demo Account	Active	March 22, 201...	
	awalker@future.zimbraview.com	Allen Walker	Active	September 2...	
	bgardner@future.zimbraview.com	Bryan Gardner	Active	February 26, ...	Demo 14 day account for I4telc...
	biglobe@future.zimbraview.com	biglobe	Active	September 3, ...	BIGLOBE test account

Table 17: Search UI

Option	Description
All Result	View the count and table of all search results.
Accounts	View the count and table resulting from query for Accounts.
Domains	View the count and table resulting from query for Domains.

Table 17: Search UI

Option	Description
Distribution Lists	View the count and table resulting from query for Distribution Lists.
Basic Attributes	Search for a user by first name, last name, display name, or account ID number. You can search for administrators or delegated administrators only.
Status	Search for account by status: Active, closed, Locked, Logout, Pending, or Maintenance.
Last Login Time	Search for accounts by the last login time. You can specify a data range to search.
External Email Address	Search for an account with an external email address.
COS	Search for objects by COS or for objects that are not assigned a COS.
Server	Search for accounts on selected servers.
Domains	Search for accounts on selected domains.
Saved Searches	By default, this section includes predefined common search queries. You can also create and save your own queries. After you enter the query syntax, click **Save Search** and provide a name for the search. The search is then added to this Saved Searches section.

Setting Up a Simple Search

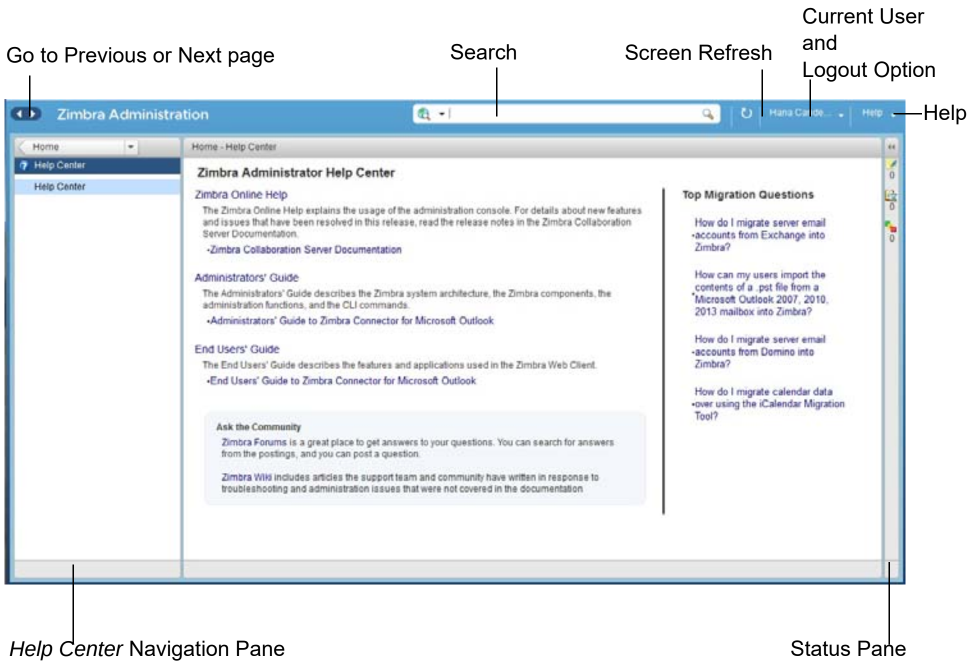
1. At the **Search** field, use search options from the drop-down selector to define the type of search, as either *accounts*, *distribution lists*, *aliases*, *resources*, *domains*, *class of service*, or *all objects*.

   For accounts, you can search by display name, first/last name, first part of email address, alias, delivery address, or mailbox ID.
2. Type the search string into the **Search** field.

   Partial entries are allowed as search criteria, but a search based on mailbox ID must include the complete ID string.
3. Click **Search**.
   The Search page is now presented, containing results of search based on your criteria.
4. View total number of results at the Navigation pane, in **Search**>**All Results**.

Help Center UI

The **Help Center** is a reference of resources available from the online help and documentation, which you can access with the links provided in the **Help Center** screen. Use this page, also, to access community forums and to view expert responses to the top migration questions.



Zimbra Administrator Help Center

Zimbra Online Help

The Zimbra Online Help explains the usage of the administration console. For details about new features and issues that have been resolved in this release, read the release notes in the Zimbra Collaboration Server Documentation.

- Zimbra Collaboration Server Documentation

Administrators' Guide

The Administrators' Guide describes the Zimbra system architecture, the Zimbra components, the administration functions, and the CLI commands.

- Administrators' Guide to Zimbra Connector for Microsoft Outlook

End Users' Guide

The End Users' Guide describes the features and applications used in the Zimbra Web Client.

- End Users' Guide to Zimbra Connector for Microsoft Outlook

Ask the Community

Zimbra Forums is a great place to get answers to your questions. You can search for answers from the postings, and you can post a question.

Zimbra Wiki includes articles the support team and community have written in response to troubleshooting and administration issues that were not covered in the documentation.

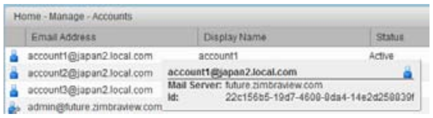
Top Migration Questions

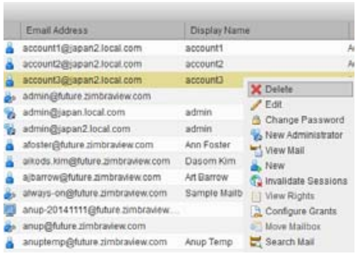
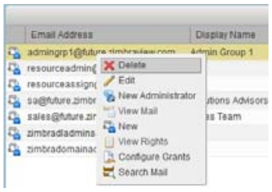
- How do I migrate server email accounts from Exchange into Zimbra?
- How can my users import the contents of a .pst file from a Microsoft Outlook 2007, 2010, 2013 mailbox into Zimbra?
- How do I migrate server email accounts from Domino into Zimbra?
- How do I migrate calendar data over using the iCalendar Migration Tool?

Tools in Collaborator Tables

Selection of a category from the Navigation pane typically results in tabular display of all managed objects for the selected category. All tables display labeled columns in which to view information such as email addresses, display names, status, last logins, and descriptions (if configured).

Each row in a table enables actions you can perform if you require additional information and/or access to configuration for the selected table entry.

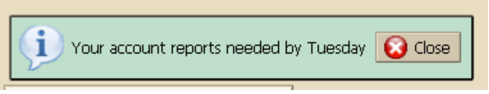
Action at Table Row	Result	
Hold cursor	Display ID details for the selection, similar to the example at right (invoked from an Accounts row).	 Home - Manage - Accounts Email Address | Display Name | Status account1@japan2.local.com | account1 | Active account2@japan2.local.com account3@japan2.local.com admin@future.zimbraview.com account1@japan2.local.com Mail Server: future.zimbraview.com Id: 22c156b5-19d7-4609-9da4-14e2d258039f

Action at Table Row	Result
Right-click	Access the popup menu for a selected table row. The popup menus from a common table may differ from row to row, as demonstrated in the following examples. Accounts and Aliases:  Email Address Display Name account1@japan2.local.com account1 account2@japan2.local.com account2 account3@japan2.local.com account3 admin@future.zimbraview.com admin@japan.local.com admin admin@japan2.local.com admin afoster@future.zimbraview.com Ann Foster aikods.kim@future.zimbraview.com Dasom Kim ajbarrow@future.zimbraview.com Art Barrow always-on@future.zimbraview.com Sample Mailb anup-20141111@future.zimbraview... anup@future.zimbraview.com anuptemp@future.zimbraview.com Anup Temp Delete Edit Change Password New Administrator View Mail New Invalidate Sessions View Rights Configure Grants Move Mailbox Search Mail Dist Lists and Resources:  Email Address Display Name admingrp1@future.zimbraview.com Admin Group 1 resourceadmin(resourceassign(sa@future.zimbr ...utions Advisors sales@future.zir ...s Team zimbradladmins zimbradomainac Delete Edit New Administrator View Mail New View Rights Configure Grants Search Mail
Double-click	Leave the current page, and go to the configuration tools you can use for the selection.

Message of the Day

Global administrators can create message(s) of the day (MOTD) that administrators view when logging into the Administration Console.

The configured message displays at the top left of the Administration Console for each administrative login (similar to the example at right).



Your account reports needed by Tuesday

The message can be closed, replaced, or removed.

Closing a Message of the Day

To remove a message from view, click the **Close** button located alongside the message content.

Creating Message(s) of the Day

Use the `zimbraAdminConsoleLoginMessage` attribute, with guidelines in this section, to create a single message of the day, or to create multiple messages to be displayed.

Note: *When creating a message with your command entry, always place double quote marks at the beginning and end of the message to be d*

CLI: Creating a global message or domain-specific message.

```
zmprov md domainexample.com zimbraAdminConsoleLoginMessage
“message to display”
```

CLI: Creating a multiple-message display:

```
zmprov md domainexample.com +zimbraAdminConsoleLoginMessage
“second message to display”
```

Removing Message(s) of the Day

Use the `zimbraAdminConsoleLoginMessage` attribute, with guidelines in this section, to delete a single message of the day, or to delete multiple messages.

Note: *When removing a message with your command entry, use the following guidelines for individual and multiple deletions:*
- Place a minus sign (-) before the attribute, and double quote marks at the beginning and end of an individual message to be deleted.
- Use single quote marks with the attribute to remove all messages.

CLI: Removing a specific message:

```
zmprov md domainexample.com -zimbraAdminConsoleLoginMessage
“message to display”
```

CLI: Removing all messages:

```
zmprov md domainexample.com zimbraAdminConsoleLoginMessage ‘
```

Functional Reference

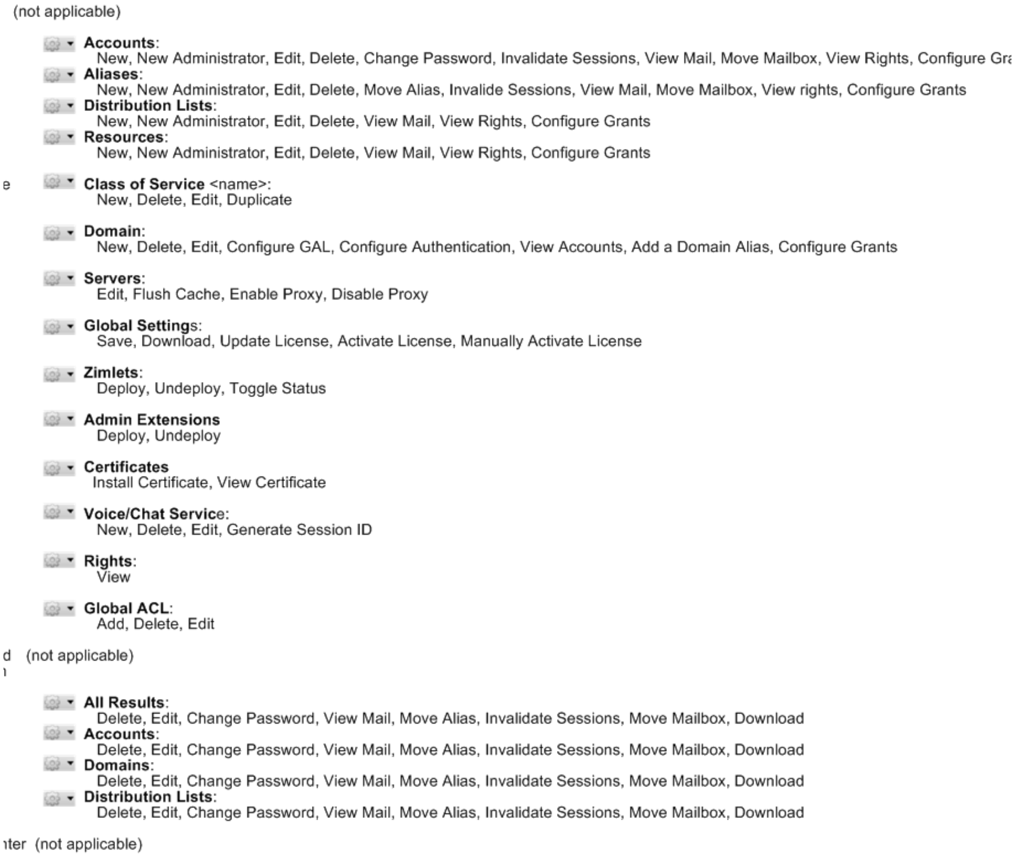
This section provides birds-eye views of the functions you can use when navigating the Administration Console, in the following topics:

- GUI Roadmap, next.
- Popup Menu Options, on page 101.
- Containers, on page 104

GUI Roadmap

A high-level view of the Administration Console UI is provided in the following illustration.

High-level View of Administration Console UI



(not applicable)

Accounts:
New, New Administrator, Edit, Delete, Change Password, Invalidate Sessions, View Mail, Move Mailbox, View Rights, Configure Gra
Aliases:
New, New Administrator, Edit, Delete, Move Alias, Invalide Sessions, View Mail, Move Mailbox, View rights, Configure Grants
Distribution Lists:
New, New Administrator, Edit, Delete, View Mail, View Rights, Configure Grants
Resources:
New, New Administrator, Edit, Delete, View Mail, View Rights, Configure Grants

e **Class of Service** <name>:
New, Delete, Edit, Duplicate

Domain:
New, Delete, Edit, Configure GAL, Configure Authentication, View Accounts, Add a Domain Alias, Configure Grants

Servers:
Edit, Flush Cache, Enable Proxy, Disable Proxy

Global Settings:
Save, Download, Update License, Activate License, Manually Activate License

Zimlets:
Deploy, Undeploy, Toggle Status

Admin Extensions
Deploy, Undeploy

Certificates
Install Certificate, View Certificate

Voice/Chat Service:
New, Delete, Edit, Generate Session ID

Rights:
View

Global ACL:
Add, Delete, Edit

d (not applicable)
ı

All Results:
Delete, Edit, Change Password, View Mail, Move Alias, Invalidate Sessions, Move Mailbox, Download
Accounts:
Delete, Edit, Change Password, View Mail, Move Alias, Invalidate Sessions, Move Mailbox, Download
Domains:
Delete, Edit, Change Password, View Mail, Move Alias, Invalidate Sessions, Move Mailbox, Download
Distribution Lists:
Delete, Edit, Change Password, View Mail, Move Alias, Invalidate Sessions, Move Mailbox, Download

ıter (not applicable)

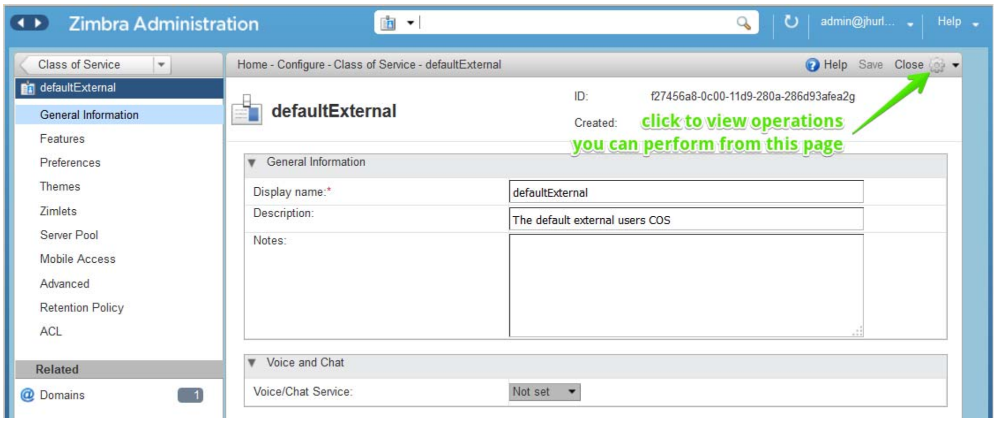
Popup Menu Options

You can select options to perform on a selected entity from the navigation pane from the Gear icon or a topical popup menu, as described in the following topics:

- Using the Gear icon, next.
- Using the Topical Popup Menus, on page 104.

Using the Gear icon

The **Gear** icon is always located at the upper right edge of the page view if pertinent to selectable items in the displayed page.



ID: f27456a8-0c00-11d9-280a-286d93afea2g

Created:

Display name:* defaultExternal

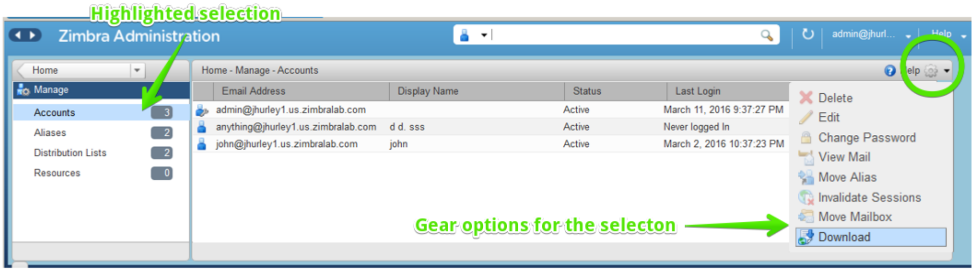
Description: The default external users COS

Notes:

Voice/Chat Service: Not set

click to view operations you can perform from this page

To view the available options, highlight a topic at the navigation pane or in the page view: In the popup, the options that are not applicable to your selection are desensitized: other displayed options can be used with your selection. The following example demonstrates Gear options based on selection of a navigation bar topic, versus a table row entry from within the same page view.

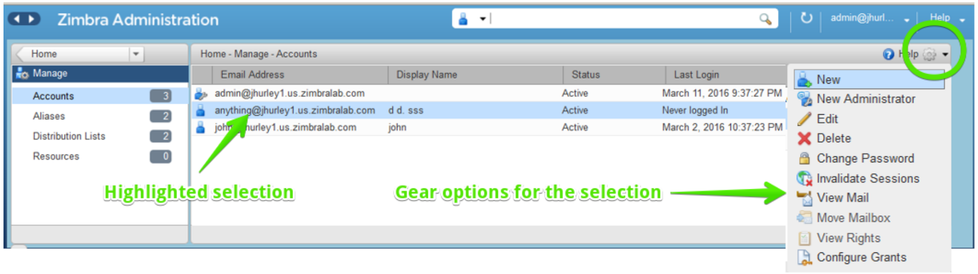


Highlighted selection

Email Address	Display Name	Status	Last Login
admin@jhurley1.us.zimbralab.com		Active	March 11, 2016 9:37:27 PM
anything@jhurley1.us.zimbralab.com	d d. sss	Active	Never logged In
john@jhurley1.us.zimbralab.com	john	Active	March 2, 2016 10:37:23 PM

Gear options for the selecton

g



Email Address	Display Name	Status	Last Login
admin@jhurley1.us.zimbralab.com		Active	March 11, 2016 9:37:27 PM
anything@jhurley1.us.zimbralab.com	d d. sss	Active	Never logged In
john@jhurley1.us.zimbralab.com	john	Active	March 2, 2016 10:37:23 PM

Highlighted selection

Gear options for the selection

The following table provides a high-level view of the operations derived from the Gear icon, which vary for particular functions.

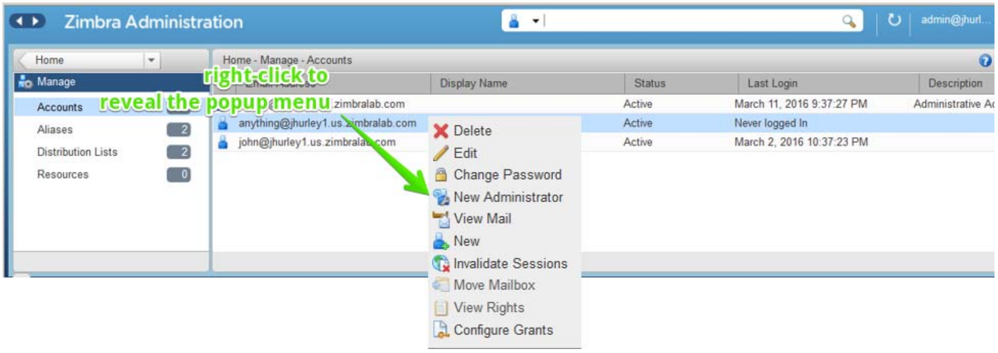
Navigation Pane Topic	**Selections**	⚙▾ **Options**
Home		
Monitor	Server Statistics	View
	Mail Queues	Flush
Manage	Accounts	New, New Administrator, Edit, Delete, Change Password, Invalidate Sessions, View Mail, Move Mailbox, View Rights, Configure Grants
	Aliases	New, New Administrator, Edit, Delete, Move Alias, Invalidate Sessions, View Mail, Move Mailbox, View Rights, Configure Grants
	Distribution Lists	New, New Administrator, Edit, Delete, View Mail, View Rights, Configure Grants
	Resources	New, New Administrator, Edit, Delete, View Mail, View Rights, Configure Rights
Configure	Class of Service	New, Delete, Edit, Duplicate
	Domains	New, Delete, Edit, Configure GAL, Configure Authentication, View Accounts, Add a Domain Alias, Configure Grants
	Servers	Edit, Flush Cache, Enable Proxy, Disable Proxy
	Global Settings	Save, Download, Update License, Activate License, Manually Activate License
	Zimlets	Deploy, Undeploy, Toggle Status
	Admin Extensions	Deploy, Undeploy
	Certificates	Install Certificate, View Certificate
	Voice/Chat Service	New, Delete, Edit, Generate Session ID
	Rights	View
	Global ACL	Add, Delete, Edit
Tools and Migration	Software Updates	Save, Check Now
	Account Migration	Delete Task, Refresh, Migration Wizard
	Backups	View, Backup, Restore, Configure, Refresh
Search	All Result	Delete, Edit, Change Password, View Mail, Move Alias, Invalidate Sessions, Move Mailbox, Download
	Accounts	
	Domains	
	Distribution Lists	

Using the Topical Popup Menus

You can elect to access options to perform on a selection by using popup menus:

Note: *Popup menus are not provided in the Navigation Pane.*

The following example demonstrates the popup options provided from a specific selection in the page view.

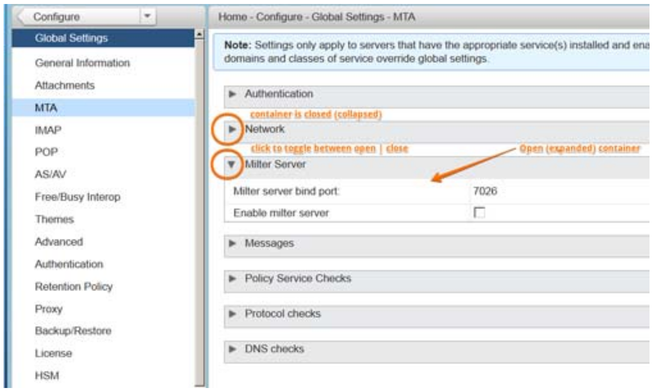


Email Address	Display Name	Status	Last Login	Description
zimbralab.com		Active	March 11, 2016 9:37:27 PM	Administrative A
anything@jhurley1.us.zimbralab.com		Active	Never logged In	
john@jhurley1.us.zimbralab.com		Active	March 2, 2016 10:37:23 PM	

Containers

A wide range of Configuration options are logically grouped into containers in the Administration Console. Applicable configuration options inside these containers are listed in the High-level View of Administration Console UI, on page 101.

By default, all containers in a page are opened (expanded). You can opt to close (collapse) containers —which can free up additional space in a page view—by clicking on the collapse/ expand button located at the upper left edge of the container.



Note: Settings only apply to servers that have the appropriate service(s) installed and ena domains and classes of service override global settings.

Milter server bind port: 7026

Enable milter server □

9 Managing Configuration

The ZCS components are configured during the initial installation of the software. After the installation, you can manage the following components from either the Administration Console or using the CLI utility.

Topics in this chapter:

Help is available from the Administration Console about how to perform tasks from the Administration Console. If the task is only available from the CLI, see Zimbra CLI Commands for a description of how to use the CLI utility.

Global Configuration

Global Settings apply to all accounts in the Zimbra servers. They are initially set during installation. You can modify the settings from the Administration Console.

Configurations set in Global Settings define inherited default values for the following objects: server, account, COS, and domain. If these attributes are set in the server, the server settings override the global settings.

Admin Console: To configure global settings:

Configure > **Global Settings** page.

Configured global settings are:

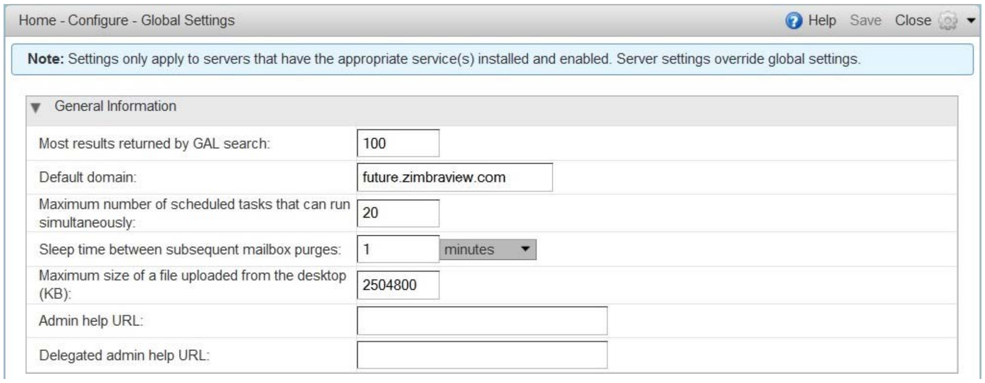
- Default domain
- Maximum number of results returned for GAL searches.
  Default =100.
- User views of email attachments and attachment types not permitted.
- Configuration for authentication process, Relay MTA for external delivery, DNS lookup, and protocol checks.
- Spam check controls and anti-virus options to check messages received.
- Free/busy scheduling across a mix of Zimbra Collaboration servers and third party email servers.
- Customization of themes: modify colors and add your logo.
- Configuration of company name display for external guest log on, when viewing a shared Briefcase folder.
-
-

General Information Configuration

Admin Console: Use the **General Information** screen to view and set global parameters for servers that have been installed and enabled.

Home>**Configure**>**Global Settings**

Note: *Settings defined at the server(s) override those configured in the General Information screen.*



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Server settings override global settings.

▼ General Information

Most results returned by GAL search:	100
Default domain:	future.zimbraview.com
Maximum number of scheduled tasks that can run simultaneously:	20
Sleep time between subsequent mailbox purges:	1 minutes
Maximum size of a file uploaded from the desktop (KB):	2504800
Admin help URL:	
Delegated admin help URL:	

1. Modify parameters, as appropriate for your requirements.
2. From the **Gear** icon, select **Save** to use your settings.

General Information Parameters

Option	Description
Most results returned by GAL search	The maximum number of GAL results returned from a user search. This value can be set by domain: the domain setting overrides the global setting. Default = 100.
Default domain	Domain that users' logins are authenticated against.

General Information Parameters (Continued)

Option	Description
Number of scheduled tasks that can run simultaneously	Number of threads used to fetch content from remote data sources. • If set too low, users do not get their mail from external sources pulled down often enough. • If set too high, the server may be consumed with downloading this mail and not servicing "main" user requests. Default = 20
Sleep time between subsequent mailbox purges	The duration of time that the server should "rest" between purging mailboxes. If the message purge schedule is set to 0, messages are not purged, even if the mail, trash and spam message life time is set. Default = message purge is scheduled to run every 1 minute.
Maximum size of an uploaded file for Briefcase files (kb)	The maximum size of a file that can be uploaded into Briefcase. **Note**: the maximum message size for an email message and attachments that can be sent is configured in the Global Settings MTA page, Messages section.
Admin help URL Delegated Admin Help URL	To use the Zimbra Collaboration Help, you can designate the URL that is linked from the Administration Console Help

Attachments Configuration

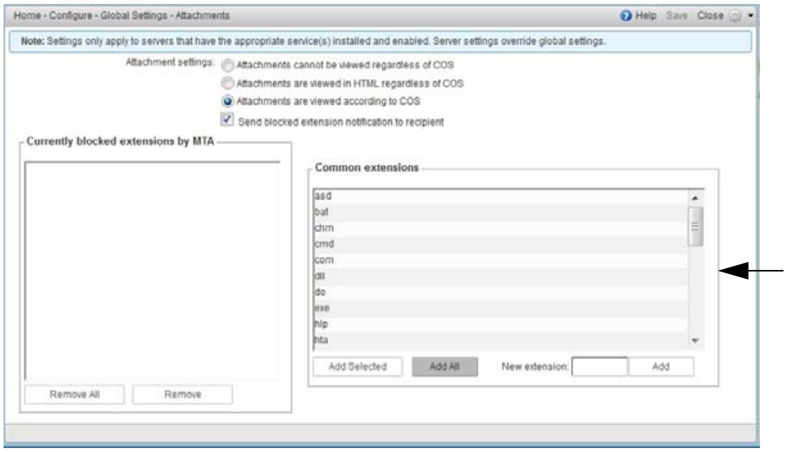
Topics in this section:

- Setting Up Email Attachment Rules.
- Blocking Email Attachments by File Type.

Setting Up Email Attachment Rules

Global email attachment settings allow you to specify global rules for handling attachments to an email message. You can also set rules by COS and for individual accounts. When attachment settings are configured in Global Settings, the global rule takes precedence over COS and Account settings.

Admin Console: **Home**>**Configure**>**Global Settings**>**Advanced**



Home - Configure - Global Settings - Attachments

Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Server settings override global settings.

Attachment settings:
○ Attachments cannot be viewed regardless of COS
○ Attachments are viewed in HTML regardless of COS
● Attachments are viewed according to COS
☑ Send blocked extension notification to recipient

See Blocking Email Attachments by File Type on page 108 for information about this section of the screen.

Global Settings Advanced

Option	Description
Attachments cannot be viewed regardless of COS	Users cannot view any attachments. This global setting can be set to prevent a virus outbreak from attachments, as no mail attachments can be opened.
Attachments are viewed according to COS	This global setting states the COS sets the rules for how email attachments are viewed
Send blocked extension notification to recipient.	

Blocking Email Attachments by File Type

You can also reject messages with certain types of files attached. You select which file types are unauthorized from the **Common extensions** list. You can also add other extension types to the list. Messages with those type of files attached are rejected. By default the recipient and the sender are notified that the message was blocked.

If you do not want to send a notification to the recipient when messages are blocked, you can disable this option:

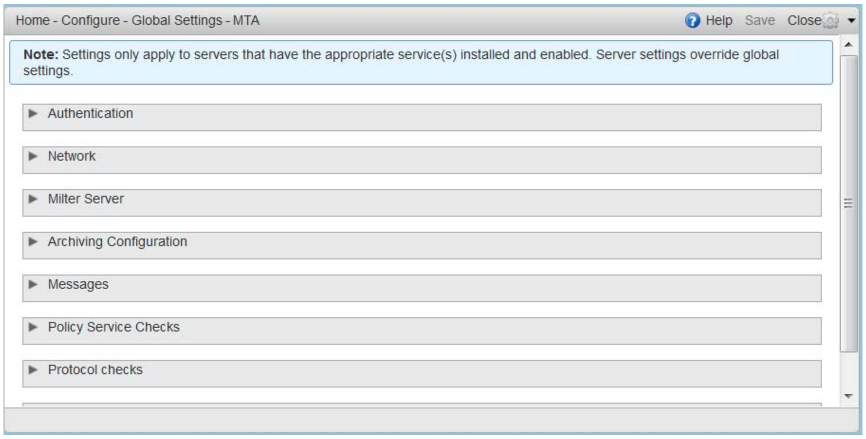
Admin Console: **Global Settings**>**Attachments** page.

MTA Configuration

Use options from the MTA page to enable or disable authentication and configure a relay hostname, the maximum message size, enable DNS lookup, protocol checks, and DNS checks.

Admin Console: **Home**>**Configure**>**Global Settings**>**MTA**

)



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Server settings override global settings.

MTA Page Options

Option	Description
Authentication	• **Authentication** should be enabled, to support mobile SMTP authentication users so that their email client can talk to the Zimbra MTA. • **TLS authentication only** forces all SMTP auth to use Transaction Level Security to avoid passing passwords in the clear.

MTA Page Options (Continued)

Option	Description
Network	• **Web mail MTA Host name and Web mail MTA Port**. The MTA that the web server connects to for sending mail. The default port number is 25. • The **Relay MTA for external delivery** is the relay host name. This is the Zimbra MTA to which Postfix relays non-local email. • If your MX records point to a spam-relay or any other external non-Zimbra server, enter the name of that server in the **Inbound SMTP host name** field. This check compares the domain MX setting against the zimbraInboundSmtpHostname setting, if set. If this attribute is not set, the domain MX setting is checked against zimbraSmtpHostname. • MTA Trusted Networks. Configure trusted networks that are allowed to relay mail. Specify a list of network addresses, separated by commas and/or a space. • If **Enable DNS lookups** is checked, the Zimbra MTA makes an explicit DNS query for the MX record of the recipient domain. If this option is disabled, set a relay host in the Relay MTA for external delivery. • If **Allow domain administrators to check MX records from Administration Console** is checked, domain administrators can check the MX records for their domain.
Milter Server	• If **Enable Milter Server** is checked, the milter enforces the rules that are set up for who can send email to a distribution list.
Archiving Configuration	• If you installed the Archiving feature, you can enable it here.
Messages	• Set the **Maximum messages size** for a message and it's attachments that can be sent. Note: To set the maximum size of an uploaded file to Briefcase, go to the General Information page. • You can enable the **X-Originating-IP header to messages** checkbox. The X-Originating-IP header information specifies the original sending IP of the email message the server is forwarding.
Policy Service Checks	• Customize **zimbraMtaRestriction (**restrictions to reject some suspect SMTP clients).
Protocol checks	• To reject unsolicited commercial email (UCE), for spam control.

MTA Page Options (Continued)

Option	Description
DNS checks	• To reject mail if the client's IP address is unknown, the hostname in the greeting is unknown, or if the sender's domain is unknown. • Add other email recipient restrictions to the **List of RBLs** field. ***Note:*** *RBL (Real time black-hole lists) can be turned on or off from the Zimbra CLI.*

Global IMAP and POP Configuration

Use the IMAP and POP pages to enable global access.

Admin Console: **Home>Configure>Global Settings>IMAP** or **POP**

Note: *When you make changes to the IMAP or POP settings, you must restart Zimbra Collaboration before the changes take effect.*

IMAP and POP3 polling intervals can be set from the Administration Console COS Advanced page.

Default = No polling interval.

Note: *If IMAP/POP proxy is set up, ensure that the port numbers are configured correctly.*

With POP3, users can retrieve their mail stored on the Zimbra server and download new mail to their computer. The user's POP configuration in their Preference>Mail page determines how their messages are downloaded and saved.

Working With Domains

One domain is identified during the installation process. You can add domains after installation. From the Administration Console you can manage the following domain features.

- Global Address List
- Authentication
- Virtual hosts for the domain to establish a default domain for a user login
- Public service host name that is used for REST URLs, commonly used in sharing.
- Maximum number of accounts that can be created on the domain
- Free/Busy Interop settings for use with Microsoft Exchange.
- Domain SSL certificates

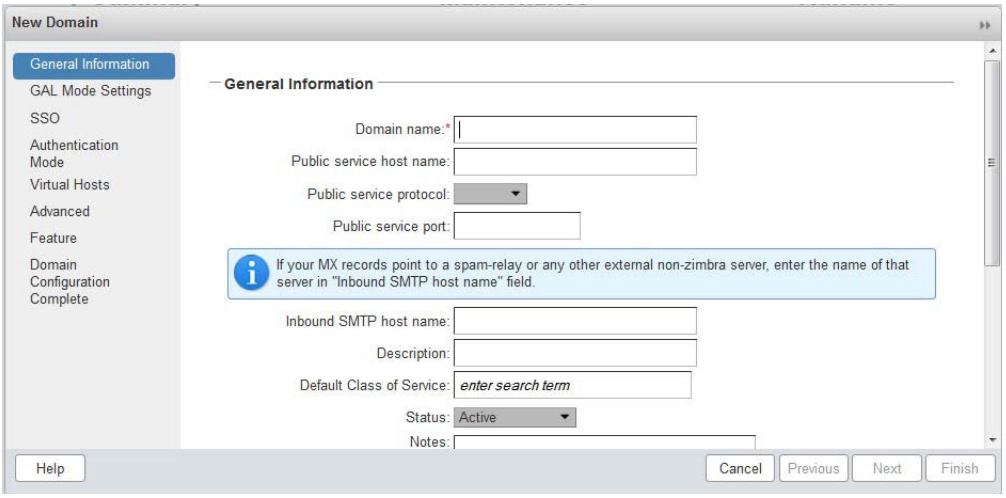
A domain can be renamed and all account, distribution list, alias and resource addresses are changed to the new domain name. The CLI utility is used to changing the domain name. See Renaming a Domain.

Note: *Domain settings override global settings.*

Domain General Information Configuration

Use the **New Domain** Wizard to set options described in this section.

Admin Console: **Home**>2 **Set up Domain**> **1 Create Domain**



General Information

Domain name:*

Public service host name:

Public service protocol:

Public service port:

If your MX records point to a spam-relay or any other external non-zimbra server, enter the name of that server in "Inbound SMTP host name" field.

Inbound SMTP host name:

Description:

Default Class of Service: *enter search term*

Status: Active

Notes:

New Domain—General Information

Option	Description
Domain name *	
Public service host name	Enter the host name of the REST URL. This is commonly used for sharing. See Setting up a Public Service Host Name.
Public service protocol	Select HTTP or HTTPS from the drop-down field.
Public service port	
Inbound SMTP host name	If your MX records point to a spam-relay or any other external non-Zimbra server, enter the name of the server here.
Description	
Default Class of Service	This COS (for the domain) is automatically assigned to accounts created on the domain if another COS is not set.

New Domain—General Information (Continued)

Option	Description
Status	The domain status is active in the normal state. Users can log in and mail is delivered. Changing the status can affect the status for accounts on the domain also. The domain status is displayed on the Domain>General page. Domain status can be set as follows: • **Active**. Active is the normal status for domains. Accounts can be created and mail can be delivered. Note: If an account has a different status setting than the domain setting, the account status overrides the domain status. • **Closed**. When a domain status is marked as closed, Login for accounts on the domain is disabled and messages are bounced. The closed status overrides an individual account's status setting. • **Locked**. When a domain status is marked as locked, users cannot log in to check their email, but email is still delivered to the accounts. If an account's status setting is marked as maintenance or closed, the account's status overrides the domain status setting. • **Maintenance**. When the domain status is marked as maintenance, users cannot log in and their email is queued at the MTA. If an account' status setting is marked as closed, the account's status overrides the domain status setting. • **Suspended**. When the domain status is marked as suspended, users cannot log in, their email is queued at the MTA, and accounts and distribution lists cannot be created, deleted, or modified. If an account's status setting is marked as closed, the account's status overrides the domain status setting.
Notes	

Setting up a Public Service Host Name

You can configure each domain with the public service host name to be used for REST URLs. This is the URL that is used when sharing email folders and Briefcase folders, as well as sharing task lists, address books, and calendars.

When users share a Zimbra Collaboration folder, the default is to create the URL with the Zimbra server hostname and the Zimbra service host name. This is displayed as **http://server.domain.com/service/home/username/sharedfolder**. The attributes are generated as follows:

- Hostname is server.zimbraServiceHostname
- Protocol is determined from server.zimbraMailMode
- Port is computed from the protocol

When you configure a public service host name, this name is used instead of the server/service name, as **http://publicservicename.domain.com/home/username/sharedfolder**. The attributes to be used are:

- **zimbraPublicServiceHostname**
- **zimbraPublicServiceProtocol**
- **zimbraPublicServicePort**

You can use another FQDN as long as the name has a proper DNS entry to point at 'server' both internally and externally.

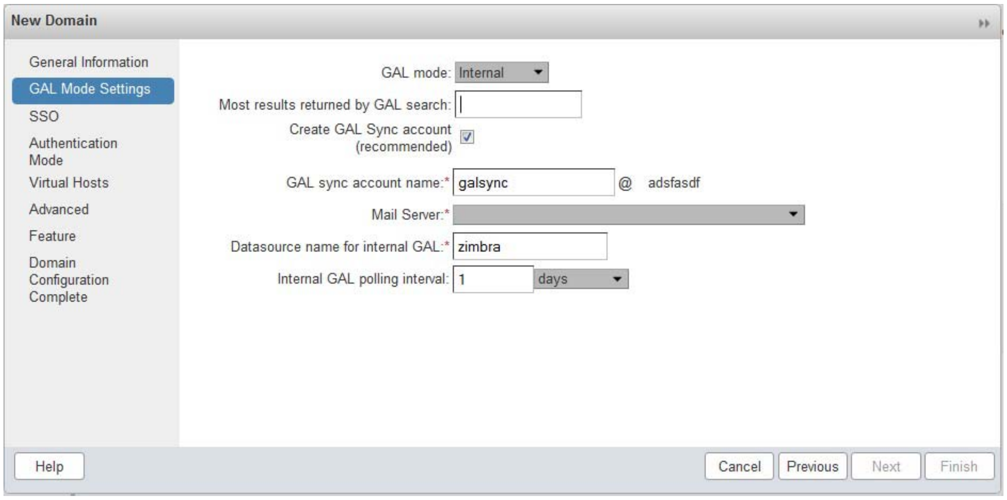
Global Address List (GAL) Mode Configuration

The Global Address List (GAL) is your company-wide listing of users that is available to all users of the email system. GAL is a commonly used feature in mail systems that enables users to look up another user's information by first or last name, without having to know the complete email address.

GAL is configured on a per-domain basis. The GAL mode setting for each domain determines where the GAL lookup is performed.

Use the **GAL Mode Settings** tool with your domain configuration to define the Global Address List.

Admin Console: **Home>2 Set up Domain>1. Create Domain, GAL Mode Settings**



GAL mode: Internal

Most results returned by GAL search:

Create GAL Sync account (recommended) ☑

GAL sync account name:* galsync @ adsfasdf

Mail Server:*

Datasource name for internal GAL:* zimbra

Internal GAL polling interval: 1 days

New Domain—GAL Mode Settings

Option	Description
GAL Mode	• **Internal**. The Zimbra LDAP server is used for directory lookups. • **External**. External directory servers are used for GAL lookups. You can configure multiple external LDAP hosts for GAL. All other directory services use the Zimbra LDAP service (configuration, mail routing, etc.). When you configure an external GAL, you can configure different search settings and sync settings.You might want to configure different search settings if your LDAP environment is set up to optimize LDAP searching by setting up an LDAP cache server, but users also will need to be able to sync to the GAL. • **Both**. Internal and external directory servers are used for GAL lookups.
Most results returned by GAL search	Maximum number of search results that can be returned in one GAL search. If this value is undefined here, the system will use the value defined in Global Settings. Default = 100 results.
GAL sync account name*	Read-only field that displays the galsync name and associated domain.
Datasource name for internal GAL	Read-only field that displays the name of the internal GAL.
Internal GAL polling interval	Define how often—as days, hours, minutes, or seconds— the GAL sync account is to sync with the LDAP server. With the first sync to the LDAP server, all GAL contacts from the LDAP are added to the galsync account's address book. On subsequent syncs, the account is updated with information about new contacts, modified contacts, and deleted contacts.

Using GAL sync accounts for faster access to GAL

A GAL sync account is created for the domain when an internal or external GAL is created, and if you have more than one mailbox server, you can create a GAL sync account for each mailbox server in the domain. Using the GAL sync account gives users faster access to auto complete names from the GAL.

When a GAL sync account is created on a server, GAL requests are directed to the server's GAL sync account instead of the domain's GAL sync account. The GalSyncResponse includes a token which encodes the GAL sync account ID and current change number. The client stores this and then uses it in the next GalSyncRequest. Users perform GAL sync with the GAL sync account they initially sync with. If a GALsync account is not available for some reason, the traditional LDAP-based search is run.

Note: *The GAL sync accounts are system accounts and do not use a Zimbra license.*

When you configure the GAL sync account, you define the GAL datasource and the contact data is syncd from the datasource to the GAL sync accounts' address books. If the mode **Both** is selected, an address book is created in the account for each LDAP data source.

The GAL polling interval for the GAL sync determines how often the GALsync account syncs with the LDAP server. The sync intervals can be in x days, hours, minutes, or seconds. The polling interval is set for each data source.

When the GAL sync account syncs to the LDAP directory, all GAL contacts from the LDAP are added to the address book for that GAL. During the sync, the address book is updated with new contact, modified contact and deleted contact information. You should not modify the address book directly. When the LDAP syncs the GAL to the address book, changes you made directly to the address book are deleted.

You create GALsync accounts from the Administration Console. The CLI associated with this feature is **zmgsautil.**

Creating Additional GALsync Accounts

When ZCS is configured with more than one server, you can add an additional GAL sync account for each server.

Admin Console: In the Administration Console, select **Configure>Domains**.

1. Select the domain to add another GAL sync account.
2. In the gear box, select **Configure GAL**.
3. Click **Add a GAL account**.
4. In the GAL sync account name field, enter the name for this account. Do not use the default name.
5. Select the mailbox server that this account will apply to.
6. Enter the **GAL datasource name**, If the GAL mode is BOTH, enter the data source name for both the internal GAL and the external GAL.
7. Set the **GAL polling interval** to how often the GAL sync account should sync with the LDAP server to update.
8. Click **Finish**.

Changing GAL sync account name.

The default name for the GAL sync account is **galsync**. When you configure the GAL mode, you can specify another name. After the GAL sync account is created, you cannot rename the account because syncing the data fails.

To change the account name delete the existing GAL sync account and configure a new GAL for the domain.

Admin Console: In the Administration Console, select **Configure>Domains**.

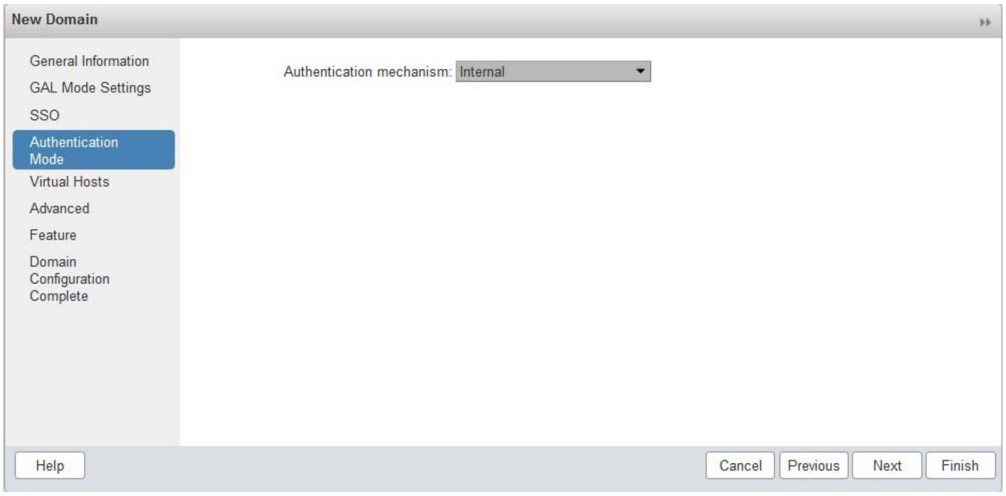
1. Select the domain where you want to change the GAL sync account name.
2. In the gear box, select **Configure GAL** to open the configuration wizard and change the GAL mode to internal. Do not configure any other fields. Click **Finish**.
3. In the domain's account Content pane, delete the domain's galsync account.
4. Select the domain again and select Configure GAL to reconfigure the GAL. In the GAL sync account name field, enter the name for the account. Complete the GAL configuration and click **Finish**. The new account is displayed in the Accounts Content pane.

Authentication Modes

Authentication is the process of identifying a user or a server to the directory server and granting access to legitimate users based on user name and password information provided when users log in.

Set the authentication method on a per-domain basis.

Admin Console: **Home**>**2 Set up Domain**>**1. create Domain, Authentication Mode**


New Domain

Authentication mechanism: Internal

New Domain—Authentication Mode

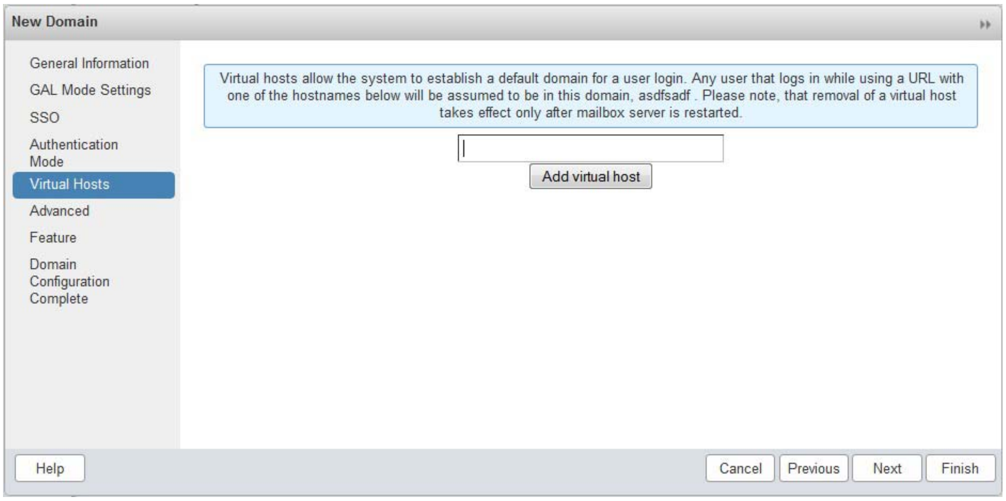
Option	Description
Authentication mechanism	• **Internal**. The Internal authentication uses the Zimbra directory server for authentication on the domain. When you select Internal, no other configuration is required. • **External LDAP**. The user name and password is the authentication information supplied in the bind operation to the directory server. You must configure the LDAP URL, LDAP filter, and to use DN password to bind to the external server. • **External Active Directory**. The user name and password is the authentication information supplied to the Active Directory server. You identify the Active Directory domain name and URL.

Virtual Hosts

Virtual hosting allows you to host more than one domain name on a server. The general domain configuration does not change.

When you create a virtual host, this becomes the default domain for a user login. Zimbra Web Client users can log in without having to specify the domain name as part of their user name.

Admin Console: **Home**>**2 Set up Domain**>**1. Create Domain, Virtual Hosts**



Virtual hosts allow the system to establish a default domain for a user login. Any user that logs in while using a URL with one of the hostnames below will be assumed to be in this domain, asdfsadf . Please note, that removal of a virtual host takes effect only after mailbox server is restarted.

New Domain—Virtual Hosts

Option	Description
Add virtual host	Alphanumeric string to identify the virtual host(s) for this domain. The virtual host requires a valid DNS configuration with an A record. To delete a virtual host from the domain, click Remove alongside the host name displayed in this wizard screen.

To open the Zimbra Web Client log in page, users enter the virtual host name as the URL address. For example, **https://mail.company.com**.

When the Zimbra login screen displays, users enter only their user name and password. The authentication request searches for a domain with that virtual host name. When the virtual host is found, the authentication is completed against that domain.

Renaming a Domain

When you rename a domain you are actually creating a new domain, moving all accounts to the new domain and deleting the old domain. All account, alias, distribution list, and resource addresses are changed to the new domain name. The LDAP is updated to reflect the changes.

Before you rename a domain

- Make sure MX records in DNS are created for the new domain name
- Make sure you have a functioning and current full backup of the domain

After the domain has been renamed

- Update external references that you have set up for the old domain name to the new domain name. This may include automatically generated emails that were sent to the administrator’s mailbox such as backup session notifications. Immediately run a full backup of the new domain

CLI:

```
zmprov -l rd [olddomain.com] [newdomain.com]
```

Domain Rename Process

When you run this `zmprov` command, the domain renaming process goes through the following steps:

1. The status of the old domain is changed to an internal status of shutdown, and mail status of the domain is changed to suspended. Users cannot login, their email is bounced by the MTA, and accounts, calendar resources and distribution lists cannot be created, deleted or modified.

2. The new domain is created with the status of shutdown and the mail status suspended.
3. Accounts, calendar resources, distribution lists, aliases, and resources are all copied to the new domain.
4. The LDAP is updated to reflect the new domain address.
5. The old domain is deleted.
6. The status for the new domain is changed to active. The new domain can start accepting email messages.

Adding a Domain Alias

A domain alias allows different domain names to direct to a single domain address. For example, your domain is domain.com, but you want users to have an address of example.com, you can create example.com as the alias for the domain.com address. Sending mail to user@example.com is the same as sending mail to user@domain.com.

Note: *A domain alias is a domain name just like your primary domain name. You must own the domain name and verify your ownership before you can add it as an alias.*

Admin Console: **Configure**>**Domains**: from the **Gear** icon select, **Add a Domain Alias**.

Enabling Support for Domain Disclaimers

Disclaimers are set per-domain. When upgrading, an existing global disclaimer is converted to domain specific disclaimers on every domain to preserve behavior with previous releases.

CLI: Per domain disclaimer support can be enabled using the following steps.

1. Create a new domain (e.g. example.com), and account (e.g. user2@example.com).

```
zimbra@server-064:~$ zmprov cd example.com
cb9a4846-6df1-4c18-8044-4c1d4c21ccc5
zimbra@server-064:~$ zmprov ca user2@example.com test123
95d4caf4-c474-4397-83da-aa21de792b6a
zimbra@server-064:~$ zmprov -l gaa
user1@server-064.eng.example.com
user2@example.com
```

2. Enable the use of disclaimers

```
zimbra@server-064:~$ zmprov mcf
zimbraDomainMandatoryMailSignatureEnabled TRUE
zimbra@server-064:~$ zmprov gcf
```

```
zimbraDomainMandatoryMailSignatureEnabled
zimbraDomainMandatoryMailSignatureEnabled: TRUE
```

3. Add disclaimers to the new domain

```
zimbra@server-064:~$ zmprov md qatest.com
zimbraAmavisDomainDisclaimerText "text disclamer"
zimbraAmavisDomainDisclaimerHTML "HTML disclaimer"
zimbra@server-064:~$ zmprov gd qatest.com
zimbraAmavisDomainDisclaimerText
zimbraAmavisDomainDisclaimerHTML
# name example.com
zimbraAmavisDomainDisclaimerHTML: HTML disclaimer
zimbraAmavisDomainDisclaimerText: text disclamer
zimbra@server-064:~$ zmprov gd server-064.eng.example.com
zimbraAmavisDomainDisclaimerText
zimbraAmavisDomainDisclaimerHTML
# name server-064.eng.example.com
```

a. On the first MTA:

```
zimbra@server-064:~$ ./libexec/zmaltermimeconfig -e
example.com
Enabled disclaimers for domain: example.comm
Generating disclaimers for domain example.com.
```

b. On all additional MTAs:

```
./libexec/zmaltermimeconfig
```

- To test, send an email from the account (e.g. user2@example.com) in html and plain text format,
- To verify, check emails received with correct HTML disclaimer and plain text disclaimer.
- To disable for the domain example.com

c. On the first MTA, as the Zimbra user:

```
/libexec/zmaltermimeconfig -d example.com
```

d. On all additional MTAs:

```
/libexec/zmaltermimeconfig
```

Disabling Disclaimers for Intra-domain Emails

You can enable the option for emails between individuals in the same domain to not have a disclaimer attached.

Set the attribute `attachedzimbraAmavisOutboundDisclaimersOnly` to TRUE.

To preserve backward-compatibility, this attribute defaults to FALSE.

Disabling the Disclaimer Feature

It is possible to completely remove support for disclaimers by setting the related attribute to FALSE

CLI:
```
zmprov mcf zimbraDomainMandatoryMailSignatureEnabled FALSE
```

Zimlets on the Domain

All Zimlets that are deployed are displayed in the domain's **Zimlets** page. If you do not want all the deployed Zimlets made available for users on the domain, select from the list the Zimlets that are available for the domain. This overrides the Zimlet settings in the COS or for an account.

Managing Server Settings

A server is a machine that has one or more of the Zimbra service packages installed. During the installation, the Zimbra server is automatically registered on the LDAP server.

In the Administration Console, you can view the current status of all the servers that are configured with Zimbra software, and you can edit or delete existing server records. You cannot add servers directly to LDAP. The Zimbra Collaboration Installation program must be used to add new servers because the installer packages are designed to register the new host at the time of installation.

The server settings that can be viewed from the Administration Console, Configure Servers link for a specific server include:

- General information about the service host name, and LMTP advertised name and bind address, and the number of threads that can simultaneously process data source imports.
- A list of enabled services. You can disable and enable the services.
- Authentication types enabled for the server, setting a Web mail MTA hostname different from global. Setting relay MTA for external delivery, and enabling DNS lookup if required. Enable the Milter Server and set the bind address.
- Enabling POP and IMAP and setting the port numbers for a server. If IMAP/POP proxy is set up, making sure that the port numbers are configured correctly.
- Index and message volumes configuration.
- IP Address Bindings. If the server has multiple IP addresses, IP Address binding allows you to specify which interface to bind to.
- Proxy settings if proxy is configured.
- Backup and Restore configuration for the server. When backup and restore is configured for the server, this overrides the global backup and restore setting.

Servers inherit global settings if those values are not set in the server configuration. Settings that can be inherited from the Global configuration include MTA, SMTP, IMAP, POP, anti-virus, and anti-spam configurations.

General Server Settings

The General Information page includes the following configuration information:

- Server display name and a description field
- Server hostname
- LMTP information including advertised name, bind address, and number of threads that can simultaneously process data source imports.

  Default= 20 threads.
- Purge setting. The server manages the message purge schedule. You configure the duration of time that the server should "rest" between purging mailboxes from the Administration Console, Global settings or Server settings, or General Information page.

  Default= message purge is scheduled to run each minute.

CLI: When installing a reverse proxy the communication between the proxy server and the backend mailbox server must be in plain text. Checking **This server is a reverse proxy lookup target** automatically sets the following parameters:

```
zimbraImapCleartextLoginEnabled=TRUE
zimbraReverseProxyLookupTarget=TRUE
zimbraPop3CleartextLoginEnabled=TRUE
```

The Notes text box can be used to record details you want to save.

Change MTA Server Settings

Admin Console: The **MTA** page shows the following settings:

- Authentication enabled.

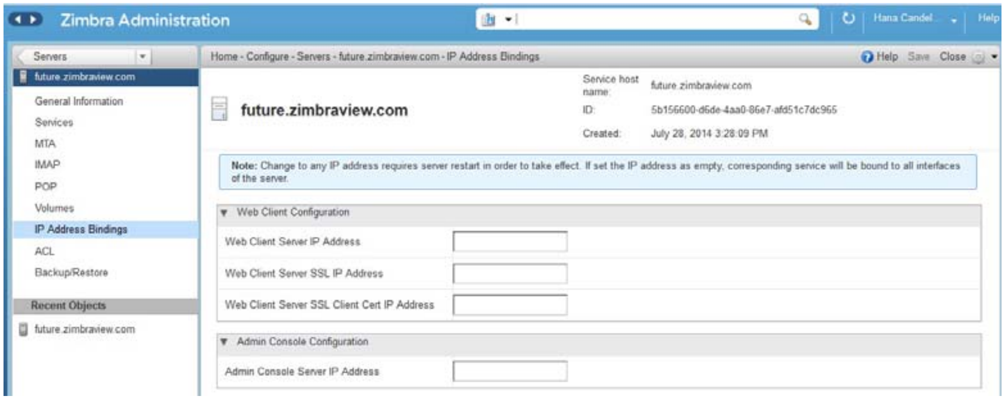
  Enables SMTP client authentication, so users can authenticate. Only authenticated users or users from trusted networks are allowed to relay mail. TLS authentication when enabled, forces all SMTP auth to use Transaction Level Security (similar to SSL) to avoid passing passwords in the clear.
- Network settings, including Web mail MTA hostname, Web mail MTA timeout, the relay MTA for external delivery, MTA trusted networks ID, and the ability to enable DNS lookup for the server.
- Milter Server.

  If **Enable Milter Server** is checked, the milter enforces the rules that are set up for who can send email to a distribution list on the server.

Setting Up IP Address Binding

If the server has multiple IP addresses, you can use IP address binding to specify which specific IP addresses you want a particular server to bind to.

Admin Console: **Home>Configure>Servers** <host name>; right-click for popup menu and select **Edit> IP Address Bindings**



future.zimbraview.com

Service host name: future.zimbraview.com
ID: 5b156600-d6de-4aa0-86e7-afd51c7dc965
Created: July 28, 2014 3:28:09 PM

Note: Change to any IP address requires server restart in order to take effect. If set the IP address as empty, corresponding service will be bound to all interfaces of the server.

▼ Web Client Configuration

Web Client Server IP Address:
Web Client Server SSL IP Address:
Web Client Server SSL Client Cert IP Address:

▼ Admin Console Configuration

Admin Console Server IP Address:

IP Address Bindings

Option	Description
Web Client Server IP Address	Interface address on which the HTTP server listens
Web Client Server SSL IP Address	Interface address on which the HTTPS server listens
Web Client Server SSL Client Cert IP Address	Interface address on which HTTPS server accepting the client certificates listen
Administration Console Server IP Address	Administrator console Interface address on which HTTPS server listens

Managing SSL Certificates for ZCS

A certificate is the digital identity used for secure communication between different hosts or clients and servers. Certificates are used to certify that a site is owned by you.

Two types of certificates can be used - self-signed and commercial certificates.

- A **self-signed certificate** is an identity certificate that is signed by its own creator.

  You can use the Certificate Installation Wizard to generate a new self-signed certificate. This is useful when you use a self-signed certificate and want to change the expiration date. Self-signed certificates are normally used for testing.

Default = 1825 days (5 years)

- A **commercial certificate** is issued by a certificate authority (CA) that attests that the public key contained in the certificate belongs to the organization (servers) noted in the certificate.

When Zimbra Collaboration Server is installed, the self-signed certificate is automatically installed and can be used for testing Zimbra Collaboration Server. You should install the commercial certificate when Zimbra Collaboration Server is used in your production environment.

Installing Certificates

To generate the CSR, you complete a form with details about the domain, company, and country, and then generate a CSR with the RSA private key. You save this file to your computer and submit it to your commercial certificate authorizer.

To obtain a commercially signed certificate, use the Zimbra Certificates Wizard in the Administration Console to generate the RSA Private Key and Certificate Signing Request (CSR).

Admin Console: **Home>1 Get Started>3. Install Certificates**

Use guidelines from the Install Certificates table to set parameters for your certificates.

Install Certificates

Option	Description
Common Name (CN)	Exact domain name that should be used to access your Web site securely. Are you going to use a wildcard common name? If you want to manage multiple sub domains on a single domain on the server with a single certificate, check this box. An asterisk (*) is added to the Common Name field.
Country Name (C)	County name you want the certificate to display as our company location
State/Province (ST)	State/province you want the certificate to display as your company location.
City (L)	City you want the certificate to display as your company location.
Organization Name (O)	Your company name
Organization Unit (OU)	Unit name (if applicable)

Install Certificates (Continued)

Option	Description
Subject Alternative Name (SAN)	If you are going to use a SAN, the input must be a valid domain name. When SAN is used, the domain name is compared with the common name and then to the SAN to find a match. You can create multiple SANs. When the alternate name is entered here, the client ignores the common name and tries to match the server name to one of the SAN names.

Download the CSR from the Zimbra server and submit it to a Certificate Authority, such as VeriSign or GoDaddy. They issue a digitally signed certificate.

When you receive the certificate, use the Certificates Wizard a second time to install the certificate on the Zimbra Collaboration. When the certificate is installed, you must restart the server to apply the certificate.

Viewing Installed Certificates

You can view the details of certificates currently deployed. Details include the certificate subject, issuer, validation days and subject alternative name.

Admin Console: **Home > Certificates** and select a service host name. Certificates display for different Zimbra services such as LDAP, mailboxd, MTA and proxy.

Maintaining Valid Certificates

It is important to keep your SSL certificates valid to ensure clients and environments work properly, as the ZCS system can become non-functional if certificates are allowed to expire. You can view deployed SSL certificates from the ZCS administrator console, including their validation days. It is suggested that certificates are checked periodically, so you know when they expire and to maintain their validity.

Install a SSL Certificate for a Domain

You can install an SSL certificate for each domain on a Zimbra Collaboration server. Zimbra Proxy must be installed on Zimbra Collaboration and correctly configured to support multiple domains. For each domain, a virtual host name and Virtual IP address are configured with the virtual domain name and IP address.

Each domain must be issued a signed commercial certificate that attests that the public key contained in the certificate belongs to that domain.

CLI: Configure the Zimbra Proxy Virtual Host Name and IP Address.

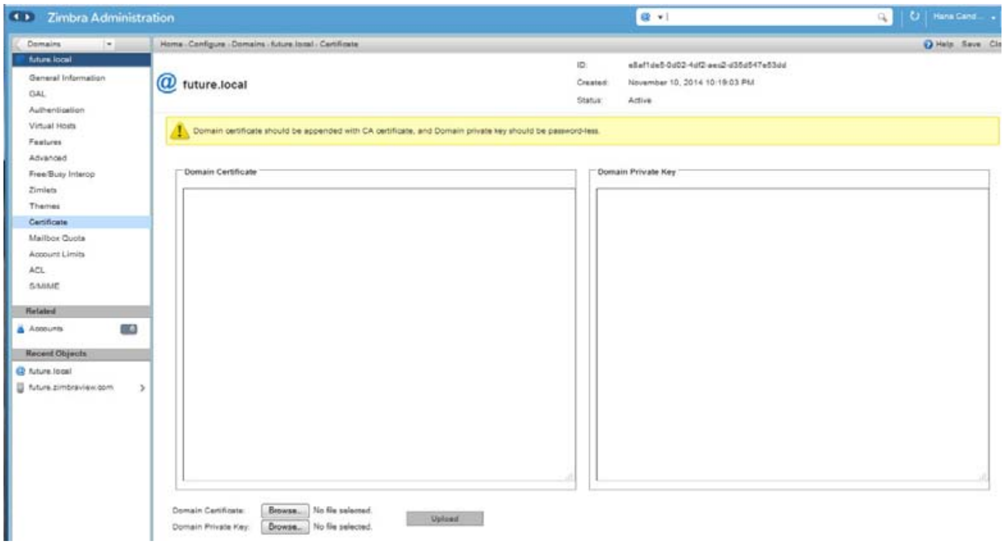
```
zmprov md <domain> +zimbraVirtualHostName {domain.example.com}
+zimbraVirtualIPAddress {1.2.3.4}
```

Note: *The virtual domain name requires a valid DNS configuration with an A record.*

Edit the certificate for the domain:

Admin Console: **Home>1 Get Started>3. Install Certificates**

Copy the domain's issued signed commercial certificate's and private key files to the **Domain Certificate** section for the selected domain.



ID: e8af1de5-0d02-4df2-aea2-d36d547e53dd

Created: November 10, 2014 10:19:03 PM

Status: Active

Domain certificate should be appended with CA certificate, and Domain private key should be password-less.

Domain Certificate: No file selected.

Domain Private Key: No file selected.

4. Copy the root certificate and the intermediate certificates in descending order, starting with your domain certificate. This allows the full certificate chain to be validated.

5. Remove any password authentication from the private key before the certificate is saved.

   See your commercial certificate provider for details about how to remove the password.

6. Click **Upload**.

   The domain certificate is deployed to `/opt/zimbra/conf/domaincerts`

Using DKIM to Authenticate Email Message

Domain Keys Identified Mail (DKIM) defines a domain-level authentication mechanism that lets your organization take responsibility for transmitting an email message in a way that can be verified by a recipient. Your organization can be the originating sending site or an intermediary. Your organization's reputation is the basis for evaluating whether to trust the message delivery.

You can add a DKIM digital signature to outgoing email messages, associating the message with a domain name of your organization. You can enable DKIM signing for any number of domains that are being hosted by ZCS. It is not required for all domains to have DKIM signing enabled for the feature to work.

DKIM defines an authentication mechanism for email using

- A domain name identifier
- Public-key cryptography
- DNS-based public key publishing service.

The DKIM signature is added to the email message header field. The header information is similar to the following example.

```
DKIM-Signature a=rsa-sha1; q=dns;
     d=example.com;
     i=user@eng.example.com;
     s=jun2005.eng; c=relaxed/simple;
     t=1117574938; x=1118006938;
     h=from:to:subject:date;
     b=dzdVyOfAKCdLXdJOc9G2q8LoXSlEniSb
     av+yuU4zGeeruD00lszZVoG4ZHRNiYzR
```

Receivers who successfully validate a DKIM signature can use information about the signer as part of a program to limit spam, spoofing, phising, or other undesirable behavior.

Configure Zimbra Collaboration for DKIM Signing

DKIM signing to outgoing mail is done at the domain level.

CLI: To set up DKIM you must run the CLI `zmdkimkeyutil` to generate the DKIM keys and selector. You then update the DNS server with the selector which is the public key.

1. Log in to the ZCS server and as zimbra:

   ```
   /opt/zimbra/libexec/zmdkimkeyutil -a -d <example.com>
   ```

   The public DNS record data that must be added for the domain to your DNS server is displayed. The public key DNS record appears as a DNS TXT-record that must be added for the domain to your DNS server.

   Optional. To specify the number of bits for the new key, include **-b** in the command line, `-b <####>`. If you do not add the -b, the default setting is 1024 bits.

```
DKIM Data added to LDAP for domain example.com with selector
B534F5FC-EAF5-11E1-A25D-54A9B1B23156
Public signature to enter into DNS:
B534F5FC-EAF5-11E1-A25D-54A9B1B23156._domainkey IN TXT
"v=DKIM1; k=rsa;
p=MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQC+ycHjGL/
mJXEVlRZnxZL/VqaN/
Jk9VllvIOTkKgwLSFtVsKC69kVaUDDjb3zkpJ6qpswjjOCO+0eGJZFA4aB4B
QjFBHbl97vgNnpJq1sV3QzRfHrN8X/
gdhvfKSIwSDFFl3DHewKDWNcCzBkNf5wHt5ujeavz2XogL8HfeL0bTwIDAQA
B" ; ----- DKIM B534F5FC-EAF5-11E1-A25D-54A9B1B23156 for
example.com
```

The generated DKIM data is stored in the LDAP server as part of the domain LDAP entry.

2. Work with your service provider to update your DNS for the domain with the DKIM DNS text record.

3. Reload the DNS and verify that the DNS server is returning the DNS record.

4. Verify that the public key matches the private key, See the Identifiers table for -d, -s, and -x descriptions.

```
/opt/zimbra/opendkim/sbin/opendkim-testkey -d <example.com>
-s
<0E9F184A-9577-11E1-AD0E-2A2FBBAC6BCB> -x /opt/zimbra/conf/
opendkim.conf
```

Identifiers

Parameter	**Description**
-d	Domain name
-s	Selector name
-x	Configuration file name.

Update DKIM Data for a Domain

When the DKIM keys are updated, the DNS server must be reloaded with the new TXT record.

Good practice is to leave the previous TXT record in DNS for a period of time so that email messages that were signed with the previous key can still be verified.

CLI: Log in to the ZCS server and as zimbra:

```
opt/zimbra/libexec/zmdkimkeyutil -u -d <example.com>
```

Optional. To specify the number of bits for the new key, include **-b** in the command line, `-b <####>`. If you do not add the -b, the default setting is 1024 bits.

5. Work with your service provider to update your DNS for the domain with the DKIM DNS text record.
6. Reload the DNS and verify that the DNS server is returning the DNS record.
7. Verify that the public key matches the private key: See the Identifiers table for -d, -s, and -x descriptions.

```
/opt/zimbra/opendkim/sbin/opendkim-testkey -d <example.com>
-s
<0E9F184A-9577-11E1-AD0E-2A2FBBAC6BCB> -x /opt/zimbra/conf/
opendkim.conf
```

Remove DKIM Signing from ZCS

Removing DKIM signing deletes the DKIM data from LDAP. New email message no longer are signed for the domain. When you remove DKIM from the domain, good practice is to leave the previous TXT record in DNS for a period of time so that email messages that were signed with the previous key can still be verified.

CLI: Use the following command syntax to remove the file:

```
/opt/zimbra/libexec/zmdkimkeyutil -r -d example.com
```

Retrieve DKIM Data for a Domain

Use the following command syntax to view the stored DKIM information for the domain, selector, private key, public signature and identity:

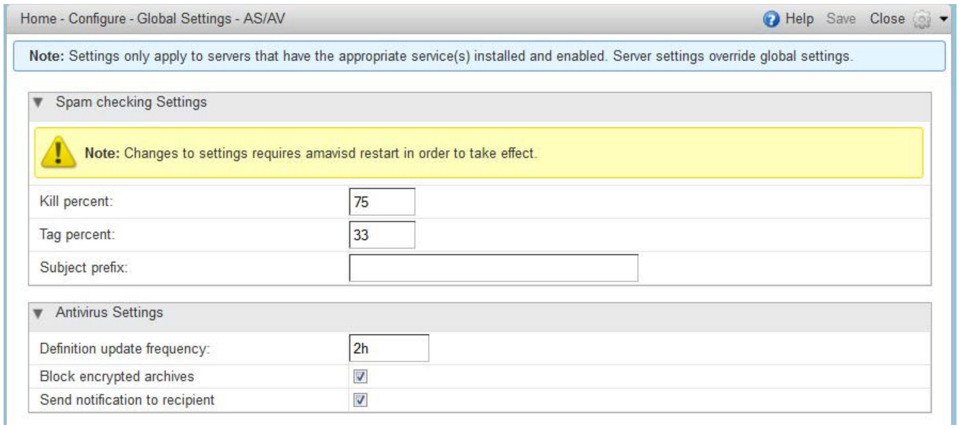
CLI: `/opt/zimbra/libexec/zmdkimkeyutil -q -d example.com`

Anti-spam Settings

ZCS uses SpamAssassin to control spam. SpamAssassin uses predefined rules as well as a Bayes database to score messages. Zimbra evaulates spaminess based on percentage. Messages tagged between 33%-75% are considered spam and delivered to the user’s junk folder. Messages tagged above 75% are not sent to the user and are discarded.

You can change the anti-spam settings..

Admin Console: **Home**>**Configure**>**Global Settings**>**AS/AV**



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Server settings override global settings.

Spam checking Settings

Note: Changes to settings requires amavisd restart in order to take effect.

Kill percent:	75
Tag percent:	33
Subject prefix:	

Antivirus Settings

Definition update frequency:	2h
Block encrypted archives	☑
Send notification to recipient	☑

1. At the Anti-Spam fields, enter parameters, as appropriate for your requirements.
2. From the **Gear** icon, select **Save** to use your settings.

Anti Spam

Option	Description
Kill percent	Percent that scored mail to be considered as spam, and therefore not to be delivered. Default = 75%
Tag percent	Percent that scores mail to be considered as spam, which should be delivered to the Junk folder. Default = 33%
Subject prefix	Text string to be added to the subject line, for messages tagged as spam.

When a message is tagged as spam, the message is delivered to the recipient’s junk folder. Users can view the number of unread messages that are in their junk folder and can open the junk folder to review the messages marked as spam. If you have the anti-spam training filters enabled, when users add or remove messages in the junk folder, their action helps train the spam filter.

RBL (Real time black-hole lists) can be turned on or off in SpamAssassin from the Zimbra CLI.

Anti-Spam Training Filters

The automated spam training filter is enabled by default and two feedback system mailboxes are created to receive mail notification.

- **Spam Training User** for mail that was not marked as spam but should be.
- **Non-spam (referred to as ham) training user** for mail that was marked as spam but should not have been.

The mailbox quota and attachment indexing is disabled for these training accounts. Disabling quotas prevents bouncing messages when the mailbox is full.

How well the anti-spam filter works depends on recognizing what is considered spam. The SpamAssassin filter learns from messages that users specifically mark as spam by sending them to their junk folder or not spam by removing them from their junk folder. A copy of these marked messages is sent to the appropriate spam training mailbox.

When ZCS is installed, the spam/ham cleanup filter is configured on only the first MTA. The ZCS spam training tool, **zmtrainsa,** is configured to automatically retrieve these messages and train the spam filter. The **zmtrainsa script** is enabled through a crontab job to feed mail to the SpamAssassin application, allowing SpamAssassin to 'learn' what signs are likely to mean spam or ham. The zmtrainsa script empties these mailboxes each day.

Note: *New installs of ZCS limit spam/ham training to the first MTA installed. If you uninstall or move this MTA, you will need to enable spam/ham training on another MTA, as one host should have this enabled to run zmtrainsa --cleanup.*

To set this on a new MTA server

```
zmlocalconfig -e zmtrainsa_cleanup_host=TRUE
```

Disabling the Spam Training Mailboxes

The ZCS default is that all users can give feedback when they add or remove items from their junk folder.

CLI: If you do not want users to train the spam filter you can disable this function.

1. Modify the global configuration attributes, `ZimbraSpamIsSpamAccount` and `ZimbraSpamIsNotSpamAccount`
2. Remove the account addresses from the attributes.

```
zmprov mcf ZimbraSpamIsSpamAccount ''
zmprov mcf ZimbraSpamIsNotSpamAccount ''
```

When these attributes are modified, messages marked as spam or not spam are not copied to the spam training mailboxes.

Manually Training Spam Filters

Initially, you might want to train the spam filter manually to quickly build a database of spam and non-spam tokens, words, or short character sequences that are commonly found in spam or ham. To do this, you can manually forward messages as message/rfc822 attachments to the spam and non-spam mailboxes.

When `zmtrainsa` runs, these messages are used to teach the spam filter. Make sure you add a large enough sampling of messages to get accurate scores. To determine whether to mark messages as spam at least 200 known spams and 200 known hams must be identified.

Protect Alias Domains from Backscatter Spam

CLI: To reduce the risk of backscatter spam, you can run a service that runs a Zimbra Access Policy Daemon that validates **RCPT To:** content specifically for alias domains.

> ***Note:*** *For information about creating domain aliases, see the Zimbra wiki article at http://wiki.zimbra.com/index.php?title=ManagingDomains.*

1. Set the Postfix LC key.

   ```
   zmlocalconfig -e postfix_enable_smtpd_policyd=yes
   ```

2. Define the MTA restriction.

   ```
   zmprov mcf +zimbraMtaRestriction "check_policy_service
   unix:private/policy"
   ```

The `postfix_policy_time_limit` key is set because by default the Postfix spawn (8) daemon kills its child process after 1000 seconds. This is too short for a policy daemon that might run as long as an SMTP client is connected to an SMTP process.

Disabling Postfix Policy Daemon

CLI: Disable the SMTPD policy.

```
zmlocalconfig -e postfix_enable_smtpd_policyd=no
```

Admin Console: Define the policy restriction.Setting Email Recipient RestrictionsRealtime Blackhole Lists and Realtime Right-Hand Side Blocking/Black Lists can be turned on or off in the MTA.

Global Settings>**MTA** page

For protocol checks, the following three RBLs can be enabled:

- tname
- Client must greet with a fully qualified hostname - reject_non_fqdn_hostname
- Sender address must be fully qualified - reject_non_fqdn_sender

CLI: Hostname in greeting violates RFC - reject_invalid_host

```
zmprov mcf -zimbraMtaRestriction "check_policy_service
unix:private/policy"
```

The following RBLs can also be set.

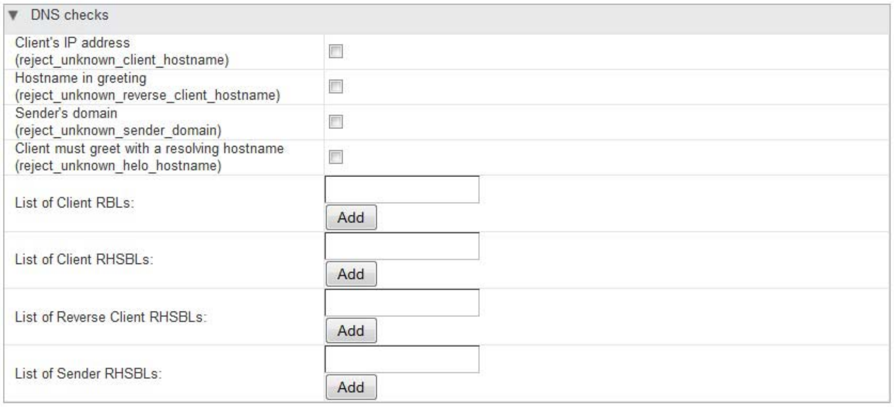
- `reject_rbl_client cbl.abuseat.org`
- `reject_rbl_client bl.spamcop.net`

- `reject_rbl_client dnsbl.sorbs.net`
- `reject_rbl_client sbl.spamhaus.org`

As part of recipient restrictions, you can also use the `reject_rbl_client <rbl hostname>` option.

Admin Console: Use the DNS tools in MTA configuration to define the restriction lists.

Home>Configure>MTA>DNS



▼ DNS checks

Client's IP address (reject_unknown_client_hostname) ☐

Hostname in greeting (reject_unknown_reverse_client_hostname) ☐

Sender's domain (reject_unknown_sender_domain) ☐

Client must greet with a resolving hostname (reject_unknown_helo_hostname) ☐

List of Client RBLs:

List of Client RHSBLs:

List of Reverse Client RHSBLs:

List of Sender RHSBLs:

For a list of current RBL’s, see the *Comparison of DNS blacklists* article at http://en.wikipedia.org/wiki/Comparison_of_DNS_blacklists.

Adding RBLs with the CLI

CLI: Log in to the server and go to the Zimbra directory.

```
su -zimbra
```

1. View the current RBLs.

   ```
   zmprov gacf | grep zimbraMtaRestriction
   ```

2. Add new RBLs: list the existing RBLs and the new Add, in the same command entry. For 2-word RBL names, surround the name with quotes in your entry.

   ```
   zmprov mcf zimbraMtaRestriction [RBL type]
   ```

Example: adding all possible restrictions:

```
zmprov mcf zimbraMtaRestriction reject_invalid_hostname
zimbraMtaRestriction reject_non-fqdn_hostname zimbraMtaRestriction
reject_non_fqdn_sender zimbraMtaRestriction “reject_rbl_client
cbl.abuseat.org” zimbraMtaRestriction “reject_rbl_client
bl.spamcop.net” zimbraMtaRestriction “reject_rbl_client
dnsbl.sorbs.net” zimbraMtaRestriction “reject_rbl_client
sbl.spamhaus.org”
```

Setting Global Rule for Messages Marked as Both Spam and Whitelist

When you use a third-party application to filter messages for spam before messages are received by ZCS, the ZCS global rule is to send all messages that are marked by the third-party as spam to the junk folder. This includes messages that are identified as spam and also identified as whitelisted

If you do not want messages that are identified as whitelisted to be sent to the junk folder, you can configure `zimbraSpamWhitelistHeader` and `zimbraSpamWhitelistHeaderValue` to pass these messages to the user's mailbox. This global rule is not related to the Zimbra MTA spam filtering rules. Messages are still passed through a user's filter rules.

CLI: To search the message for a whitelist header:

```
zmprov mcf zimbraSpamWhitelistHeader <X-Whitelist-Flag>
```

CLI: To set the value:

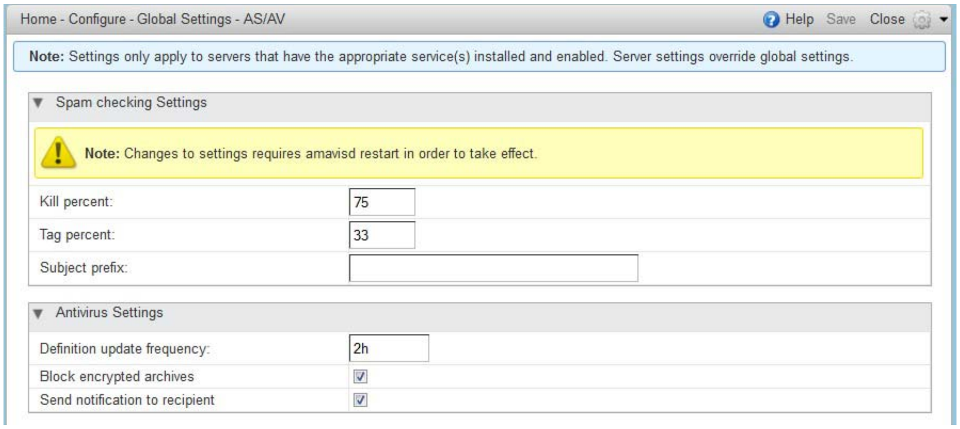
```
zmprov mcf zimbraSpamWhitelistHeaderValue <value_of_third-party_white-
lists_messages>
```

Anti-virus Settings

Anti-virus protection is enabled for each server when the Zimbra software is installed. The anti-virus software is configured to send messages that have been identified as having a virus to the virus quarantine mailbox. An email notification is sent to recipients letting them know that a message has been quarantined. The quarantine mailbox message lifetime is set to 7 days.

From the Admin Console, you can specify ho aggressively spam is to be filtered in your Zimbra Collaboration.

Admin Console: **Home**>**Configure**>**Global Settings**>**AS/AV**



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Server settings override global settings.

▼ Spam checking Settings

Note: Changes to settings requires amavisd restart in order to take effect.

Kill percent:	75
Tag percent:	33
Subject prefix:	

▼ Antivirus Settings

Definition update frequency:	2h
Block encrypted archives	☑
Send notification to recipient	☑

1. At the Anti-Virus fields, enter parameters, as appropriate for your requirements.
2. From the **Gear** icon, select **Save** to use your settings.

Anti Virus

Option	Description
Definition update frequency	By default, the Zimbra MTA checks every two hours for any new anti-virus updates from ClamAV. The frequency can be set between 1 and 24 hours.
Block encrypted archives	Restrict encrypted files, such as password protected zipped files.
Send notification to recipient	To alert that a mail message had a virus and was not delivered.

During Zimbra Collaboration installation, the administrator notification address for anti-virus alerts is configured. The default is to set up the admin account to receive the notification. When a virus has been found, a notification is automatically sent to that address.

Note: *Updates are obtained via HTTP from the ClamAV website.*

Zimbra Free/Busy Calendar Scheduling

The Free/Busy feature allows users to view each other’s calendars for efficiently scheduling meetings. You can set up free/busy scheduling across ZCS and Microsoft Exchange servers.

ZCS can query the free/busy schedules of users on Microsoft Exchange 2003, 2007, or 2010 servers and also can propagate the free/busy schedules of ZCS users to the Exchange servers.

To set free/busy interoperability, the Exchange systems must be set up as described in the Exchange Setup Requirements section, and the Zimbra Collaboration Global Config, Domain, COS and Account settings must be configured. The easiest way to configure Zimbra Collaboration is from the Administration Console.

Exchange 2003/2007/2010 Setup Requirements.

The following is required to set up the free/busy feature:

- Either a single Active Directory (AD) must be in the system or the global catalog must be available.
- The Zimbra Collaboration server must be able to access the HTTP(S) port of IIS on at least one of the Exchange servers.
- Web interface to Exchange public folders needs to be available via IIS. (http://server/public/)
- Zimbra Collaboration users must be provisioned as a contact on the AD using the same administrative group for each mail domain. This is required only for ZCS to Exchange free/busy replication.

- For Zimbra Collaboration to Exchange free/busy replication, the Exchange user email address must be provisioned in the account attribute **zimbraForeignPrincipal** for all Zimbra Collaboration users.

Configuring Free/Busy on Zimbra Collaboration

To set Free/Busy Interoperability up from the Administration Console, the global config, Domain, COS and Account settings must be configured as described here.

- Configure the Exchange server settings, either globally or per-domain..
  - Microsoft Exchange Server URL. This is the Web interface to the Exchange.
  - Microsoft Exchange Authentication Scheme, either **Basic** or **Form**.
    - Basic is authentication to Exchange via HTTP basic authentication.
    - Form is authentication to Exchange as HTML form based authentication.
  - Microsoft Exchange Server Type, either **WebDav** or **ews**
    - Select WebDAV to support free/busy with Exchange 2003 or Exchange 2007.
    - Select ews (Exchange Web Service) to support free/busy with Exchange 2010, SP1.
- Include the Microsoft Exchange user name and password. This is the name of the account in Active Directory and password that has access to the public folders. These are used to authenticate against the Exchange server on REST and WebDAV interfaces.
- Add the **o** and **ou** values that are configured in the **legacyExchangeDN** attribute for Exchange on the Global Config Free/Busy Interop page, the Domain Free/Busy Interop page or on the Class of Service (COS) Advanced page. Set at the global level this applies to all accounts talking to Exchange.
- In the Account's Free/Busy Interop page, configure the foreign principal email address for the account. This sets up a mapping from the Zimbra Collaboration account to the corresponding object in the AD.

Note: *To find these settings on the Exchange server, you can run the Exchange ADSI Edit tool and search the* **legacyExchangeDN** *attribute for the o= , ou= , and cn= settings.*

Storage Management

Managing Storage Volumes

In the Volume page you manage storage volumes on the Zimbra Mailbox server. When Zimbra Collaboration is installed, one index volume and one message volume are configured on each mailbox server. You can add new volumes, set the volume type, and set the compression threshold.

Note: *If Compress Blobs is enabled (YES), the disk space used is decreased, but memory requirements for the server increases.*

Index Volumes

Each Zimbra mailbox server is configured with one current index volume. Each mailbox is assigned to a permanent directory on the current index volume. You cannot change which volume the account is assigned.

As volumes become full, you can create a new current index volume for new accounts. You can add new volumes, set the volume type, and set the compression threshold

Index volumes not marked current are still actively in use for the accounts assigned to them. Any index volume that is referenced by a mailbox as its index volume cannot be deleted.

Message Volumes

When a new message is delivered or created, the message is saved in the current message volume. Message volumes can be created, but only one is configured as the current volume where new messages are stored. When the volume is full, you can configure a new current message volume. The current message volume receives all new messages. New messages are never stored in the previous volume.

A current volume cannot be deleted, and message volumes that have messages referencing the volume cannot be deleted.

Email Retention Management

You can configure retention policies for user account’s email, trash, and junk folders. The basic email retention policy is to set the email, trash and spam message lifetime in the COS or for individual accounts.

You can set up specific retention policies that users can enable for the Inbox and other email folders in their account. Users can also create their own retention policies.

You can enable the dumpster feature to save messages that are deleted from Trash. When an message lifetime has been reached based on email lifetime rules or deletion policies, the message is moved to the dumpster if it is enabled. Users can recover deleted items from the dumpster until the threshold set in the **Visibility lifetime in dumpster for end user** setting.

If dumpster is not enabled, messages are purged from the server when the email retention lifetime is reached.

You can also set up a legal hold on an account to prevent message from being deleted.

Configuring Email Lifetime Rules

You can configure when email messages should be deleted from an accounts folders, and the trash and junk folders by COS or for individual accounts.

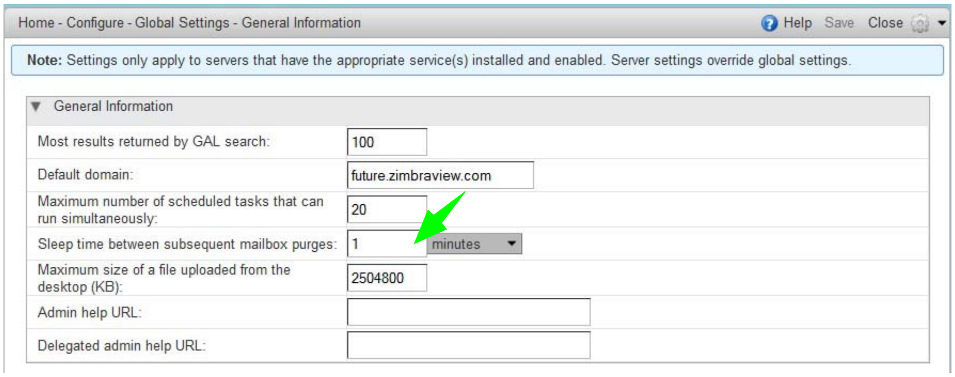
Email Lifetime Option	Description
Email message lifetime	Number of days a message can remain in a folder before it is purged. This includes data in RSS folders. Default = 0 Minimum configuration = 30 days
Trashed message lifetime	Number of days a message remains in the Trash folder before it is purged. Default = 30 days.
Spam messageDefault = lifetime	Number of days a message can remain in the Junk folder before it is purged. Default = 30 days.

Purging Email Messages

By default, the server purges email messages that have exceeded their lifetime every minute.You can change the duration of time that the server should “rest” between purging mailboxes.

Use the global Sleep Time setting to define duration, in minutes, between mailbox purges.

Admin Console: **Home**>**Configure**>**Global Settings**>**General Information**



Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Server settings override global settings.

▼ General Information

Most results returned by GAL search:	100
Default domain:	future.zimbraview.com
Maximum number of scheduled tasks that can run simultaneously:	20
Sleep time between subsequent mailbox purges:	1 minutes
Maximum size of a file uploaded from the desktop (KB):	2504800
Admin help URL:	
Delegated admin help URL:	

For example, the purge interval is set to 1 minute, after mailbox1 is purged of messages that meet the message lifetime setting, the server waits 1 minute before beginning to purge mailbox2.

If the message purge schedule is set to 0, messages are not purged even if the mail, trash and spam message lifetime is set.

Note: *Because users cannot view message lifetime settings, you will need to apprise them of your purge policies.*

Configuring Message Retention and Deletion Policies

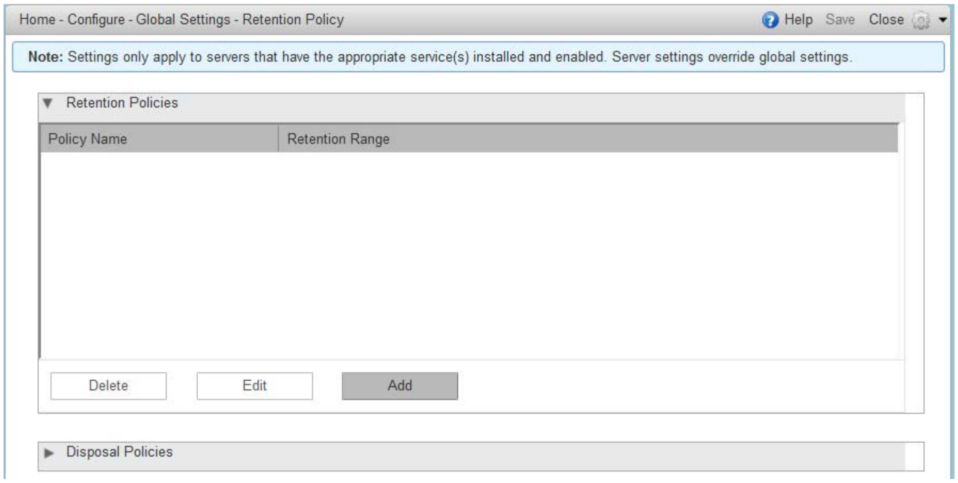
Retention and deletion policies can be configured as a global setting or as a COS setting. Users can select these policies to apply to their message folders in their account. They can also set up their own retention and deletion policies. Users enable a policy you set up or create their own policies from their folders' Edit Properties dialog box.

Global Retention Policy

System wide retention and deletion policies can be managed from the Administration Console.

Use the global Retention Policy page to set global retention or deletion policies.

Admin Console: **Home>Configure>Global Settings>Retention Policy**.

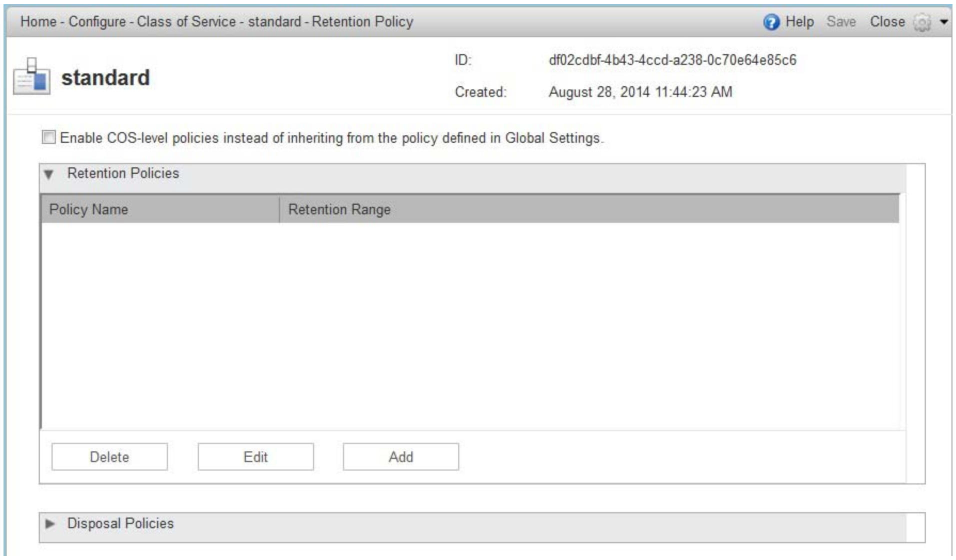


Note: Settings only apply to servers that have the appropriate service(s) installed and enabled. Server settings override global settings.

COS Retention Policy

Use the COS Retention Policy page to set retention or deletion for the selected COS.

Admin Console: **Home>Configure>Global Settings>Retention Policy**



Home - Configure - Class of Service - standard - Retention Policy

standard

ID: df02cdbf-4b43-4ccd-a238-0c70e64e85c6

Created: August 28, 2014 11:44:23 AM

☐ Enable COS-level policies instead of inheriting from the policy defined in Global Settings.

▼ Retention Policies

Policy Name	Retention Range

Ensure that the **Enable COS-level policies instead of inheriting from the policy defined in Global Settings** is enabled.

The retention policy is not automatically enforced on a folder. If users option an item in a folder that has not met the threshold of the retention policy, the following message is displayed, **You are deleting a message that is within its folder's retention period. Do you wish to delete the message**?

When the threshold for the deletion policy is reached, items are deleted from the account. They are not sent to the Trash folder. If the dumpster feature is enabled, they are sent to the dumpster, if it is not enabled, they are purged from the server.

How Lifetime and Retention/Deletion Policies Work Together

If the Email Message Lifetime is set to a value other than zero (0), this setting applies in addition to the disposal or retention policy values applied to a folder. For example:

Email Message Lifetime is set to 120 days

- Folder A has a policy with a disposal threshold of 360 days.
  Messages in Folder a are disposed of in 120 days.
- Folder B has a policy with disposal threshold of 90 days.
  Messages in Folder B are disposed of in 90 days.
- Folder C has a policy with retention range of 150 days.
  Messages in Folder C are disposed of in 120 days.

Managing the Dumpster

When a message, trash or spam lifetime has been reached, the message is moved to the dumpster if the feature is enabled. When users right-click on

Trash, they can click **Recover deleted items** to retrieve items from their trash that has been deleted in the last x days. This threshold is based on the **Visibility lifetime in dumpster for end user** setting.

The **Retention lifetime in dumpster before purging setting** sets retention lifetime for items in dumpster. Items in dumpster older than the threshold are purged and cannot be retrieved.

Administrators can access the individual dumpster's content, including spam, and they can delete data at any time before the message lifetime is reached.

Searching for an item in the dumpster folder

CLI:

```
zmmailbox -z -m <user@example.com> s --dumpster -l <#> --types
<message,contact,document> <search-field>
```

The search field can be a date range: 'before:mm/dd/yyyy and after:mm/dd/yyyy' or emails from or to a particular person: 'from: Joe', etc.

Deleting items in the dumpster folder

Items in the dumpster folder can be deleted with the CLI or from the Administration Console:

CLI:

```
zmmailbox -z -m <user@example.com> -A dumpsterDeleteItem <item-ids>
```

Admin Console: **Home**>**Configure**>**Class of Service** <COS name>, **Features** page, **General Features** section.

1. Enable (check) the Dumpster folder checkbox.
2. To set **Visibility lifetime in dumpster for end user**, go to the COS's, **Advanced** page, **Timeout Policy** section.
3. To set **Retention lifetime in dumpster before purging**, go to the COS's **Advanced** page**, Email Retention Policy** section.

Configure Legal Hold on an Account

If the dumpster folder feature is enabled, you can set up a legal hold to preserve all items in user accounts.

When dumpster is enabled, **Can purge dumpster folder** is also enabled. Disabling this feature turns off purging of items in the user's dumpster. This can be set by a COS or for individual accounts. When **Can purge dumpster folder** is enabled, any deletion policies set up on the accounts' folders are ignored.

To configure legal hold on a COS account:

Admin Console: **Configure>Class of Service>Features** page and deselect **Can purge dumpster folder**.

To configure legal hold on individual accounts:

Admin Console: **Manage>Accounts;** select the account, then Disable the feature on the **Features** page.

Customized Admin Extensions

Developers can create and add custom modules to the Zimbra Administration Console user interface, to provide new views, manage new data objects, extend existing objects with new properties, and customize existing views.

For the most up-to-date and comprehensive information about how to create an extended Administration Console UI module, go to the Zimbra wiki Extending Admin UI article located at http://wiki.zimbra.com/wiki/Extending_Admin_UI.

All Zimbra extensions currently incorporated at the Administration Console UI are listed in the content pane as view only.

Only those created by you can be removed (see also Removing Admin Extension Modules).

Deploying New Administration Console UI Modules

Admin Console: Save the module Zip file to the computer you use to access the Administration Console.

Home>**Configure**>**Admin Extensions**

1. From the **Gear** icon, select **Deploy** to present the **Deploying a Zimlet or an extension** dialog.
2. Browse to the custom module Zip file you need to upload.
3. Click **Deploy**.
   The file is uploaded and the extension is immediately deployed on the server.

Removing An Admin Extension Module

Deleting an Admin Extension results in removal of the selected extension and all associated files. This action does not delete the originating zip file.

Admin Console: Use steps in this section to remove custom Admin Extensions.

Home>**Configure**>**Admin Extensions**

1. Select the module to remove, and select **Undeploy** from the **Gear** icon.
   A confirmation query is presented.
2. At the confirmation query, click **Yes** to proceed.

Backing Up the System

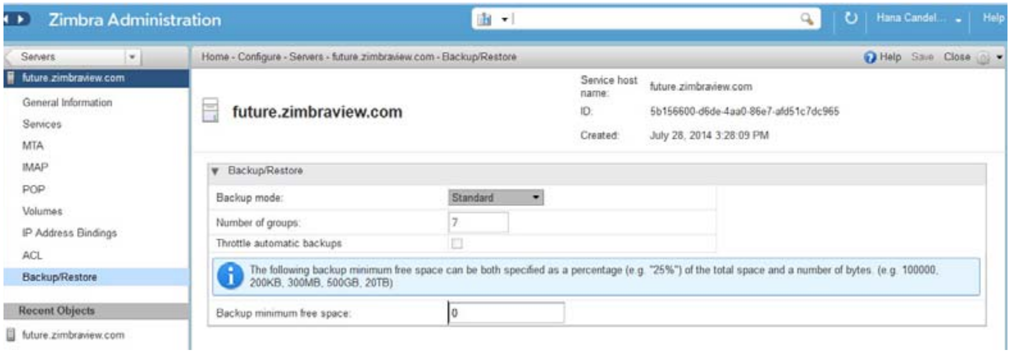
Performing regular backups on the mailbox server can help you quickly restore your email service if there is an unexpected crash. Zimbra recommends that backup of the ZCS server be part of your system-wide backup process. Only full backups of the Zimbra Collaboration data can be created.

1. Before backing up the Zimbra Collaboration data, all servers must be stopped. To stop the servers, use the CLI command, **zmcontrol stop**.
2. After the backup is complete, to restart the servers, use **zmcontrol start**.

   See Appendix A, for more information about these command.

To restore the Zimbra Collaboration data, you must delete the existing data and then restore the backup files. The servers must be stopped before restoring the data.

Admin Console: **Home>Configure>Servers** <host name>; right-click for popup menu and select **Edit > Backup/Restore**



future.zimbraview.com

Service host name: future.zimbraview.com
ID: 5b156600-d6de-4aa0-86e7-afd51c7dc965
Created: July 28, 2014 3:28:09 PM

▼ Backup/Restore

Backup mode: Standard
Number of groups: 7
Throttle automatic backups ☐

The following backup minimum free space can be both specified as a percentage (e.g. "25%") of the total space and a number of bytes. (e.g. 100000, 200KB, 300MB, 500GB, 20TB)

Backup minimum free space: 0

Backup / Restore	
Option	**Description**
Backup Mode	
Number of groups	
Throttle automatic backups	
Backup minimum free space	

10 Class of Service and Accounts

The Class of Service (COS) assigned to an account determines the default attributes for user accounts, and the features to be enabled or denied. Each account is assigned a COS. The COS controls mailbox quotas, message lifetime, password restrictions, attachment blocking, and server pool usage.

A COS is a global object and is not restricted to a particular domain or set of domains.

You can create and edit the classes of services from the Administration Console:

Admin Console: **Configure**> **Class of Service**> *select account:* **Manage**> **Accounts**.

Topics in this chapter:

- Managing Account Usages with a COS, next.
- Selecting Features and Preferences, on page 146.
- Using Server Pools, on page 147.
- Setting Account Quota, on page 147.
- Managing Passwords, on page 149.
- Managing Login Policies, on page 151.
- Managing Session Timeout Policies, on page 152.
- Managing Default External COS, on page 152.

Managing Account Usages with a COS

A default COS is created when Zimbra is installed. You can modify the default COS and create new ones.

From a COS, you can manage the following functions:

- Features and preferences that users can access.
- Themes and Zimlets that users can access.
- Advanced settings including attachment settings, quotas, and password log in policies.
- Web Client Versions (Advanced, Standard, and Mobile clients).
-

- Offline Mode.
- Retention policies.

As an example, you could create an Executive COS that is configured to enable all features, provide unlimited mailbox quotas, and never purges messages. And another General-Employee COS may also be created, which enables only the mail feature, sets the mailbox quota, and purges messages every 60 days. Grouping accounts to a specific COS allows you update or change account features in bulk. As such, when the COS is changed, all accounts assigned to the COS are changed.

If a COS is not explicitly set for a new account, or if the COS assigned to a user no longer exists, the Zimbra default COS is automatically assigned.

You can create a domain COS and have all accounts that are created on that domain automatically assigned to this COS. You can create different COSs and specify which ones are available for the domain. If a domain does not have a COS defined, and you do not specify a COS, the original default COS is automatically assigned when an account is created.

Some COS settings can be overridden either by global settings or by user settings. For example:

- Whether outgoing messages are saved to **Sent** can be changed from the Zimbra Web Client in the user's preferences.
- Attachment blocking set as a global setting can override the COS setting.

Note: *Some COS settings assigned to an account are not enforced for IMAP clients.*

Selecting Features and Preferences

All the features available for a COS are displayed in its **Features** page. From there, you can select or deselect the features you do not want included in the COS.

Note: *Changes made at the account level override the rules in the COS assigned to the account.*

You can define the initial preferences for saving and viewing messages, in the **Preferences** page. You can also select a specific locale for the ZWC view. If a locale is not specified, the browser locale is the default.

For a description of the features and preferences, see Chapter 11, Customizing Accounts.

Disabling Preferences

By default, Preferences are enabled, and your users can modify the default preferences that are configured for their accounts.

As the Administrator, you can disable Preferences. As a result, the Preferences page will not display in users mailboxes: they therefore cannot modify the default configuration for features that are set up for their accounts.

Setting Default Time Zone

The default time zone setting displayed in an account's Preferences folder is used to localize the time for received messages and calendar activities in the standard web client.

When the standard web client is used, the time zone on the computer is not used to set the time a message is received or for calendar activities. Rather, the time zone setting in the **Preferences**> **Calendar Options** is used.

When using the Advanced web client, the time zone setting on the computer is used as the time stamp for received messages and for calendar activities, not the time zone setting on the **General Information** page.

Because the advanced web client and the standard web client do not use the same time zone source to render messages, you might notice that a message displayed on multiple clients will be stamped with different times. You can avoid this by setting the computer time zone and the web client time zone set to the same time.

Using Server Pools

In an environment with multiple mailbox servers, the COS is used to assign a new account to a mailbox server. When you configure the COS, you select which servers to add to the server pool. Within each pool of servers, a random algorithm assigns new mailboxes to any available server.

You can assign an account to a particular mailbox server when you create an account in the New Account Wizard, Mail Server field. Uncheck **auto** and enter the mailbox server in the Mail Server field.

Setting Account Quota

An account quota is the storage limit allowed for an account. Email messages, address books, calendars, tasks, and Briefcase files contribute to the volume of the quota. Account quotas can be set for a COS or for individual accounts from the Administration Console.

If you set the quota to 0, accounts do not have a quota.

Viewing Account Quotas

To view account quotas for all accounts on a domain:

Admin Console: **Home**> **Configure**>**Domains**> *domain*, **Mailbox Quota**.

Notifying Users When Maximum Quota is Near

Users can be notified that their mailboxes are nearing their quota. The quota percentage can be set and the warning message text can be modified: Go to the Quotas container for a specified Class of Service:

Admin Console: **Home**> **Configure**> **Class of Service**> *COSname*, **Advanced**, **Quotas** container.

When the displayed/configured threshold is reached, a quota warning message is sent to the user.

Setting Quotas in Domains

You can set a maximum mailbox quota for a domain. The default for the domain mailbox quota is unlimited. The domain quota is the maximum amount of storage that can be used by all mailboxes within the domain.

You can set an aggregate quota as well. The sum of the quotas for all accounts in the domain can exceed the size of the aggregate.

An aggregate quota policy for how to handle messages that are sent or received once the aggregate quota has been reached can be set up. The policy options include:

- Continue to allow messages to be sent and received as usual.
- Do not allow messages to be sent.
- Do not allow messages to be sent or received.

Notifications can be automatically sent when the quota is within a configured percentage of the aggregate quota. A cron tab job runs daily to check the aggregate quota percentage and if the percentage has been reached, the quota warning email is sent.

Note: *When a domain quota is set, the effective quota for an account is the minimum quota setting of either the domain or account.*

To configure domain quotas, go to the **Domain Quota Setting** container for a specified domain:

Admin Console: **Home**> **Configure**> **Domains**, *domain* **Advanced**, **Domain Quota Setting** container

Managing Excess Quota

You can set how message delivery is handled when a Zimbra user’s mailbox exceeds the configured quota. The default behavior is for the MTA to temporarily send the message to the deferred queue. When the mailbox has sufficient space, the message is delivered. You can change this behavior to either have messages bounce back to the sender instead of being sent to the deferred queue first or you can configure to send the message to the mailbox even if the quota has been exceeded

CLI: To bounce messages instead of sending them to the deferred queue

```
zmprov mcf zimbraLmtpPermanentFailureWhenOverQuota TRUE
```

CLI: To send the message to the mailbox even if the quota has been exceeded

```
zmlocalconfig -e
zimbraMailAllowReceiveButNotSendWhenOverQuota=TRUE
```

When this attribute is set to TRUE, a mailbox that exceeds its quota is still allowed to receive new mail and calendar invites. This quote bypass is only implemented for messages. All other mail items are still affected by the quota

Managing Passwords

If you use internal authentication, you can quickly change an account's password from the Account’s toolbar. The user must be told the new password to log on.

Important: *If Microsoft Active Directory (AD) is used for user authentication, you must disable the Change Password feature in the COS. The AD password policy is not managed by Zimbra.*

If you want to make sure users change a password that you create, you can enable **Must Change Password** for the account. The user must change the password the next time he logs on.

Password restrictions can be set either at the COS level or at the account level. You can configure settings to require users to create strong passwords and change their passwords regularly, and you can set the parameters to lock out accounts when incorrect passwords are entered.

Directing Users to Your Change Password Page

If your ZWC authentication is configured as external auth, you can configure Zimbra Collaboration to direct users to **your password change page** when users change their passwords. You can either set this URL as a global setting or a per domain setting.

CLI: Set the `zimbraChangePasswordURL` attribute to the URL of your password change page.

In ZWC. **Change Password** in **Preferences > General** links to this URL, and when passwords expire, users are sent to this page.

Modifying the password for the domain

CLI:
```
zmprov md exampledomain.com zimbraChangePasswordURL http://
www.mysite.com
```

Configuring a Password Policy

If internal authentication is configured for the domain, you can require users to create strong passwords to guard against simple password harvest attacks Users can be locked out of their accounts if they fail to sign in after the maximum number of attempts configured.

To set password policy, use the **Password** container for a specified Class of Service:

Admin Console: **Home**> **Configure**> **Class of Service**> *COS name*, **Advanced**, **Password** container

The password settings that can be configured are listed below.

Password Options	**Description**
Minimum/Maximum password length	Specifies the required length of a password. The default minimum and maximum are 6 and 64 characters, respectively.
Minimum /Maximum password age	Configures the password expiration date. Users can change their passwords at any time between the minimum and maximum. They must change it when the maximum password age is reached.
The following settings require users to add complexity to their passwords.	
Minimum upper case characters	Uppercase A - Z
Minimum lower case characters	Lowercase a - z
Minimum punctuation symbols	Non-alphanumeric, for example !, $, #, &, %
Minimum numeric characters	Base 10 digits 0 - 9
Minimum number of unique passwords history	Number of unique new passwords that a user must create before an old password can be reused.
Password locked	Users cannot change their passwords.This should be set if authentication is external.
Must change password	User is required to change password at first sign in.
Change password	When enabled, users can change their password at any time within the password age settings from their account Preferences tab.

Managing Login Policies

You can set the maximum number of failed login attempts before the account is locked out for the specified lockout time. This type of policy is used to prevent password attacks.

To set user login policy, use the **Filed Login Policy** container for a specified Class of Service:

Admin Console: **Home**> **Configure**> **Class of Service**> *COS name*, **Advanced**, **Failed Login Policy** container

Login Policy Options	Description
Enable failed login lockout	This enables “failed login lockout” feature. You can configure the following settings.
Number of consecutive failed logins allowed	Number of failed login attempts before the account is locked out. The default is 10. If set to 0, the account is never locked out.
Time to lockout the account	Amount of time the account is locked out. If this is set to 0, the account is locked out until the correct password is entered, or the administrator manually changes the account status and creates a new password. The default is 1 hour.
Time window in which the failed logins must occur within to lock the account	Duration of time after which the number of consecutive failed login attempts is cleared from the log. The default is 0, the user can continue attempts to authenticate, no matter how many consecutive failed login attempts have occurred.

Managing Session Timeout Policies

You can set the period of time to allot for user sessions, as based on various conditions.

To set session timeout policy, use the **Timeout Policy** container for a specified Class of Service:

Admin Console: **Home**> **Configure**> **Class of Service**> *COS name*, **Advanced**, **Timeout Policy** container

Session Timeout Policy Options	Description
Admin console auth token lifetime	Sets a browser cookie that contains the admin auth token. Administrators can open the Administration Console without having to log on again until the auth token expires. The default is 12 hours.
Auth token lifetime	Sets a browser cookie that contains the ZWC auth token. User can open ZWC without having to log on again until the auth token expires. The default is 2 days.When it expires, the log in page is displayed and the user must log in to continue.
Session idle lifetime	How long a user session remains active, if no activity occurs. Activity includes any clickable mouse action, such as viewing folder contents or clicking a button. The default is unlimited.
You can manually expire a user's web client session from the Administration Console Expire Sessions link.This forces the current session of the account to expire immediately.	

Managing Default External COS

The defaultExternal COS is assigned to external virtual accounts that are created when external users accepts a ZCS provisioned users' invitation to share their calendar or briefcase items.

This account is not provisioned on the server, but the external user can sign in to ZWC, create a display name and set a password to view the shared items. The only folders available are for the content they have access to.

The defaultExternal COS is configured with the following general features: Change password, Change UI themes, HTML compose, Export and Search. None of the major features are configured.

11 Customizing Accounts

This chapter describes the features and user preferences that can be configured for an account, either from the assigned COS or in an individual account.

Topics in this chapter:

- Messaging and Collaboration Applications, next.
- Address Book Features, on page 159.
- Calendar Features, on page 160.
- Zimbra Web Client User Interface Themes, on page 164.
- Other Configuration Settings for Accounts, on page 165.

Note: *Mailbox features are enabled for Zimbra Web Client users. When IMAP or POP clients are used, users might not have these features available.*

Messaging and Collaboration Applications

Your COS configuration and assignment of a COS to accounts determines the default settings for account features and the restrictions to be applied to groups of accounts. Individual accounts can be configured differently, and any changes you make override the COS setting. When you update the COS, the changes are not reflected in accounts that have COS overrides.

Email Messaging Features

You configure which email messaging features are enabled. Users can then manage many of the enabled features as preferences.

By default, users manage their own preferences, but you can administratively elect not to allow user modifications to their account preferences. Currently supported ZWC Email Messaging Features are listed and described in Table 18.

Table 18: Email Features

Email Messaging Feature	Description
Mail	Enables the email application. Enabled by default. **Admin Console:** **COS** *name* > **Features**, **Major Features** container
Conversations	Messages can be grouped into conversations by a common thread. The default is to thread messages in a conversation by the References header. If there is no References header, the Subject is used to determine the conversation thread. To change the default, update attribute **zimbraMailThreadingAlgorithm** from the COS or for individual accounts. See zmprov (Provisioning). If this feature is enabled, conversation view is the default. You can change the default on the COS Preferences page. Users can also change the default. **Admin Console:** **COS** *name* > **Features**, **Mail Features** container
HTML compose	Users can compose email messages with an HTML editor. They can specify default font settings as a preference. **Admin Console:** **COS** *name* > **Preferences**, **Composing Mail** container
Draft auto save interval	Frequency of saving draft messages.The default is every 30 seconds. Users cannot change the frequency, but they can turn off the save draft feature. **Admin Console:** **COS** *name* > **Preferences**, **Composing Mail** container
Mail send later	When enabled, users can choose **Send Later** to send a message at a later time. The user configures the data and time for sending. Messages are saved in the Draft folder. **Admin Console:** **COS** *name* > **Features**, **Mail Features** container
Message priority	When enabled, users can set the priority of the message. The recipient viewing from ZWC sees the priority flag if it is high or low. **Admin Console:** **COS** *name* > **Features**, **Mail Features** container

Table 18: Email Features (Continued)

Email Messaging Feature	Description
Allow the user to specify a forwarding address	You can specify a default forwarding address that the user can use. Users can change the forwarding address from their account Preferences tab. You can also specify forwarding addresses that are hidden from the user. A copy of a message sent to the account is immediately forwarded to the designated forwarding address. **Admin Console:** **COS** *name* > **Features**, **Mail Features** container
Out of office reply	Users can create an email message that automatically replies to incoming messages. By default a message is sent to each recipient only once every seven days, regardless of how many messages that person sends to the address. This setting can be changed in the COS Preferences page, **Out of office cache lifetime** field. **Admin Console:** **COS** *name* > **Features**, **Mail Features** container
New mail notification	Allows users the option to specify an address to be notified of new mail. They can turn this feature on or off and designate an address from their account Preferences tab. **Note**: See zmprov (Provisioning) in Appendix A CLI commands, for information about how to change the email template. **Admin Console:** **COS** *name* > **Features**, **Mail Features** container
Persona	When enabled, users can create additional account names to manage different roles. Account aliases can be selected for the **From** name of messages sent from that persona account and a specific signature can be set for the persona account. The number of personas that can be created is configurable depending on your requirements. The minimum is 0, and the default is 20. You can change this from the CLI: `zmprov mc zimbraIdentityMaxNumEntries` **Admin Console:** **COS** *name* > **Features**, **Mail Features** container

Table 18: Email Features (Continued)

Email Messaging Feature	Description
Maximum length of mail signature	The maximum number of characters that can be in a signature. The default is 1024 characters. The number of signatures users can create is configured in `zimbraSignatureMaxNumEntries` **Admin Console: COS** *name* > **Preferences**, **Composing Mail** container
Advanced search	Allows users to build a complex search by date, domain, status, tags, size, attachment, Zimlets, and folders. **Admin Console: COS** *name* > **Features**, **Search Features** container
Saved searches	Users can save a search that they have previously executed or built. **Admin Console: COS** *name* > **Features**, **Search Features** container
Initial search preference	When enabled, the default search mailbox can be changed. **Admin Console: COS** *name* > **Features**, **General Options** container
External POP access	When enabled, users can retrieve their POP accounts' email messages directly from their ZWC account. They add the external account address to their account settings. **Admin Console: COS** *name* > **Features**, **Mail Features** container
External IMAP Access	When enabled, users can retrieve their IMAP accounts' email messages directly from their ZWC account. They can add the external account address to their account settings. **Admin Console: COS** *name* > **Features**, **Mail Features** container
Aliases for this account	You can create an aliases for the account. Users cannot change this.

Table 18: Email Features (Continued)

Email Messaging Feature	Description
Mail filters	Users can define a set of rules and corresponding actions to apply to incoming and outgoing mail and calendar appointments. When an incoming email message matches the conditions of a filter rule, the corresponding actions associated with that rule are applied. **Note:** *Spam check on a received message is completed before users' mail filters are run. Messages identified as spam are moved to the junk folder. To avoid having mail incorrectly marked as spam, users can create a spam whitelist from the Preferences Mail folder to identify email addresses that should not be marked as spam.* **Admin Console: COS** *name* > **Features**, **Mail Features** container
Flagging	Users can create flags and assign them to messages, contacts, and files in Briefcase folders. **Admin Console: COS** *name* > **Features**, **Mail Features** container
Enable keyboard shortcuts	Users can use keyboard shortcuts within their mailbox. The shortcut list can be printed from the Preferences Shortcuts folder. **Admin Console: COS** *name* > **Preferences**, **General Options** container
Global Address List (GAL) access	Users can access the company directory to find names for their email messages. **Admin Console: COS** *name* > **Features**, **General Features** container
Autocomplete from GAL	When enabled, users enter a few letters in their compose header and names listed in the GAL are displayed ranked by usage. See also Autocomplete Ranks Names. **Admin Console: COS** *name* > **Features**, **General Features** container
IMAP access	Users can use third party mail applications to access their mailbox using the IMAP protocol. You can set the polling interval from the COS/Account Advanced page, Data Source>IMAP polling interval section. The polling interval is not set by default. **Admin Console: COS** *name* > **Features**, **Mail Features** container

Table 18: Email Features (Continued)

Email Messaging Feature	Description
POP3 access	Users can use third party mail applications to access their mailbox using the POP protocol. When they retrieve their POP email messages, the messages and attachments are saved on the Zimbra server. Users can configure from their Preferences>Mail page • How messages are download • Whether to include their junk messages. Junk messages are downloaded to their Inbox. • How to delete messages from their POP account. You can set the polling interval from the COS/Account Advanced page, Data Source>POP3 polling interval section. The polling interval is not set by default. **Admin Console:** **COS** *name* > **Features**, **Mail Features** container

Autocomplete Ranks Names

The autocomplete feature displays names ranked with the most frequently recalled contact listed at the top. If the contact name that appears first should not be listed at the top, the user can click **Forget** and the contact names are re-ranked.

Email Preferences that Users Manage

The default behavior for many of the preferences listed in this section can be set from either the COS or the Accounts Preferences page. Users can modify the following mail preferences from their account Preferences Mail page.

- How often, in minutes, that the Web Client checks for new messages, **Check for new mail every...**
- Set or change email message alerts. Alerts can be set up to play a sound, highlight the Mail tab when a message arrives, and flash the browser.
- Set the display language for ZWC. If more than one language locale is installed on Zimbra Collaboration, users can select the locale that is different from the browser language settings.
- Whether to save copies of outbound messages to the Sent folder
- Whether to save a local copy of a message that is forwarded or to have it deleted from their mailbox
- Whether to compose messages in a separate window
- Whether to view mail as HTML for messages that include HTML or to view messages as plain text
- Whether to send a read receipt when it is requested.

- Adjust the default font size for printed messages. The default is 12 points.
- Users can set up their own Spam mail options of whitelist and blacklist email addresses that is used to filter incoming message from their Preferences Mail folder. The default maximum number of whitelist and blacklist addresses is 100 on each list. This value can be changed using `CLI zmprov for accounts and COS. The attributes are zimbraMailWhitelistMaxNumEntries` and `zimbraMailBlacklistMaxNumEntries`.
- Users can modify the following mail preferences from their **Preferences Signatures** page.
    - Whether to automatically append a signature to outgoing messages.
    - Preferences for how messages that are replied to or forwarded are composed.

Using Import and Export to Save User’s Data

The **Preferences Import/Export** page lets users export all of their account data, including mail, contacts, calendar, and tasks. They can export specific items in their account and save the data to their computer or other location. The account data is saved as a tar-gzipped (tgz) archive file so that it can be imported to restore their account. Individual contacts are saved as .csv files, and individual calendar files are saved as .ics files. The data are copied, not removed from the user’s account.

The exported account data file can be viewed with an archive program such as WinRAR archiver. Any of these files can be imported into their account from the same page.

You can turn the Import/Export feature off from the COS or Account Features page, General Features section.

Setting Up RSS Polling Intervals

Users can subscribe to Websites that provide RSS and podcast feeds and receive updated information directly to their mailboxes. The maximum number of feeds that can be returned is 50. RSS feeds count against users’ account quota.

The default is to update the RSS data every 12 hours. Users can right-click on an RSS feed folder to manually load new feed.

You can change the polling interval from the Administration Console the Class of Server or Account Advanced page, Data Source>RSS polling interval section.

Address Book Features

The Zimbra Address Book allows users to create multiple contact lists and add contact names automatically when mail is received or sent. Users can import contacts into their Address Book.

Important: *To allow users to share their mail folders, address books, and calendars, enable Sharing on the Features page:*

Admin Console: **Home**> **Configure**> **Class of Service**, *COSname*, **Features**, **General Features** container

Table 19: Address Book Features

Feature	**Description**	**COS/ Account Tabs**
Address Book	Users can create personal contacts lists. By default, a Contacts list and Emailed Contacts list are created.	Features
Address book size limit	Maximum number of contacts a user can have in all address books. 0 means unlimited.	Advanced

Users can modify the following Address Book preferences from their account **Preferences Address Book** page.

To set default behavior:

Admin Console: **Home**> **COS** or **Accounts**> **Preferences** page.

- Enable auto adding of contacts to automatically add contacts to their Emailed Contact list when they send an email to a new address.
- Enable the ability to use the Global Access List when using the contact picker to look up names.
- Enable the options to include the GAL addresses and names in shared address books when using autocomplete to address a message.

Calendar Features

Zimbra Calendar lets users schedule appointments and meetings, establish recurring activities, create multiple calendars, share calendars with others, and delegate manager access to their calendars. They can subscribe to external calendars and view their calendar information from Zimbra Web Client. They can also use search for appointments in their calendars.

Important: *To allow users to share their calendars, address books, and Briefcase files, enable Sharing in the Features page:*

Admin Console: **Home**> **Configure**> **Class of Service**, COSname, **Features**, **General Features** container

Table 20: Calendar Features

Calendar Feature	Description	COS/ Account Tabs
Calendar	Les users maintain their calendar, schedule meetings, delegate access to their calendar, create multiple personal calendars, and more.	Features
Group Calendar	When Group Calendar is not checked, users can create personal appointments and accept invitations to meetings only. The Find Attendees, Schedule and Find Resources tabs are not displayed.	Features
Nested Calendars	Calendars can be nested within Zimbra Collaboration folders like Mail, Contact, and Calendar folders. The administrator creates a nested list of calendars using CLI. A nested calendar grouping can be imported through migration as well. The CLI command to define the grouping is **zmmailbox -z -m user1 cf -V appointment /<Calendar Name>/ <sub-calendar name**>. This creates a calendar nested under the Calendar Name folder.	
Time zone	Sets the time zone to use for Calendar scheduling.	Preferences
Forward calendar invitation to specific addresses	You can specify email addresses to forward a user's calendar invitations. Users can also specify forwarding address from the Preferences Calendar folder. The account the invitation is forwarded to must have admin privileges on the shared calendar to reply to the invitation.	Accounts Forwarding

Troubleshooting Calendar Appointment Problems

CLI: Use the `zmcalchk` command to check for discrepancy between different users' calendars for the same meeting, and send an email notification regarding the discrepancies.

You can also use this command to notify the organizer and/or all attendees when an appointment is out of sync.

Changing Remote Calendar Update Interval

Remote calendars are updated every 12 hours, by default. The frequency can be modified at the Admin Console.

To modify the frequency of calendar updates:

Admin Console: **Home**> **Class of Service** or **Account Advanced** page, **Data Source**> **Calendar polling interval**.

Disabling Attendee Edits to Appointments

Attendees can edit appointments in their calendars, but their changes do not affect anyone else. If the appointment organizer makes changes, these changes overwrite the attendees edits. You can modify the COS attribute `zimbraPrefCalendarApptAllowAtendeeEdit` to prevent attendees from editing appointments in their calendar.

CLI:

```
zmprov mc <cosname> zimbraPrefCalendarApptAllowAtendeeEdit=
FALSE
```

Setting Other User Calendar Preferences

Users can modify the Calendar preferences listed in the Calendar Preference table. You can set the default behavior in the COS or Accounts Preferences page.

Calendar Preference	Description
Time zone	Time zone displayed in the user's Preferences. See Setting Default Time Zone. If the time zone is configured in the COS, the time zone configured in the domain is ignored.
Number of minutes before an appointment to show reminder	Sets the minutes before the meeting to send a reminder notice.
Initial calendar view	Sets the default view. Options are Day, Work Week, 7-Day Week, Month, List, or Schedule.
First day of the week	Sets the default first day of a user's work week.
Default appointment visibility	Options are Public or Private. Sets the default visibility options on the new appointment page. The default is Public, appointments details can be viewed by others. When the default is Private, all incoming calendar invites are marked as private on the user's calendar and details are hidden.

Calendar Preference	Description
Use iCal delegation model for shared calendars for CalDAV interface.	Apple iCal can be configured to access users' calendars using the CalDAV protocol. When enabled, shared calendars are displayed in users' iCal account's Delegation tab and they can delegate access to their calendars. For automatic polling, the polling interval can be set up in the COS/Account Advanced page, Data Source>CalDAV polling interval field
Enable past due reminders	Users log into the ZWC, the reminder notifications for the last two weeks pop up for meeting reminders that were not dismissed. When this is disabled, Zimbra Collaboration silently dismisses the old reminders.
Enable toaster notification for new calendar events.	A popup displays in ZWC when new calendar events are received
Allow sending cancellation email to organizer.	When users receive an invitation they cannot attend at the scheduled time, they have the option to click **Propose New Time** and select another time. The meeting organizer receives an email with the proposed time.
Automatically add invites with PUBLISH method.	A calendar invitation email should have method=REQUEST in the calendar object but some third-party email clients incorrectly set method=PUBLISH. These emails are not processed as invitations by default. You can relax the rules by enabling this option.
Automatically add forwarded invites to calendar	Invites that have been forward to users are automatically added to the forwarded recipient's calendar.
Flash browser title on appointment reminder.	When appointment reminders pop up, the browser flashes until the user closes the pop-up.
Enable audible appointment notification.	When an appointment reminder pops up, users can be notified by a beep on their computer. Users must have either QuickTime or Windows Media installed.
Auto-decline invites from users who are denied from inviting this user.	Users can configure who can send them calendar invites. When enabled, an auto-reply message is sent to those users to let them know they do not have permission to invite the user.
Automatically add appointments when invited.	When enabled, appointments are automatically added to user's default calendar and declined appointments display on the ZWC calendar in a faded view. **Note**: When viewing appointments from mobile devices users do not see the deleted invite information in a faded view and they might not know that the invite was deleted.
Notify of changes made via delegated access	Users that delegated their calendar are notified of changes made to an appointment by a delegated access grantee.

Calendar Preference	Description
Always show the mini-calendar.	The mini-calendar automatically displays in the Calendar view.
Use the QuickAdd dialog when creating new appointments.	When is enabled, the QuickAdd dialog displays when users double-click or drag on the calendar.
Show time zone list in appointment view.	When enabled, a time zones list displays in their appointment dialog, giving them the opportunity to change time zones while making appointments.

Setting Up Zimbra Tasks

Zimbra Tasks lets users create to-do lists and manage tasks through to completion.

Important: *To allow users to share their Task lists, enable Sharing in the Features page. Task lists can be shared with individuals, groups, and the public.*

To enable or disable the Tasks feature:

Admin Console: **Home**> **COS** or **Accounts**> **Preferences** page.

Zimbra Web Client User Interface Themes

The appearance of the Zimbra Web Client user interface can be changed. A number of Zimbra themes are included with ZCS, and you can create others. You can select a theme to be the default and the themes that users can select to customize their user experience. To develop themes, see Chapter 20, Color and Logo Management.

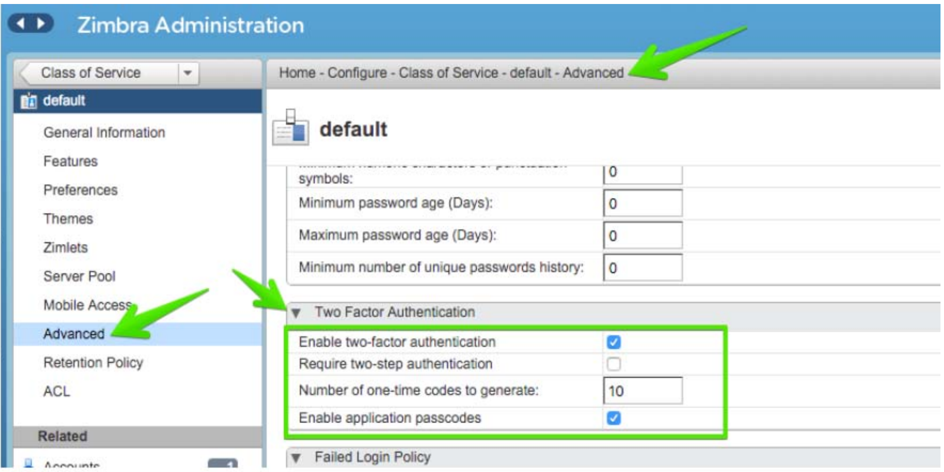
The following theme usage options can be configured either from COS or by individual accounts.

- **Limit users to one theme**.

  On the Features page, remove the check mark from **Change UI Themes**. The ZWC theme is the theme listed in Current UI theme field on the Themes page.

- **Let users access any of the installed Zimbra themes**.

  If the **Change UI Themes** is checked, users can access any of the themes that are listed in the Available UI themes list.



Home - Configure - Class of Service - default - Advanced

default

symbols:	0
Minimum password age (Days):	0
Maximum password age (Days):	0
Minimum number of unique passwords history:	0

▼ Two Factor Authentication

Enable two-factor authentication	☑
Require two-step authentication	□
Number of one-time codes to generate:	10
Enable application passcodes	☑

▼ Failed Login Policy

Other Configuration Settings for Accounts

Enable Sharing

When the Sharing feature is enabled, users can share any of their folders, including their mail folders, calendars, address books, task lists, and Briefcase folders.

A users specifies the type of access permissions to give the grantee. A users can share with internal users who can be given complete manager access, external guests who must use a password to view the folder content, as well as public access so that anyone who has the URL can view the folder’s content.

When internal users share a mail folder, a copy of the shared folder is put in the grantee’s folder list on the Overview pane. Users can manage their shared folders from their ZWC Preferences Sharing page.

Configure SMS Notification

The ZWC **Preferences**> **Notification** page lets users configure an email address or SMS alert to their mobile device to receive a reminder message for a task or a meeting on their calendar. Notification by SMS is disabled by default.

SMS notification can be configured by domain, COS or for individual accounts. SMS notification set in a COS overrides SMS notifications set on a domain. In the Administration Console, this is set on the domain, COS or account’s Feature page.

Users select a region and a carrier when setting up their SMS alert. The list of SMS/email gateways is in **ZmSMS.properties**. You can customize this list to add SMS/email gateways that are not listed.

Display a Warning When Users Try to Navigate Away

Users can click the Back and Forward arrows in the browser, or close their browser without logging out of their account.

- If this preference is checked, users are asked to confirm that they want to navigate away from their account.
- If this preference is not checked, the question is not asked.

Enabling the Check Box for the Web Client

If **Show selection checkbox for selecting email, contact, voicemail items in a list view for batch operations** is enabled, when users view email messages, contacts, and tasks lists in the Content pane, a check box displays for each item. Users can select items and then perform an action such as mark as read/unread, move to a specific folder, drag and drop to a folder, delete, and tag for all those selected items.

Preferences Import/Export

The Preferences Import/Export page lets users export all of their account data, including mail, contacts, calendar, tasks, and Briefcase folders. They can export specific items in their account and save the data to their computer or other location. The account data is saved as a tar-gzipped (tgz) archive file so that it can be easily imported to restore their account. Individual contacts are saved as .csv files, and individual calendar files are saved as .ics files. The data are not removed from their accounts. The exported account data file can be viewed with an archive program such as WinRAR archiver. Any of these files can be imported into their account from the same page.

If you do not want users to the Import/Export capability, you can disable the feature from the COS or Admin Features page.

Adding Words to Spell Dictionary

If ZWC users frequently use words, abbreviations or acronyms that are marked as spelling errors during a ZWC spell check, you can update the COS or domain attribute `zimbraPrefSpellIgnoreWord` with the words that should be ignored when spell check is run.

CLI: To configure words to ignore for a domain:

```
zmprov md domainexample.com +zimbraPrefSpellIgnoreWord <word>
+zimbraPrefSpellIgnoreWord <word2>
```

12 Provisioning User Accounts

When an account is provisioned, you create the mailbox, assign the primary account email address, and assign a class of service (COS) to enable Zimbra Collaboration applications and features.

You can configure one account at a time or migrate multiple existing accounts from a server.

Topics in this chapter:

- Creating a Single User Accounts, next.
- Migrating Accounts and Importing Account Email, on page 168.
- Auto Provisioning New Accounts from External LDAP, on page 175.
- Managing Resources, on page 184.

Creating a Single User Accounts

Before adding a user account, determine which features and access privileges should be assigned. You can either assign a class of service (COS) with the features enabled when you create the account or you can configure the features for the individual accounts. For a description of the features, see Chapter 10, Class of Service and Accounts.

If the COS you assign has the correct functionality for the account, you do not need to perform any additional configuration.

Creating an account sets up the appropriate entries on the Zimbra LDAP directory server. When the user logs in for the first time or when an email is delivered to the user’s account, the mailbox is created on the mailbox server.

For basic user account setup:

Admin Console: **Home**> **Add Accounts**> click **Add Account**.

1. In the **Account Name** section, enter the account name and the last name as a minimum to configure the account.

   The default COS is assigned to the account.

2. Click **Finish** to create the account,

You can continue to configure features and functionality for the individual account. Changes you make to the account override the COS that is assigned to the account.

Migrating Accounts and Importing Account Email

You can provision multiple accounts at one time using the Account Migration Wizard from the Administration Console. You can import accounts from either a generic IMAP server or from another ZCS server.

Note: *Only accounts on ZCS 7.2 or later can be migrated to ZCS 8.0.*

You can also import account names to provision from an XML file that you create.

Note: *To migrate from other types of server, see the ZCS Migration Guides for Exchange and for Lotus Domino servers.*

You can run the migration wizard one time to provision accounts and import data or you can run the migration wizard the first time to provision the accounts and then run the wizard again to import the provisioned accounts' data.

Whether you get the account records from an LDAP directory or use an XML file, you need to set the password requirements for the newly provisioned accounts. The options are to have ZCS randomly create passwords for each account or to set the same password on each account. You have the option to force users to change the password when they sign in the first time.

When the provisioning is complete, the wizard generates a .csv file with a list of new accounts. This includes the passwords that are generated. You should download this file for future reference. Choose a secure location to store the file as it can contain password information for the user accounts you provisioned.

If you running a split domain configuration, you can set the SMTP host and port in the wizard. For more information about split domains, see the wiki article about split domains at http://wiki.zimbra.com/wiki/Split_Domain.

Migrating Accounts from a Zimbra Server

To migrate accounts from a server running ZCS 7.2.0 or later to ZCS 8.0.

Admin Console: **Home**> **Add Accounts**> click **Migration and Co-existence.**

1. In the **Type of mail server** field, select **Zimbra Collaboration.**
2. If you are provisioning accounts, select **Yes** to import the account's records. If you are not going to import the data at this time, in the **Would you like to import mail**, select **No**.
3. Click **Next**.
4. On the **Overview** dialog, Import from another Zimbra LDAP directory is selected. Click **Next**.

5. On the **Bulk provisioning options** page, select whether to generate random passwords or to assign the same password for each account.

Bulk Provisioning Feature	Description
Generate random password	If you select Generate a random password for each account, set the length for the password. The password can be from 6 to 64 characters. Default = 8 characters If you select to generate a random password, you must download the .csv file that is created so that you can give the password information to each user.
Use same password	If you select Use same password for all new accounts, enter the password to use.
Require users to change password after first login	It is recommended that this is checked to force users to change their passwords when they log on the first time.
SMTP Host SMTP Port	For split domain configurations, set the SMTP Host name and port.

6. Click **Next**.

7. On the **Directory connection** dialog enter the information to connect to the server.

Directory Connection Options	Description
Automatically create missing domains	Enable this option to create a domain when an account is imported and the domain they were on is not created. If you do not enable this, accounts from domains that do not exist on the server are not created. Disabling this option makes it easy to import accounts from specific domains that have been pre-created.
Maximum records to fetch	Enter the maximum number of accounts to import at one time. The default is 0, which means that no limits are set.
Server name, LDAP URL, Port, and Use of SSL	• The LDAP URL is entered as ldap:// <ldapdirectory.example.com>. • The default port is 389, but you can change this. • Check SSL if this is used.
Bind DN	The Zimbra setting is in the field by default as uid=zimbra,cn=admins,cn=zimbra
Bind password	Enter the password for the server.

Directory Connection Options	Description
LDAP filter	In this field enter the LDAP search filter to run. Here you can define search criteria to collect the type of account information you want to import. The default filter in the field is **(objectclass-zimbraAccount**). This filter includes the email address, the account ID, and attributes for the account.
LDAP search base	Configure the subsections of the LDAP forest to search.

8. Click **Next**.

   The **Account Migration Wizard** connects to the directory server and generates a report showing the number of domains found; number of accounts found on the server and how many of those accounts are already created on ZCS. This dialog also shows the password options you configured.

9. Review the report generated and then click **Next**. The accounts are provisioned on the Zimbra Collaboration server.

10. Download the .csv file that lists the provisioned accounts and their passwords. The .csv file is deleted when you close the wizard. If you do not download the file, you cannot access the report later.

Migrating Accounts from Generic IMAP Servers

Use steps in this section to provision accounts on the Zimbra server.

Admin Console: **Home> Add Accounts**> click **Migration and Co-existence.**

1. In the **Type of mail server** field, select **Generic IMAP Server.**

2. If you are provisioning accounts, select **Yes** to import the account’s records. If you are not going to import the data at this time, in the Would you like to import mail, select No.

3. Click **Next**.

4. On the **Overview** dialog, Import from another LDAP directory is selected. Click **Next**.

5. On the **Bulk provisioning options** page, select whether to generate random passwords or to assign the same password for each account.

Bulk Provisioning Feature	Description
Generate random password	If you select Generate a random password for each account, set the length for the password. The password can be from 6 to 64 characters. Default = 8 characters If you select to generate a random password, you must download the .csv file that is created so that you can give the password information to each user.
Use same password	If you select Use same password for all new accounts, enter the password to use.
Require users to change password after first login	It is recommended that this is checked to force users to change their passwords when they log on the first time.
SMTP Host SMTP Port	For split domain configurations, set the SMTP Host name and port.

6. Click **Next**.
7. On the **Directory connection** dialog enter the information to connect to the server.

Directory Connection Options	Description
Automatically create missing domains	Enable this option to create a domain when an account is imported and the domain they were on is not created. If you do not enable this, accounts from domains that do not exist on the server are not created. Disabling this option makes it easy to import accounts from specific domains that have been pre-created.
Maximum records to fetch	Enter the maximum number of accounts to import at one time. The default is 0, which means that no limits are set.
Server name, LDAP URL, Port, and Use of SSL	• The LDAP URL is entered as ldap://<ldapdirectory.example.com>. • The default port is 389, but you can change this. • Check SSL if this is used.
Bind DN	The Zimbra setting is in the field by default as uid=zimbra,cn=admins,cn=zimbra
Bind password	Enter the password for the server.

Directory Connection Options	Description
LDAP filter	In this field enter the LDAP search filter to run. Here you can define search criteria to collect the type of account information you want to import. The default filter in the field is **(objectclass-zimbraAccount**). This filter includes the email address, the account ID, and attributes for the account.
LDAP search base	Configure the subsections of the LDAP forest to search.

8. Click **Next**.

   The Migration Wizard connects to the directory server and generates a report showing the number of domains found; number of accounts found on the server and how many of those accounts are already created on ZCS. This dialog also shows the password options you configured.

9. Review the report generated and then click **Next**. The accounts are provisioned on the Zimbra Collaboration server.

10. Download the .csv file that lists the provisioned accounts and their passwords. The .csv file is deleted when you close the wizard. If you do not download the file, you cannot access the report later.

Migrating Accounts using an XML File

Use steps in this section to create an XML file with the account information and save it to a computer you can access.

Admin Console: **Home**> **Add Accounts**> click **Migration and Co-existence.**

1. In the **Type of mail server** field, select the type of server your are migrating from**.**

2. If you are provisioning accounts, select **Yes** to import the account's records. If you are not going to import the data at this time, in the Would you like to import mail, select No.

3. Click **Next**.

4. On the **Overview** dialog, select **Import from an XML** file. Click **Next**.

5. The **Review** options dialog displays the number of domains; number of accounts and the password options configured in the XML file.

6. If this information is correct, click **Next**. If this information is not correct, fix your XML file before proceeding.

   If you clicked **Next**, the accounts are provisioned on the Zimbra Collaboration server.

7. Download the .csv file that lists the provisioned accounts and their passwords. The .csv file is deleted when you close the wizard. If you do not download the file, you cannot access the report later.

Importing Email for Selected Accounts

Use steps in this section to specify the list of accounts whose mail you want to import by either selecting the accounts to import data or by using an XML file to select the accounts.

Note: *Ensure that accounts are provisioned on the ZCS server before attempting this procedure.*

Admin Console: **Home**> **Add Accounts**> click **Migration and Co-existence.**

1. In the **Typ**e **of mail server** field, select the type of server your are importing the data from**.**
2. In the **Would you like to import account records** menu, select **No**.
3. In the **Would you like to import mail menu**, select **Yes**.
4. Click **Next**.
5. On the **Import options** dialog box, select which way you are going to specify the accounts whose mail is being imported. Click **Next**.

   If you are selecting accounts, go to step 7. If you are using an XML file go to step 8.
6. If you are selecting the accounts to import, on the Selected Accounts dialog box, search for the accounts to add. You can search by domain or user name. If you click Search without entering text, all accounts are returned.

   Add the accounts to the **Accounts for data import** column.

   Click **Next**.
7. If you are using an XML file with the accounts listed, browse to the XML file to use. Click **Next**.
8. In the IMAP Connection details dialog box, enter the information necessary to connect to the exporting server's IMAP, this includes the IMAP host name, port and administrator login information. Click **Next**.
9. Review the data import options. If the information is correct, click **Next**.

XML File Examples

This section contains three examples of the XML file structure, to provision accounts and import data, in the following topics:

- Using an XML file to provision accounts. next.
- Using an XML file to provision accounts from externally hosted domains. on page 174.
- Using an XML file to import email. on page 175.

Using an XML file to provision accounts. The following example shows an XML file that is used to provision multiple email accounts without importing mail:

```
<?xml version="1.0" encoding="UTF-8"?>
<ZCSImport>
<ImportUsers>
<User>
<sn>Sample</sn>
<givenName>Sam</givenName>
<displayName>Sam Sample</displayName>
<RemoteEmailAddress>ssample@example.com</RemoteEmailAddress>
<password>test123</password>
<zimbraPasswordMustChange>TRUE</zimbraPasswordMustChange>
</User>
<User>
<sn>Zackry</sn>
<givenName>Zak</givenName>
<displayName>Zak Zackry</displayName>
<RemoteEmailAddress>zzackry@example.com</RemoteEmailAddress>
<password>test123</password>
<zimbraPasswordMustChange>TRUE</zimbraPasswordMustChange>
</User>
</ImportUsers>
</ZCSImport>
```

Using an XML file to provision accounts from externally hosted domains. The following example shows an XML file that is used to provision multiple email accounts for externally hosted domain without importing mail.

In this example, the zimbraMailTransport attribute of newly provisioned accounts will be set to point to external SMTP server instead of the ZCS server.

```
<?xml version="1.0" encoding="UTF-8"?>
<ZCSImport>
<SMTPHost>smtp.example.com</SMTPHost>
<SMTPPort>25</SMTPPort>
<ImportUsers>
<User>
<sn>Sample</sn>
<givenName>Sam</givenName>
<displayName>Sam Sample</displayName>
<RemoteEmailAddress>sam@example.com</RemoteEmailAddress>
</User>
<User>
<sn>Zackry</sn>
<givenName>Zak</givenName>
<displayName>Zak Zackry</displayName>
<RemoteEmailAddress>zzackry@example.com</RemoteEmailAddress>
</User>
</ImportUsers>
</ZCSImport>
```

Using an XML file to import email. The following example shows an XML file that is used to import email for one account via IMAP from a gmail account without provisioning the email account in ZCS. The account must be provisioned on ZCS before running this type of XML file.

```
<?xml version="1.0" encoding="UTF-8"?>
<ZCSImport>
<IMAPHost>imap.gmail.com</IMAPHost>
<IMAPPort>993</IMAPPort>
<ConnectionType>ssl</ConnectionType>
<UseAdminLogin>0</UseAdminLogin>
<ImportUsers>
<User>
<sn>Sample</sn>
<givenName>Sam</givenName>
<displayName>Sam Sample</displayName>
<RemoteEmailAddress>sam@example.com</
RemoteEmailAddress><RemoteIMAPLogin>sam@example.com</
RemoteIMAPLogin><remoteIMAPPassword>test123</remoteIMAPPassword></
User>
</ImportUsers>
</ZCSImport>
```

Auto Provisioning New Accounts from External LDAP

Auto provisioning of new accounts from external LDAP is supported via the CLI. This section describes the supported CLI attributes and auto provisioning methods, in the following topics:

- Overview, next.
- Auto-Provisioning Attributes on page 177.
- Place holders on page 180.
- Eager Mode Configuration on page 180.

- Lazy Mode Configuration on page 182.
- Manual Mode Configuration on page 183.

Overview

When an external LDAP authentication mechanism—such as external LDAP authentication, preauth, or SPNEGO—is configured for a ZCS domain, you can set up ZCS to automatically create user accounts on ZCS. Primary email address and account attributes are mapped from an external directory.You can configure how and when new accounts should be created from the external directory data.

Three modes are supported for auto-provisioning configuration.,

Mode	Description
Eager	ZCS polls the external directory for accounts to auto provision. For this mode, you configure how often the external directory is polled for new users, the maximum number of users to process at each interval, and which domains are scheduled for account auto provision on specified servers. Guidelines are provided in Eager Mode Configuration on page 180.
Lazy	If a user logs into ZWC the first time through one of the authentication mechanisms supported for auto provisioning, and if the user does not exist in the ZCS directory, a new account is automatically created in ZCS for this user. Guidelines are provided in Lazy Mode Configuration on page 182.
Manual	Auto provisioning does not occurs: instead, the administrator manually searches from the configured external auto-provisioning LDAP source and selects an entry from the search result to create the corresponding Zimbra account for the external entry. Guidelines are provided in Manual Mode Configuration on page 183.

When an account is created, the account name (consisting of the characters alongside the @ symbol) is mapped from a user attribute on the external directory that you define in `zimbraAutoProvAccountNameMap`. Other account information, such as first and last name, phone numbers, and address, is populated from the attributes mapped from the external directory based on `zimbraAutoProvAttrMap`. You can review the external directory's attributes to determine those that should be mapped to a Zimbra attribute.

The COS assignment for auto-provisioned accounts is identical to the way that COS is determined for manually provisioned accounts:

- If a COS is defined for the domain, this COS is assigned to the accounts that are created.
- If a domain COS is not defined, the ZCS default COS is assigned.

You can configure a **Welcome** email message to be sent to newly created accounts. The subject and body of this email can be configured with `AutoProvNotification`*** attributes on the domain.

Auto-Provisioning Attributes

CLI: The attributes listed in this section can be used with the `zmprov` command to configure auto provisioning of new accounts with an external LDAP directory. Example usages are provided in Eager Mode Configuration on page 180, Lazy Mode Configuration on page 182, and Manual Mode Configuration on page 183.

`zimbraAutoProvMode`

Set auto provision mode as either EAGER, LAZY, and/or MANUAL. Multiple auto-provisioning modes can be enabled on a domain.

`zimbraAutoProvAuthMech`

Set type of authentication mechanism—as either LDAP, PREAUTH, KRB^, or SPNEGO—to enable for LAZY mode. Once a user authenticates via the specified authentication mechanism, and if the user account does not yet exist in the Zimbra directory, an account will be automatically created in the Zimbra directory.

`zimbraAutoProvLdapURL`

Set the LDAP URL of the external LDAP source for auto provisioning

`zimbraAutoProvLdapStartTlsEnabled`

Enable (TRUE) or disable (FALSE) the StartTLS protocol when accessing the external LDAP server for auto provisioning.
Default = FALSE.

`zimbraAutoProvLdapAdminBindDn`

Defines the LDAP search bind DN for auto provisioning.

`zimbraAutoProvLdapAdminBindPassword`

Set the LDAP search admin bind password for auto provisioning.

`zimbraAutoProvLdapSearchBase`

Set the LDAP search base for auto provisioning, used in conjunction with zimbra `zimbraAutoProvLdapSearchFilter.`
If not set, LDAP root DSE will be used.

`zimbraAutoProvLdapSearchFilter`

Defines the LDAP search filter template for account auto provisioning.
For LAZY mode, either `zimbraAutoProvLdapSearchFilter`
`or`
`zimbraAutoProvLdapBindDn` must be set.
If both are set, `zimbraAutoProvLdapSearchFilter` will take precedence.
See Table 21 for supported placeholders.

`zimbraAutoProvLdapBindDn`

Defines the LDAP external DN template for account auto provisioning.
For LAZY mode, either `zimbraAutoProvLdapSearchFilter`
or

`zimbraAutoProvLdapBindDn` must be set.
If both are set, `zimbraAutoProvLdapSearchFilter` will take precedence.
See Table 21 for supported placeholders.

`zimbraAutoProvAccountNameMap`

Defines the attribute name in the external directory that contains local part of the account name. This is the name used to create the Zimbra account. If this is not specified, the local part of the account name is the principal user used to authenticated to Zimbra.

`zimbraAutoProvAttrMap`

Defines the attribute map for mapping attribute values from the external entry to Zimbra account attributes. Values are in the format of {external attribute}={zimbra attribute}. If this is not set, no attributes from the external directory are populated in Zimbra account.

Note: *Invalid mapping configuration will cause the account creation to fail.*
Bad mapping may be due to conditions such as:
- Invalid external attribute name.
- Invalid Zimbra attribute name.
- External attribute contains multiple values;
the Zimbra attribute contains only a single value.
- Syntax violation (such as external attribute=string, but Zimbra attribute = integer).

`zimbraAutoProvNotificationFromAddress`

Defines the email address to put in the **From** header for the Welcome email sent to the newly created account. If not set, no notification email is sent to the newly created account.

`zimbraAutoProvNotificationSubject`

Template used to construct the subject of the notification message sent to the user when the user's account is auto provisioned.
Supported variables: `${ACCOUNT_ADDRESS}`, `${ACCOUNT_DISPLAY_NAME}`

`zimbraAutoProvNotificationBody`

Template used to construct the subject of the notification message sent to the user when the user’s account is auto provisioned.
Supported variables `${ACCOUNT_ADDRESS}, ${ACCOUNT_DISPLAY_NAME}`

`zimbraAutoProvListenerClass`

Domain setting to define the class name of auto provision listener. The class must implement the `com.zimbra.cs.account.Account.AutoProvisionListener` interface. The singleton listener instance is invoked after each account is auto created in Zimbra. Listener can be pluthe gged in as a server extension to handle tasks like updating the account auto provision status in the external LDAP directory.

At each eager provision interval, ZCS does an LDAP search based on the value configured in `zimbraAutoProvLdapSearchFilter`. Returned entries from this search are candidates to be auto provisioned in this batch. The `zimbraAutoProvLdapSearchFilter` should include an assertion that will only hit entries in the external directory that have not yet been provisioned in ZCS, otherwise it's likely the same entries will be repeated pulled in to ZCS. After an account is auto provisioned in ZCS, `com.zimbra.cs.account.Account.AutoProvisionListener.postCreate`
(Domain domain, Account acct, String external DN) will be called by the auto provisioning framework. Customer can implement the AutoProvisionListener interface in a ZCS server extension and get their `AutoProvisionListener.postCreate()` get called. The implementation of customer's post Create method can be, for example, setting an attribute in the external directory on the account just provisioned in ZCS. The attribute can be included as a condition in the `zimbraAutoProvLdapSearchFilter`, so the entry won't be returned again by the LDAP search in the next interval.

`zimbraAutoProvBatchSize`

Domain | Global setting to define the maximum number of accounts to process in each interval for EAGER auto provision.

`zimbraAutoProvScheduledDomains`

Server attribute that lists the domains scheduled for EAGER auto provision on this server. Scheduled domains must have EAGER mode enabled in `zimbraAutoProvMode.` Multiple domains can be scheduled on a server for EAGER auto provision. Also, a domain can be scheduled on multiple servers for EAGER auto provision.

`zimbraAutoProvPollingInterval`

Domain | Global setting to define the interval between successive polling and provisioning accounts in EAGER mode. The actual interval might take longer since it can be affected by two other factors: `zimbraAutoProvBatchSize` and number of domains configured in `zimbraAutoProvScheduledDomains`.
At each interval, the auto provision thread iterates through all domains in `zimbraAutoProvScheduledDomains` and auto creates accounts up to domain.`zimbraAutoProvBatchSize.` If that process takes longer than `zimbraAutoProvPollingInterval` than the next iteration starts immediately instead of waiting for `zimbraAutoProvPollingInterval` amount of time.

- If set to 0 when server starts up, the auto provision thread will not start.
- If changed from a non-0 value to 0 while server is running, the auto provision thread will be shutdown.
- If changed from 0 to a non-0 value while server is running, the auto provision thread will be started.

Place holders

Table 21: Place holders for use with auto provisioning attributes

Tag	Description	Result
%/n	User name and the @ symbol.	This returns *user1@domain.com*
%u	User name without the @ symbol.	This returns *user1*.
%d	Domain.	This returns *domain.com*
%D	Domain as dc	This returns domain,dc=com

Eager Mode Configuration

CLI: With Eager mode, ZCS polls the external directory for accounts to auto provision. You configure how often the external directory is polled for new users, the maximum number of users to process at each interval, and the domains to be scheduled for account auto-provisioning on specified servers.

1. Log in to the ZCS server as zimbra and type `zmprov` at the command prompt.
2. Enable EAGER mode on the domain.

   ```
   md <domain.com> zimbraAutoProvMode EAGER
   ```

3. Set the maximum number of accounts to process in each interval:

   ```
   md <domain.com> zimbraAutoProvBatchSize <#>
   ```

4. Configure the interval (in minutes) between polling and provisioning of accounts. This must be set to a non-0 value for the auto provisioning thread to start.
   Default =15 minutes.

   ```
   ms <server.com> zimbraAutoProvPollingInterval <x minutes>
   ```

5. Select the domains to be scheduled for auto provisioning.
   Multiple domains can be scheduled on the server.
   A domain can be scheduled on multiple servers.

   ```
   ms <server.com> +zimbraAutoProvScheduledDomains
   <domain1.com> +zimbraAutoProvScheduledDomains <domain2.com>
   ```

6. Configure the external LDAP settings:
   a. LDAP URL.

      ```
      md <domain.com> zimbraAutoProvLdapURL “ldap://
      xxx.xxx.xxx.xxx:<port>
      ```

      The LDAP port is typically 389.

   b. (Optional) Enable StartTls.

      ```
      md <domain.com> zimbraAutoProvLdapStartTlsEnabled TRUE
      ```

   c. LDAP admin bind DN for auto provision:

```
md <domain.com> zimbraAutoProvLdapAdminBindDn “cn=admin,
dc=autoprov, dc=company, dc=com”
```

d. Administrator’s LDAP search bind password for auto provision.

```
md <example.com> zimbraAutoProvLdapAdminBindPassword
<password>
```

e. Search template to use when searching for users to auto provision.

Example: using the LDAP search filter:

```
md <domain.com> zimbraAutoProvLdapSearchFilter
“(uid=<%placeholder>)”
```

Refer to Table 21 on page 180 for supported <%placeholders>.

f. LDAP search base for auto provisioning.
This is the location in the directory from which the LDAP search begins. This is used with `zimbraAutoProvLdapSearchFilter.` If this is not set, the LDAP directory root, `rootDSE`, is the starting point.

```
md <domain.com> zimbraAutoProvLdapSearchBa
```

```
md <domain.com> zimbraAutoProvLdapBindDn <“placeholder1”>
```

Refer to Table 21 on page 180 for supported <%placeholders>.

7. (Optional). Define the attribute name that is mapped to the local part of the account name on the external directory. This is used to define the account name on ZCS. If this is not specified, the local part of the account name is the principal user name used to authenticate to ZCS.

```
md <domain.com> zimbraAutoProvAccountNameMap < value>
```

8. (Optional). Map the attribute values from the external entry to the ZCS account attributes. If this is not set up, no attributes from the external directory are populated in the ZCS directory. The value is mapped in the form of {external attribute}={zimbra attribute}.

IMPORTANT: Invalid mapping configuration will cause the account creating to fail.

To map the “sn” value on the external entry to “displayName” on the Zimbra account and map description value on the external entry to description on the ZCS account, type

```
md <domain.com> +zimbraAutoProvAttrMap sn=displayName
+zimbraAutoProvAttrMap description=description
```

9. (Optional) If you want to send a Welcome email to new accounts, enter the *from* address of the originator.

```
md <domain.com> zimbraAutoProvNotificationFromAddress
<name@domain.com>
```

10. To exit zmprov, type

```
exit
```

Lazy Mode Configuration

CLI: Lazy mode auto provisioning automatically creates a new account after a user authenticates from an external authentication mechanisms (LDAP, preauth, Kerberos 5, and/or Spnego).

1. Log in to the ZCS server as zimbra and type `zmprov` at the command prompt.

2. Enable LAZY mode,

   ```
   md <domain.com> zimbraAutoProvMode LAZY
   ```

3. Select the external authentication mechanism for the LAZY mode: LDAP, PREAUTH, KRB5, SPNEGO. You can specify multiple authentication mechanisms.

   ```
   md <example.com> zimbraAutoProvAuthMech <type>
   +zimbraAutoProvAuthMech <type2>
   ```

4. Configure the external LDAP settings

   a. LDAP URL:

      ```
      md <domain.com> zimbraAutoProvLdapURL “ldap://
      xxx.xxx.xxx.xxx:<port>
      ```

      The LDAP port is usually 389.

   b. (Optional) Enable StartTls

      ```
      md <domain.com> zimbraAutoProvLdapStartTlsEnabled TRUE
      ```

   c. LDAP Admin bind DN for auto provision in the format **cn=<LDAPadmin_name>, dc=autoprov, dc=<company_name>, dc=<com>**

      ```
      md <domain.com> zimbraAutoProvLdapAdminBindDn <“bindDN”
      ```

      ```
      For example, “cn=admin, dc=autoprov, dc=company, dc=com”
      ```

   d. Administrator’s LDAP search bind password for auto provision.

      ```
      md <example.com> zimbraAutoProvLdapAdminBindPassword
      <password>
      ```

   e. (Optional) Search template to use when searching for users to auto provision.

      Note: `zimbraAutoProvLdapSearchFilter or zimbraAutoProvLdapBindDn` MUST be configured for LAZY mode.

      Example: using LDAP search filter:

      ```
      md <domain.com> zimbraAutoProvLdapSearchFilter
      <“placeholder”>
      ```

      Refer to Table 21 on page 180 for supported <%placeholders>.

f. LDAP search base for auto provision. This is the location in the directory from which the LDAP search begins. This is used with `zimbraAutoProvLdapSearchFilter`. If this is not set, the LDAP directory root, **rootDSE,** is the starting point.

```
md <domain.com> zimbraAutoProvLdapSearchBase <“location”
```

```
For example, “dc=autoprov,dc=company,dc-com”
```

g. (Optional) Define the LDAP external DN template for account provisioning.

```
md <domain.com> zimbraAutoProvLdapBindDn
“uid=%<placeholder1>, %<placeholder2>”
```

Refer to Table 21 on page 180 for supported <%placeholders>.

5. (Optional). Identify the attribute name on the external entry that contains the local part of the account name to be provisioned in ZCS. If this is not specified, the local part of the account name is the principal user used to authenticate to ZCS.

```
md <domain.com> zimbraAutoProvAccountNameMap < value>
```

6. (Optional). Map the attribute values from the external entry to the ZCS account attributes. If this is not set up, no attributes from the external directory are populated in the ZCS directory. Value is in the form of {external attribute}={zimbra attribute}.

   To map the **sn** value on the external entry to **displayName** on the Zimbra account and map description value on the external entry to description on the ZCS account, type as

```
md <domain.com> +zimbraAutoProvAttrMap sn=displayName
+zimbraAutoProvAttrMap description=description
```

7. (Optional) If you want to send a **Welcome** email to new accounts, enter the *from* address of the originator.

```
md <domain.com> zimbraAutoProvNotificationFromAddress
<name@domain.com>
```

8. Exit zmprov, type

```
exit.
```

Manual Mode Configuration

CLI: Use the Manual Mode setting to disable auto provisioning with an external LDAP server.

1. Log in to the ZCS server as zimbra and type `zmprov` at the command prompt.

2. Enable MANUAL mode,

```
md <domain.com> zimbraAutoProvMode MANUAL
```

Managing Resources

A resource is a location or equipment that can be scheduled for a meeting. Each meeting room location and other non-location specific resources such as AV equipment is set up as a resource account. The **Addresses> Resources** section in the Administration Console shows all resources that are configured for Zimbra Collaboration.

User accounts with the Calendar feature can select these resources for their meetings. The resource accounts automatically accept or reject invitations based on availability.

Administrators do not need to monitor these mailboxes on a regular basis. The contents of the resource mailboxes are purged according to the mail purge policies.

A Resource Wizard guides you through the resource configuration. You can configure the account with the following details about the resource:

- Type of resource, either location or equipment
- Scheduling policy
- Forwarding address to receive a copy of the invite
- Description of the resource
- Contact information, which can be a person to contact if there are issues
- Location information, including room name, specific building location including building and address, and room capacity
- Customize auto response message and signatures to be used in the reply email messages

When you create a resource account, a directory account is created in the LDAP server.

To schedule a resource, users invite the equipment resource and/or location to a meeting. When they select the resource, they can view the description of the resource, contact information and free/busy status for the resource, if these are set up.

When the meeting invite is sent, an email is sent to the resource account, and, based on the scheduling policy, if the resource is free the meeting is automatically entered in the resource’s calendar and the resource is shown as Busy.

Set Up the Scheduling Policy

The scheduling policy establishes how the resource’s calendar is maintained. The following resource scheduling values can be set up:

- **Auto decline all recurring appointments**. This value is enabled when the resource can be scheduled for only one meeting at a time. No recurring appointments can be scheduled for this resource.

- **Auto accept if available, auto-decline on conflict**. When this option is selected, the resource account automatically accepts appointments unless the resource is already scheduled. The free/busy times can be viewed. You can modify the auto-decline rule to accept some meetings that conflict.
- **Manual accept, auto decline on conflict**. When this option is selected, the resource account automatically declines all appointments that conflict. Appointment requests that do not conflict are marked as tentative in the resource calendar and must be manually accepted. If you set this up, configure the forwarding address so a copy of the invite is sent to the account that can manually accept the invitation. You can modify the auto-decline rule to accept some meetings that conflict.
- **Auto accept always**. The resource account automatically accepts all appointments that are scheduled. In this case, free/busy information is not maintained, thus more than one meeting could schedule the resource at the same time. Because the resource always accepts the invitation, the suggested use for this policy would be for a frequently used location off premises that you want the location address to be included in the invite to attendees.
- **No auto accept or decline**. The resource account is manually managed. A delegated user must log into the resource account and accept or decline all requests.

Conflict Rules For accounts that include the auto decline on conflict value, you can set up a threshold, either as a number of conflicts or as a percentage of all the recurring appointments to partially accept recurring appointments. **Maximum allowed number of conflicts** and/or **Maximum allowed percent of conflicts** are configured to allow a recurring resource to be scheduled even if it is not available for all the requested recurring appointment dates.

The resource accepts appointments even if there are conflicts until either the number of conflicts reaches the maximum allowed or the maximum percentage of conflicts allowed. In order for partial acceptance of a series to work, both fields must be set to nonzero values.

Manage Resource Accounts

You can log on to the resource account and set preferences for the resource. The **Resource Accounts Preference>Calendar** can be configured to let users manage the Resource's Calendar. You can configure the following options to manage the resource.

- An address to forward invites. If the forwarding address was set up when the account was provisioned, you can change the address
- Who can use this resource. In the Permissions section, Invites, select **Allow only the following internal users to invite me to meetings** and add the appropriate users' email addresses to the list.

You can share the resource calendar with a user and give the user Manager rights. Users delegated as Manager have full administrative rights for that calendar. They can view, edit, add, remove, accept or decline the invites.

13 Managing User Accounts

Topics in this chapter:

- Status of User Accounts, next.
- Deleting an Account, on page 188.
- Viewing an Accounts Mailbox, on page 188.
- Using an Email Alias, on page 188.
- Working with Distribution Lists, on page 189.
- Using Dynamic Distribution Lists, on page 191.

Status of User Accounts

Admin Console: The status of an account determines whether a user can log in and receive mail. The account status is displayed on the **Accounts Content** pane of the Administration Console.

Table 22: Status—User Accounts

Status	Description
Active	Normal state for mailbox account. Mail is delivered and users can log in to the client interface.
Maintenance	Logging is disabled and any mail addressed to this account is queued at the MTA. Note that this state is automatically set for the account during a backup or when importing/exporting/ restoring the account.
Pending	Assignment for account when it is created but not yet ready to become active. While pending, the login is disabled and messages are bounced.
Locked	User cannot log in but mail continues to be delivered to the account. The locked state can be set if you suspect that a mail account has been compromised (used in an unauthorized manner).

Table 22: Status—User Accounts (Continued)

Closed	Login is disabled and messaged are bounced. This status is used to soft-delete the account before deleting it from the server. A closed acocunt does not change the account license.
LockOut	The automatic state that occurs if the user attempts to log in with incorrect password. A LockOut cannot be administratively assigned but will occur after the number of user attempts exceeds the configured number of attempts allowed. The duration of the lockout is also configurable. The administrator can remove the locked out status at any time.

Deleting an Account

Admin Console: You can delete accounts from the Administration Console. This removes the account from the server, deletes the messages in the message store, and changes the number of accounts used against your license.

Before you delete an account, run a full backup of that account to save the account information. See also the Backup and Restore chapter.

Viewing an Accounts Mailbox

You can view a selected account's mailbox content, including all folders, calendar entries, and tags from the Administration Console.

Admin Console: Select an account and from the gear icon, select **View Mail**. The user's ZWC account opens in a new browser window.

This feature can be used to assist users who are having trouble with their mail account as you and the account user can be logged on to the account at the same time.

Any View Mail action to access an account is logged to the *audit.log* file.

Using an Email Alias

An email alias is an email address that redirects all mail to a specified mail account. An alias is not an email account. Each account can have unlimited numbers of aliases.

When you select Aliases from the Manage Aliases navigation pane, all aliases that are configured are displayed in the content pane. You can create an alias, view the account information for a specific alias, move the alias from one account to another, and delete the alias.

Working with Distribution Lists

A distribution list is a group of email addresses contained in a list with a common email address. When users send to a distribution list, they are sending the message to everyone whose address is included in the list. The address line displays the distribution list address; the individual recipient addresses cannot be viewed.

You can create distribution lists that require an administrator to manage the member list and you can create dynamic distribution lists that automatically manages adding and deleting members in the list. For more information about dynamic distribution lists, see Using Dynamic Distribution Lists on page 191.

You can see which distribution lists a user is a member of from the user's account Member of page. When a Zimbra user's email address is added to a distribution list, the user's account Member Of page is updated with the distribution list name. When a distribution list is deleted, the distribution list name is automatically removed from the account's Member Of page.

Setting Subscription Policies for Distribution Lists

Subscription policies can be set up to manage a distribution list's membership. Owners of the list manage the subscription policy from the Properties page of a distribution list.

Distribution Option	Description
New Subscription Requests	• **Automatically accept**. Membership is open to anyone who subscribes. • **Require list owner approval.** To subscribe, users send an email to the owner of the distribution list and the owner replies to this email request. • **Automatically reject.** No one can be added to this distribution list.
Unsubscription Requests	• **Automatically accept**. Anyone can remove their name from the list. • **Require list owner approval** To be removed from the distribution list, users send an email to the owner. The owner must accept the email request to remove the name. • **Automatically reject.** Users cannot remove themselves from the list.

Management Options for Owners of Distribution Lists

You can add owners to distribution lists and they manage the list from their ZWC account's Address Book, Distribution List folder. Owners of a list can right click a distribution list and click the **Edit Group** link to edit a list.

Besides adding and deleting members, distribution list properties that owners can configure include:

- Marking the list as private so it is hidden in the Global Address List
- Managing who can send messages to the list
- Setting a member subscription policy
- Adding additional owners

Creating a Distribution List

Use steps in this section to create a distribution list:

Admin Console: **Home**> **Manage**> **Distribution Lists.**

1. At the **Gear** icon, click **New**.
2. On the **Members** page, add the distribution list name. Do not use spaces. The other fields are optional.
3. Find members to add to the distribution list in the right column. Select the members to add and click **Add Selected**. If you want to add all addresses on the page, click **Add This Page**. If you want to add members that are not in the company list, in the **Or enter addresses below** section, type a complete mail address.
4. Click **Next** to configure the **Properties** page.

Distribution Properties Options	Description
Can receive mail	Enabled by default. If this distribution list should not receive mail select this box.
Hide in GAL	Enable to create distribution lists that do not display in the Global Address List (GAL). You can use this feature to limit the exposure of the distribution list to only those that know the address.
Mail Server	This is set to auto by default. To select a specific mail server, uncheck **auto** and select a specific server from the list.
Dynamic Group	If you check this box, the **Member URL** field displays and you create a dynamic distribution list. See Create Dynamic Distribution Lists on page 192.
New Subscription Requests	Select from • Automatically accept • Require list owner approval • Automatically reject

Distribution Properties Options	Description
Unsubscription Requests	Select from • Automatically accept • Require list owner approval • Automatically reject.

5. In the **Members Of** page, select distribution lists that should be direct or indirect members of the list.

6. If the distribution list should have alias, create it.

7. If this distribution list can be managed by other users, enter these email addresses in the **Owners** page.

8. Set how messages received to the distribution list should be replied to.

9. Click **Finish**. The distribution list is enabled and the URL is created.

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Enabling View of Distribution List Members for AD Accounts

To view Active Directory distribution list members in messages or in the address book, the GAL group handler for Active Directory must be configured in the ZCS GALsync account for each Active Directory.

CLI: Use steps in this section to update the GALsync account for each Active Directory.This configuration requires that you know the GALsync account name and all data sources on that GALsync account.

1. Display the Zimbra ID of the GAL sync account:

   ```
   zmprov gd {domain} zimbraGalAccountId
   ```

   To find the name:

   ```
   zmprov ga {zimbraId-of-the-GAL-sync-account} | grep "# name"
   ```

2. Display data sources for the GALsync account:

   ```
   zmprov gds {gal-sync-account-name-for-the-domain}
   ```

3. Enable the group handler for the Active Directory:

   ```
   zmprov mds {gal-sync-account-name-for-the-domain} {AD-data-
   source-name} zimbraGalLdapGroupHandlerClass
   com.zimbra.cs.gal.ADGalGroupHandler
   ```

Using Dynamic Distribution Lists

Dynamic distribution lists automatically manage the membership. Users are added and removed from the distribution list automatically. When you create a dynamic distribution list, a member URL is specified. This member URL is used to identify who should be members of the list. You can view this URL from the Administration Console distribution list's Properties page.

You can create dynamic distribution lists from the Administration Console or from the CLI. In the URL, you specify specific object classes that identifies the type of users to be added to the dynamic distribution list. For example, you can configure a dynamic distribution list with the object class= zimbraAccount. In this case, when accounts are provisioned or accounts are deleted, the dynamic distribution list is updated.

You can create dynamic distribution lists for all mobile users or POP/IMAP users.

You can modify a distribution list to change the filter rules. When you modify a distribution list, the members in the list are changed to reflect the new rule.

Create Dynamic Distribution Lists

You can create a dynamic distribution list with the admin console or with the CLI, as described in this section.

Admin Console: **Home**> **Manage**> **Distribution Lists**.

1. In the **Gear** icon, click **New**.
2. On the **Members** page, add the dynamic distribution list name. Do not use spaces. Do not add members to the list.
3. Click **Next** to configure the **Properties** page.

Option	Description
Can receive mail	Enabled by default. If this distribution list should not receive mail select this box.
Hide in GAL	Enable to create distribution lists that do not display in the Global Address List (GAL). You can use this feature to limit the exposure of the distribution list to only those that know the address.
Mail Server	This is set to auto by default. To select a specific mail server, uncheck **auto** and select a specific server from the list.
Dynamic Group	Check this box.
Can be used in right management	Uncheck this box.

Option	Description

Member URL	The Member URL is the type of LDAP URL filter that determine which type of users are added and removed in the list.
	Type the URL for this list. In the command, **ldap:///??sub?** is the URL. You can add any combination of filters to this to create different types of dynamic distribution lists.
	Examples of type of URLs.
	All users, GAL account names, and spam/ham account list
	`ldap:/// ??sub?(objectClass=zimbraAccount)`
	Delegated administrators list
	`ldap:/// ??sub?(&(objectClass=zimbraAccount)( zimbraIsDelegatedAdminAccount=TRUE))`
	All active accounts
	`ldap:/// ??sub?(&(objectClass=zimbraAccount)( ZimbraAccountStatus=active))`
	All users with the title manager. The title is taken from the account’s **Contact Information Job Title** field. In this example, this field would be set to “Manager”.
	`ldap:/// ??sub?(&(objectClass=zimbraAccount)( title=Manager))`

New Subscription Requests	Select **Automatically reject**.
Unsubscription Requests	Select **Automatically reject**.

4. If the dynamic distribution list should have an alias, create it.
5. If this dynamic distribution list can be managed by other users, enter these email addresses in the **Owners** page.
6. If you want to set up a reply to address, enter it here. Any replies to this distribution list are sent to this address.
7. Click **Finish**. The dynamic distribution list is created.

Users are added automatically to the list based on the filter you specified. If you add or delete users, the list is updated.

Note: *If you use the CLI to modify a dynamic distribution list originally created on the Administration Console, you must set* **zimbraIsACLGroup FALSE** *for that dynamic distribution list.*

CLI: Use the `zmprov` command to manage dynamic distribution lists. In the command, **ldap:///??sub?** is the URL. You can add any combination of filters to this to create different types of dynamic distribution lists.

Creating a dynamic distribution list of all new and existing accounts

All users, GAL account names, and spam/ham account names are included. When user accounts are deleted, they are removed from the list.

```
zmprov cddl <all@domain.com> memberURL ‘ldap:///
??sub?(objectClass=zimbraAccount)’ zimbraIsACLGroup FALSE
```

Creating a COS and Assign Users

If you create COSs and assign users to the COS based on specific criteria, such as all managers, you can quickly modify a dynamic distribution list to be used for a specific COS.

Examples of creating dynamic distribution lists for specific user types.

- A dynamic distribution list that includes all users that have active accounts in a specific COS.

  ```
  zmprov cddl <allusers@domain.com> memberURL ‘ldap:///
  ??sub?(&(objectClass-zimbraAccount) (zimbraCOSId=513e02e-
  9abc-4acf-863a-6dccf38252e3) (zimbraAccountStatus=active) )’
  zimbraIsACLGroup FALSE
  ```

- A dynamic distribution list that includes all users based on job titles. To use this, the account’s Contact Information **Job Title** field must include the title. In this example it would be set to “Manager”.

  ```
  zmprov cddl <allmanagers@domain.com> memberURL ‘ldap:///
  ??sub?(&(objectClass-zimbraAccount) (zimbraCOSId=513e02e-
  9abc-4acf-863a-6dccf38252e3) (title=Manager) )’
  zimbraIsACLGroup FALSE
  ```

- A dynamic distribution list for all delegated administrators.

  ```
  zmprov cddl <alldelegatedadmins@domain.com> memberURL
  ‘ldap:///??sub?(& (objectClass-zimbraAccount)
  (zimbraCOSId=513e02e-9abc-4acf-863a-6dccf38252e3)
  (zimbraIsDelegatedADminAccount=TRUE) )’ zimbraIsACLGroup
  FALSE
  ```

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14 Delegated Administration

The global administrator can create different delegated administrator roles.

Delegated administrator roles can be as simple as having the rights to manage one or more distribution lists or reset forgotten passwords for one or more users, to having domain administration rights on one or more domains.

Two frequently used delegated administrator roles, domain administrator and distribution list administrator, are already defined. You can add administrators to these pre-defined roles with no other configuration necessary.

Topics in this chapter:

- Target Types for Granting Administrative Rights, next.
- Rights, on page 197.
- Implementing Delegated Administration, on page 199.
- Revoking Rights, on page 201.
- View Rights Granted to Administrators, on page 201.
- Predefined Delegated Administrator Role, on page 201.
- Creating Delegated Administrator Roles, on page 202.

Target Types for Granting Administrative Rights

Delegated administration provides a way to define access control limits on targets and grant rights to administrators to perform tasks on the target.

A target is a Zimbra Collaboration object on which rights can be granted. Each target is associated with a target type that identifies the type of access control entries you can grant on the target.

When selecting a target type for a target consider the following:

- Target. Which specific target are you granting rights? For example, if the target type you select is “domain”, which domain do you mean? You specify a specific domain’s name (Target Name = example.com). Access Control
  Entries (ACE) are granted on that target. An ACE is stored in an LDAP attribute on the target entry.

- Is the right you want to grant applicable to the selected target type? A right can only be applied on the relevant target type. For example, creating an account can only apply to a domain target type, and the setting passwords can only apply to accounts and calendar resources target types. If a right is granted on a target that is not applicable to the target, the grant is ignored.
- When defining rights, you need to consider the scope of targets in which granted rights are effective. For example, the right to set the password is applicable only to accounts and calendar resources, but if this right is included in the domain targets list of rights, it is effective for all accounts or calendar resource in the domain.

Target Type	Description of Target Scope
Account	An account entry (a specific user)
Calendar Resource	A calendar resource entry
COS	COS entry
Distribution List	Includes the distribution list and all distribution lists under this distribution list. If the right is applicable to accounts and calendar resources, all accounts and calendar resources that are direct or indirect members of this distribution list.
Domain	Applicable to a specific domain, not to any sub-domains. Sub-domains must be explicitly marked as targets. When domain is the target, the rights are granted for all accounts, calendar resources and distribution lists in the domain.
Config	Grants specific to global config
Global ACL	Administrator rights for all entries in a target type. For example, you could add an ACE to the Global Access Control List (ACL) that grants the right to create accounts on domains. Delegated administrator accounts that are granted this right can create accounts in all domains in the system.
Server	Server entry
Zimlet	Zimlet entry

Rights

Rights are the functions that a delegated administrator can or cannot perform on a named target. Right can be either system-defined or attribute.

System-defined rights

Types of system defined rights include:

- Preset rights (**preset**). For example, `createAccount` creates an account; `renameDomain`, renames the domain.

  Preset rights are associated with a fixed target type. For example, createAccount is a right only on a domain; renameAccount is a right on an account; see Server is a right on a server

  No other rights are required to administer that action on the target.

  Preset rights could involve accessing multiple targets. The grantee needs to have adequate rights on all pertinent targets. For example, to create an alias for an account, the grantee must have rights to add an alias to an account and to create an alias on a domain.

Attribute Right

Granting rights at the attribute level allow a delegated administrator/ administrator group to modify or view (or not modify or view) a specific attribute on a target.

Types of attributes rights include:

- Attribute (`setAttrs`) rights allow the domain administrator to modify and view an attribute value. For example, the `modifyAccount` right allows the domain administrator to modify all attributes of the account.
- Get attribute rights (`getAttrs`) let the domain administrator view an attribute value. For example, the getAccount right shows all the attributes for a user’s account.

The specific attribute being granted is configured on the target and the type of permission, read (get) or write (set), is specified.

Attribute rights can be granted in any combination of attributes to grant positive or negative rights. This lets you negate some attributes from a grant.

Combo Rights

Combo rights can be assigned to any target type and can include preset rights and attribute rights.You can use combo right to grant multiple attribute rights quickly on targets.

Negative Rights

Rights can be either positive or negative. Negative rights are rights specifically denied to a grantee.

- When a negative right is granted to an admin group, all administrators in the group are denied that right for the target and sub-targets on which the right is granted.
- When a negative right is granted to an administrator who may or may not be in an admin group, the specific administrator is denied that right for the target and sub-targets on which the right is granted.

An admin group is granted domain administrator rights, including the right to create accounts on Domain1. AdminA is in this admin group, but you want AdminA to have all domain administrator rights, except the right to create accounts. You would grant a negative **createAccount** right to AdminA on the target Domain1.

For grants on the same level, negative rights always take precedence. For example, AdminGroup1 is granted a positive right to view accounts in a domain; AdminGroup2 is granted a negative right to view accounts in the same domain. AdminA is a member in both admin groups. AdminA cannot view any account in this domain because the negative right takes precedence.

For grants on different levels, the most specific grant takes precedence. For example, AdminA is granted the negative right to view accounts in GroupDistributionList1, which User1 is a member. AdminA is also granted the positive right to view account directly on User1’s account. In this case, AdminA can view User1’s account as the grant on the account target is more specific than the grant on the distribution list.

Using the Rights List

System rights are listed and described in the Rights folder in the Administration Console Overview pane. You can use the Rights folder to help you define which system-defined rights to grant to delegated administrators. This folder displays the name of the right, the target types associated with that right, the right type and a brief description.

When you select a right on the page and click on it, another page displays more information:

- For combo rights, a list of the rights associated with the combo right are listed.
- For the other system rights, a list of attributes associated with the right are listed

CLI: Viewing Combo Rights

You can use `zmprov` commands to view combo rights.

- Direct sub rights of a combo right, type as `zmprov gr adminConsoleDLRights`
- Second level sub-rights of the combo, type as `zmprov gr adminConsoleDLRights -e`

CLI: Viewing System Defined Rights Lists

You can use `zmprov` commands to view system defined rights for a specific topic:

To View This	Use This `zmprov` Command
Account	`zmprov gar -t account`
Calendar Resources	`zmprov gar -t calresource`
COS	`zmprov gar -t cos`
Distribution List [a]	`zmprov gar -t dl`
Domain	`zmprov gar -t domain`
Global Config [b]	`zmprov gar -t config`
Global Grant [c]	`zmprov gar -t global`
Server	`zmprov gar -t server`
Zimlets	`zmprov gar -t zimlet`

[a] All rights for account and calendar resources can also be granted on distribution list targets. When these rights are granted on a distribution list, the ACEs apply the right to all direct or indirect account or calendar resource members of the distribution list.

[b] All rights for accounts and calendar resources can also be granted on domain targets.
All rights for distribution list can also be granted on domain targets.
When rights are granted on a domain, the ACEs apply the right to all direct or indirect account calendar resources, and members of the distribution list in the domain.

[c] All rights for all other targets can also be granted on the global targets. When any rights are granted on a global grant entry, the ACEs apply the right to all entries on the system. For example, if you grant a createAccount (which is a domain right) to AdminA on the global grant entry, AdminA can create accounts in all domains on the system.

Implementing Delegated Administration

Before you create delegated administrators and grant rights, define the role and which rights to assign to the targets the administrator will manage.

For more efficient management of delegated administrators, create administrator groups and add individual administrator accounts to the group. An administrator group allows you to create role-based access control. Administrators with the same or almost the same responsibilities can be grouped into an admin group.

Delegated administration rights can be set up in one of the following methods:

- Create an administrator or an administrator group and grant rights to the account using the Administrator Wizard.

- Configure grants on existing administrator accounts. Add new rights or modify rights to an existing delegated administrator or administrator group account.
- Add, modify and delete rights directly in a target's Access Control List page.

Administrator Groups and Administrators

Administrator and group administrator accounts are created in the Administration Console.

Use the administration wizard to

1. Create the create either an Admin Group or an Admin Account.
   - **Admin Groups** are distribution lists (DL) that have Admin Group enabled, which flags it as a delegated administrator DL. After the admin group administrator is created and configured with rights and admin views, you add administrator user accounts to the admin group.
   - **Admin Account** is a user account that has Administrator enabled on the account.
2. Configure the admin views for the account. You select the views from the Directly Assigned Admin views list. An admin view represent the items the delegated administrator sees when logged on to the Administration Console.

   A directly assigned admin view is the view set on the admin account. An inherited admin view is the view set on the admin group the account belongs to.
3. **Configure the Grants.** The Grants dialog displays a list the grants required to display the items you selected in the Directly Assigned Views column. You can accept these rights and add additional rights, skip this page to not configure these rights, or click **Finish** to accept these rights and quit the wizard.

Configure Grants on Administrator Accounts or Admin Groups

You can manage the rights granted to an administrator or an administrator group through the Configure Grants link on the accounts toolbar. When you click **Configure Grant** on the Manage Accounts Addresses toolbar, the Content pane shows a list of direct and inherited grants. You can grant rights, modify rights or delete rights on existing administrator accounts.

Grant ACLs to a Target

When you want to add a specific grantee or specific rights on a target you can edit the target directly. Each target has an ACL page which lists the granted ACLs. You can add, edit or delete the target's grants. The administration account (grantee) is updated to reflect the change.

Revoking Rights

Global administrators can revoke any rights granted to an administrator.

Admin Console: Open the administrator account and click **Configure Grants**.

1. Select the right to revoke and click **Delete**.
2. When the dialog asks if are sure, click **Yes**.

Delegated administrators can revoke rights if the right was created with the **Can Grant the right to other admins** enabled.

Temporarily Revoke Delegated Admin Rights

To temporarily revoke rights to a delegated administrator account, you can edit the administrator account and remove the check next to the Administrator field. The ACLs are not removed from the account.

View Rights Granted to Administrators

The View Rights link from an admin account or admin group account toolbar displays the granted rights, readable attributes and modifiable attributes associated with a specific target. Click on the tabs to view rights for different targets.

Predefined Delegated Administrator Role

The following preconfigured administrator groups are created automatically. You can assign administrator accounts to these groups.

Domain Administration Group

The `zimbradomainadmins delegated` admin group grants all the rights necessary to support Zimbra Collaboration domain administration for accounts, aliases, distribution lists and resources.

Administrators who are part of the `zimbradomainadmins` group can create and manage accounts including setting the account quota, aliases, distribution lists, and resources accounts in their domain.

When domain administrators log onto the Administration Console, only the functions they are authorized to manage are displayed on the console’s Navigation pane.

Create Link from Zimbra Web Client Account to Admin Console

For domain administrators, all tasks are performed from the Administration Console. To facilitate easy log in, when a delegated administrator account is created, their ZWC account can have a link to the Administration Console.

CLI: The link is created from the zmprov CLI

- `zmprov md <server. domainexample.com> zimbraWebClientAdminReference <https:// server.domainexample.com:7071/`

Distribution List Administration Group

CLI: The `zimbradladmin delegated` admin group grants all the rights necessary to log on to the Administration Console and manage distribution lists.

Administrators who are part of this group can

- View the account list
- Create new distribution lists and delete distribution lists
- Add, edit and remove members in a distribution list

Creating Delegated Administrator Roles

Manage multiple domains

To have one domain administrator manage more than one domain, you assign the rights to manage individual domains to the administrator account or administrator group.

For example, to set up domanadministrator1@example.com to manage domainexample1 and domainexample2.com. Create a new administrator account on one of the domains to be managed.

1. Create the administrator account on one of the domains to be managed (domainexample1.com)
2. Select the views that domain administrators need to manage a domain. When the views are selected, the rights associated with these views automatically display on the Configure the Grants dialog.
3. Configure the grants for this domain if they are different from the grants associated with the views you select.
4. To add another domain to be managed (domainexample2.com).
    - On the Configure Grants page, click **Add**
    - Select the target type as **domain**
    - Enter the target's domain name (domainexample2.com)
    - For Right Type, select System Defined Right
    - For Right Name type, adminConsoleAccountRights. **Is Positive Right** should be selected.
    - Click **Add and More**
    - The **Add ACE** page displays again and the Right Name field is empty. Type, **adminConsoleDLRights** and click **Add and More.**

- Continue to add the following right names:
  - **adminConsoleAliasRights**
  - **adminConsoleResourceRights**
  - **adminConsoleSavedSearchRights**
  - **adminConsoleDomainRights**
- After the last right, click **Add and Finish**. The Configure the Grants dialog displays these rights associated with the target domain. If you are adding another domain to manage, click **Add and More**. Repeat Step 4. If not, click **Finish**.

Manage Distribution Lists

To assign a user to manage a distribution list, you create a distribution list and enable Admin Group, select the view, grant the distribution list rights, add the user to the list and make that user an administrator.

1. Create a new distribution list:
   - **Check Admin Group**
   - Add the user who will be the administrator as a member of the DL.
   - **Go to the Admin Views page and check Distribution List View** so the admin can view the distribution list.
   - Click **Save**.
2. In the **Configure Grants** page, add the following rights.

Right Name	**Target Type**	**Target**	**Right Type**
The following right let the administrator manage distribution lists.			
`listdistributionlist`	dl	DL email address	SD Right
`adddistributionlistalias`	dl	DL email address	SD Right
`adddistributionlistmember`	dl	DL email address	SD Right
`modifyDistributionlist`	dl	DL email address	SD Right
`getdistributionlistmembership`	dl	DL email address	SD Right
`RemoveDistributionlistmember`	dl	DL email address	SD Right
This domain right displays user account list that the administrator can select from to add to a distribution list.			
`listAccount`	domain	DL email address	SD Right

Change Passwords

To create delegated administrators who only change passwords, you create the admin or admin group, select the views and grant the set Account Password combo right.

1. Select the following views
   - **Account List** view to be able to select accounts to change passwords
   - **Alias List** view to be able to find users who use an alias instead of account name.
2. The Configure the Grants page displays recommended grants for the views you have chosen. For Change Password rights, do not configure these grants. Select **Skip**. Click **Add** to add the following right:

Right Name	Target Type	Target	Right Type
setAccountPassword	domain	domain address	SD Right

View Mail Access Right

View Mail access right can be granted on accounts, domains, and distribution lists.

Right Name	Target Type	Target	Right Type
adminLoginAs	**Either**: account domain dl	account, domain, or distribution list address	SD Right*

*To deny the View Mail right on the target, check the box for **Is Negative Right (Deny)**

To prevent administrators from viewing an account with a domain or distribution list, assign the **Is Negative Right** to the account.

Manage Class of Service Assigned to Users

You can expand the domain administrator role to be able to view and change the class of service (COS) assigned to a user. To add the rights to manage the COS for a domain, add the following rights to the domain administrator account or domain administrator admin group.

Add the System Defined Rights to each COS in the domain.

Right Name	Target Type	Target	Right Type
listCos	cos	COS name	SD Right
getCos	cos	COS name	SD Right
assignCos	cos	COS name	SD Right
This domain right displays the COS information in the user account's General Information page.			
zimbraCOSId	domain	domain address	Attribute Right Verb: **Write** AR Target: **account**

Manage Cross Mailbox Search

This role creates a delegated administrator role that can run the Search Mail tool to search mail archives or live mail for accounts. This also allows the administrator to create, abort, delete, purge or get status of a cross mailbox search request.

Note: *The Archiving and Discovery feature must be installed for this feature to work.*

Right Name	Target Type	Target	Right Type
`adminConsoleCrossMailboxSearchRights`	(combo)	server name where cross mailbox searches can be run	SD Right

For full functionality, this role includes the ability to create new accounts so that the admin can create the target mailbox to receive the search results. If you do not want this role to have the ability to create accounts, grant the following negative right as well.

Right Name	Target Type	Target	Right Type
`CreateAccount`	domain	domain address	SD Right*

*To deny the Create Account right on the target, check the box for **Is Negative Right (Deny)**

If you want this admin to also view the target mailbox with the results of the cross mailbox search, grant the right to view that mailbox only.

Right Name	Target Type	Target	Right Type
`adminLoginAs`	account	cross mailbox search target account name	SD Right*

Manage Zimlets

This role creates a delegated administrator role that can create, deploy and view Zimlets.

Right Name	Target Type	Target	Right Type
`adminConsoleZimletRights`	server domain	server name or domain address	SD Right
`adminConsoleAccountsZimletsTabRights`	server domain	server name or domain address	SD Right

Manage Resources

This role creates a delegated administrator that can create and manage resources.

Right Name	Target Type	Target	Right Type
`adminConsoleResourceRights`	combo	server name or domain address	SD Right

Access to the Saved Searches

This role creates a delegated administrator that can access all the searches saved in the Administration Console Navigation pane, Search section.

Right Name	Target Type	Target	Right Type
`adminConsoleSavedSearchRights`	combo	server name or domain address	SD Right

Access to the Server Status Pages

This role creates a delegated administrator that can access the Server Status page. In addition to granting this right, you must also select the Admin View, **Global Server Status View**.

Right Name	Target Type	Target	Right Type
`adminConsoleServerStatusRights`	global		SD Right

Note: *Accounts that are configured as global administrator accounts cannot be granted ACLs. Global administrator accounts automatically have full rights on* Zimbra Collaboration*. If an ACL is added to a global administrator account, it is ignored. If a delegated administrator account is changed to a global administrator account, any ACLs associated with the account are ignored.*

15 Monitoring ZCS Servers

The Zimbra Collaboration (Zimbra Collaboration) includes the following to help you monitor the Zimbra servers, usage, and mail flow:

- Zimbra Logger package to capture and display server statistics and server status, and to create nightly reports
- Mailbox quota monitoring
- MTA mail queue monitoring
- Log files

Also, selected error messages generate SNMP traps, which can be monitored using an SNMP tool.

Topics in this chapter:

Note: *Checking the overall health of the system as a whole is beyond the scope of this document.*

Zimbra Logger

The Logger includes tools for syslog aggregation and reporting. Installing the Logger is optional, but if you do not install it, server statistics and server status information are not captured.

In environments with more than one Zimbra Collaboration server, Logger is enabled on one mailbox server only. This server is designated as the monitor host. The Zimbra Collaboration monitor host is responsible for checking the status of all the other Zimbra Collaboration servers and presenting this information on the Zimbra administration console. Real-time service status, MTA, spam, virus traffic and performance statistics can be displayed. The Logger creates a daily report about mail activity, such as the number of messages, average delivery delay, and errors generated.

Note: *In a multi-server installation, you must set up the syslog configuration files on each server to enable Logger to display the server statistics on the Administration Console, and you must enable the Logger host. If you did not configure this when you installed Zimbra Collaboration, do so now.*

Enabling Server Statistics

Enable server statistics to show both system-wide and server specific data about the inbound message volume, inbound message count, anti-spam/antivirus activity and disk usage for messages processed in the last 48 hours, 30 days, 60 days, and the last year.

1. On each server, as root, type `/opt/zimbra/libexec/zmsyslogsetup`. This enables the server to display statistics.
2. On the logger monitor host, you must enable **syslog** to log statistics from remote machines.
   a. Edit the /etc/sysconfig/syslog file, add `-r` to the SYSLOGD_OPTIONS setting, `SYSLOGD_options=”-r -m 0”`
   b. Stop the syslog daemon. Type `/etc/init.d/syslogd stop`.
   c. Start the syslog daemon. Type `/etc/init.d/syslogd start`.

Note: *These steps are not necessary for a single-node installation.*

Reviewing Server Status

Admin Console: The **Monitor> Server Status** page lists all servers and services, their status, and when the server status was last checked. The servers include the MTA, LDAP, and mailbox server. The services include MTA, LDAP, Mailbox, SNMP, Anti-Spam, Anti-Virus, Spell checker, and Logger.

To start a server if it is not running, use the `zmcontrol` CLI command. You can stop and start services from the Administration Console,

Enabling or Disabling Server Services

Admin Console: Server services are enabled or disabled from the **Configure>S ervers** page. Select **Services** in the Navigation pane and select to enable or disable services.

Viewing Server Performance Statistics

If the Logger package is installed on a Zimbra mailbox server, Server Statistics shows bar graphs of the message count, message volume, anti-spam, and anti-virus activity. The information is displayed for the last 48 hours, and 30 days, 60 days, and 365 days.

When Server Statistics is selected in the Navigation pane, consolidated statistics for all mailbox servers is displayed. Selecting a specific server in the expanded view shows statistics for that server only. Server specific information also includes disk usage, session information, and mailbox quota details.

The following display system-wide information:

- **Message Count**—counts message transactions. A transaction is defined as either the SMTP receipt of a message per person (by Postfix) or a LMTP delivery of it (by mailboxd) per person. For example, if a message is sent to three people, six transactions are displayed. Three for SMTP to Postfix and three for LMTP to mailboxd. The message count is increased by six.
- **Message Volume—**displays the aggregate size in bytes of transactions sent and received per hour and per day. Graphs show the total inbound data by volume in bytes.
- **Anti-Spam/Anti-Virus Activity**—displays the number of messages that were checked for spam or viruses and the number of messages that were tagged as spam or deemed to contain a virus. The AS/AV count is increased by one per message scanned. One message sent to three people counts as only one message processed by AS/AV.

  The Message Count and the Anti-spam/Anti-virus Activity graphs display a different message count because:

  - Outbound messages may not go through the Amavisd filter, as the system architecture might not require outbound messages to be checked.
  - Messages are received and checked by Amavisd for spam and viruses before being delivered to all recipients in the message. The message count shows the number of recipients who received messages.

Server-specific statistics also include the following details:

- **Disk**—for a selected server displays the disk used and the disk space available. The information is displayed for the last hour, day, month, and year.
- **Session**—displays information about the active Web client, administrator and IMAP sessions. You can see how many active sessions are opened, who is logged on, when the session was created and the last time the session was accessed.
- **Mailbox Quota**—displays information about each account sorted by mailbox size in descending order. See Monitoring Mailbox Quotas.

Configuring Logger Mail Reports

The Logger generates a report about mail activity daily at 11:30 p.m. and sends it to the administrator's email address.

CLI: You can configure the number of accounts to include in the report. The default is 25 sender and 25 recipient accounts.

- Changing the number of recipients to add to the report:

  ```
  zmlocalconfig -e zimbra_mtareport_max_recipients=<number>
  ```

- Changing the number of senders to add to the report:

  ```
  zmlocalconfig -e zimbra_mtareport_max_senders=<number>
  ```

Configuring Disk Space Notifications

You should regularly review your disk capacity and when disks are getting full, take preventative measures to maintain service. A warning alert email notification is sent to the administrator account when disk space is low. The default is to send a warning alert when the threshold reaches 85% and a critical alert when the threshold reaches 95%.

CLI: You can change these values. Use `zmlocalconfig` to configure the disk warning thresholds.

- Warning alerts: `zmdisklog_warn_threshold`
- Critical alert: `zmdisklog_critical_threshold`

When starting services with zmcontrol, if the threshold is exceeded, a warning is displayed before the services are started. You should clean up your disk to free up space.

Monitoring Servers

The Zimbra Collaboration server collects many performance-related statistics that can help you diagnose problems and load issues.

Admin Console: The **Monitor> Advanced Statistics** page includes advanced graphing options that lets you generate various charts based on statistical information for the CPU, IO, mailboxd, MTA queue, MySQL and other components.

To chart the graphics in Advanced Statistics, select one of these groups and then select from the list of specific counters for the type of information to display.

The information covers a wide array of data:

- **cpu.csv**: CPU utilization. This group contains counters to keep track of CPU usage (iowait, idle, system, user, time etc.). CPU information can be tracked both at the server level and the process level.
- **df.csv:** Captures disk usage. Disk utilization is tracked for each disk partition.
- **fd.csv**: file descriptor count. Keeps track of system file descriptor usage over time. This is primarily used to track down “out-of-file descriptor” errors.
- **mailboxd.csv**: Zimbra Collaboration server and JVM statistics. Mailboxd stores almost all of its statistics here. Interesting numbers to keep track of are heap_used, heap_free, imap_conn, soap_sessions, pop_conn, db_conn_count.
- **mtaqueue.csv**: Postfix queue. This measures the mail queue size in number of messages and the size in bytes.
- **proc.csv**: Process statistics for Zimbra processes. For example mailboxd/java, MySQL, OpenLDAP, etc.)
- **soap.csv**: SOAP request processing time.
- **threads.csv**: JVM thread counts. Counts the number of threads with a common name prefix.
- **vm.csv**: Linux VM statistics (from the vmstat command).
- **io-x.csv** and **io.csv** store data from the iostat(1) command (io-x.csv with iostat -x).

Configuring Denial of Service Filter Parameters

The denial-of-service filter (DoSFilter) limits exposure to requests flooding. The DoSFilter throttles clients sending a large number of requests over a short period of time.

The DoSFilter is enabled by default on ZCS and is applied to all requests. You can modify the configuration to accommodate your specific environmental needs. Disabling the DoSFilter is not recommended.

Identifying False Positives

Sometimes Zimbra Connector for Outlook (ZCO), mobile ActiveSync clients, or running some zmprov commands trigger the DoSFilter. When this happens, the Zimbra mailbox service is unavailable. You can review the following logs to see if the DoSFilter was applied.

- `/opt/zimbra/log/sync.log`.

Example of a log entry showing the DoSFilter

```
2013-01-15 15:52:20,426 WARN [qtp1635701107-91:https://x.x.x.x/
Microsoft-Server-
ActiveSync?User=zsupport2&DeviceId=Appl5ddddd3NR&DeviceType=iPhone&
Cmd=FolderSync][name=zsupport2@domain.com;mid=64;ip=71.194.89.54;Cm
d=FolderSync;DeviceID=Appl5K0113UN3NR;Version=12.1;] sync - Service
exception com.zimbra.common.service.ServiceException: error while
proxying request to target server: HTTP/1.1 503 Service Unavailable
ExceptionId:qtp1635701107-91:https://10.10.0.54:443/Microsoft-
Server-
ActiveSync?User=zsupport2&DeviceId=Appl5K0113UN3NR&DeviceType=iPhon
e&Cmd=FolderSync:1358286740426:c5ca7f36bb0a038f
Code:service.PROXY_ERROR Arg:(url, STR,"http://mail.domain.com:80/
service/soap/SyncRequest"
```

- `/opt/zimbra/log/zmmailboxd.out`

```
2013-01-15 15:57:32.537:WARN:oejs.DoSFilter:DOS
ALERT:ip=127.0.1.1,session=null,user=null
```

Customizing DoSFilter Configuration

The following attributes are used with zmprov to configure the DoSFilter. These attributes can be configured as global settings and as server settings. If these attributes are set in the server, the server settings override the global settings.

You can modify these settings, but the default configuration is recommended.

Attribute	Description
DoSFilter Delay `zimbraHttpDosFilterDelay-Millis`	The delay given to all requests over the rate limit before they are considered. The default is -1. ■ -1 = Reject request ■ 0 = No delay ■ Any other value = Delay is in ms Enter as `zmprov mcf zimbraHttpDosFilterDelayMillis [x]`
DoSFilter Maximum Requests Per Second zimbraHttpDosFilterMaxRequestsPerSec	The maximum number of requests from a connection per second. Requests in excess of this are throttled. The default is 30 and the minimum is 1. Enter as `zmprov mcf zimbraHttpDosFilterMaxRequestsPerSec [X]`

Attribute	Description
DoSFilter IP Addresses Whitelist zmprov mcf zimbraHttpThrottleSafeIPs [x.x.x.x,192.168.x.x]	IP addresses to ignore when applying the DosFilter. This attribute does not have a default value, however the following loopback IPs are whitelisted by default. • 127.0.0.1 • ::1 The IP addresses should be comma separated. Enter as `zmprov mcf zimbraHttpThrottleSafeIPs [addresses]`

A mailbox server restart is required after modifying these attributes. Type

```
zmmailboxdctl restart
```

Tuning Considerations for ZCS 8.0.3 and later

- **ZCS Member Servers**: ZCS servers under the control of a single master LDAP server are automatically whitelisted by IP address. These hosts are discovered using a **GetAllServersRequest** . Type as `zmprov gas`.
- **External Provisioning Hosts/SOAP API**: External provisioning hosts can be added to the IP whitelist to ensure that the DoSFilter does not block some requests. For example, a mailbox reindex might make several calls per second that can trigger the DoSFilter.

Note: *For ZCS servers at 8.0.0 to 8.0.2, see the Denial of Service workaround located at http://www.zimbra.com/forums/announcements/60397-zcs-dosfilter-workaround-zcs-8-0-1-8-0-2-a.html.*

Working with Mail Queues

When the Zimbra MTA receives mail, it routes the mail through a series of queues to manage delivery; incoming, active, deferred, held, and corrupt.

The **incoming** message queue holds the new mail that has been received. Each message is identified with a unique file name. Messages are moved to the active queue when there is room. If there are no problems, message move through this queue very quickly.

The **active** message queue holds messages that are ready to be sent. The MTA sets a limit to the number of messages that can be in the active queue at any one time. From here, messages are moved to and from the anti-virus and anti-spam filters before being delivered to another queue.

Messages that cannot be delivered are placed in the **deferred** queue. The reasons for the delivery failures are documented in a file in the deferred queue. This queue is scanned frequently to resend the message. If the message cannot be sent after the set number of delivery attempts, the message fails. The message is bounced back to the original sender. The default for the bounce queue lifetime is five days.

The **held** message queue keeps mail that could not be processed. Messages stay in this queue until the administrator moves them. No periodic delivery attempts are made for messages in the held queue.

The **corrupt** queue stores damaged unreadable messages.

Change the Bounce Queue Lifetime

- The MTA server's bounce queue lifetime is set for five days. To change the default queue lifetime setting

  ```
  zmlocalconfig -e bounce_queue_lifetime=[#]
  ```

- To permanently have messages bounced back to the sender, instead of being sent to the deferred queue first

  ```
  zmlocalconfig -e
  zimbraLmtpPermanentFailureWhenOverQuota=TRUE
  ```

Notifying Senders of Bounced Messages

Before the bounce queue lifetime sends the message back to the sender, senders can be notified that the message they sent is in the deferred queue and has not been delivered.

Configure the following attributes to send a warning message to the sender.

- Configure the time after which the sender receives the message headers of email that is still queued.

  ```
  zmlocalconfig -c postfix_delay_warning_time=0h
  ```

- Configure the recipient of postmaster notifications with the message headers of mail that the MTA did not deliver.

  ```
  zmlocalconfig -c postfix_bounce_notice_recipient=postmaster
  ```

- Configure the list of error classes that are reported to the postmaster.

  ```
  zmlocalconfig -c postfix_notify_classes=resource,software
  ```

Note: *See Postfix documentation for details on the impact of changes to these Postfix attributes.*

You can monitor the mail queues for delivery problems from the Administration Console.

View ing Mail Queues

If you are having problems with mail delivery, you can view the mail queues from the Administration Console—**Monitor>Mail Queues** page—to see if you can fix the mail delivery problem. When you open mail queues, the content of the deferred, incoming, active, hold, and corrupt queues at that point in time can be viewed. You can view the number of messages and where they are coming from and going to.

For each queue, the Summary pane shows a summary of messages by receiver domain, origin IP, sender domain, receiver address, sender address, and for the deferred queue, by error type. You can select any of the summaries to see detailed envelope information by message in the Messages pane.

The Messages pane displays individual message envelope information for search filters selected from the Summary pane.

The following mailbox queue functions can be performed for all the messages in a queue:

- **Hold** to select a set of messages that you want to hold. Incoming, active, deferred, and corrupt messages can be moved to the Held queue. Messages stay in this queue until the administrator moves them.
- **Release** to remove all message from the Held queue. Messages are moved to the Deferred queue.
- **Requeue** all messages in the queue being viewed. Requeuing messages can be used to send messages that were deferred because of a configuration problem that has been fixed. Messages are re-evaluated and earlier penalties are forgotten.
- **Delete** all messages in the queue being viewed.

The Zimbra MTA, Postfix queue file IDs are reused. If you requeue or delete a message, note the message envelope information, not the queue ID. It is possible that when you refresh the mail queues, the queue ID could be used on a different message.

Flushing Message Queues

You can flush the server of all messages. When you click Flush on the Mail Queue toolbar, delivery is immediately attempted for all messages in the Deferred, Incoming and Active queues.

Monitoring Mailbox Quotas

Mailbox quotas apply to email messages, attachments, calendar appointments, and tasks in a user’s account. When an account quota is reached, all mail messages are rejected. Users must delete mail from their account to get below their quota limit - this includes emptying their Trash, or you can increase their quota.

Viewing Quota

You can check mailbox quotas for individual accounts from Server Statistics on the Administration Console. Mailbox Quota gives you an instant view of the following information for each account:

Admin Console: **Monitor>Server Statistics** page.

1. Select the server for which you want to view statistics.
2. In the Navigation pane, select **Mailbox Quota**. The Mailbox Quota page displays with the following information:
   - Quota column shows the mailbox quota allocated to the account. Quotas are configured either in the COS or by account.
   - Mailbox Size column shows the disk space used.
   - Quota Used column shows what percentage of quota is used.

Increase or Decrease Quota

From a COS or Account, you can configure a quota threshold that, when reached, sends a message alerting users that they are about to reach their mailbox quota.

Admin Console: **Configure>Class of Service>Advanced** page.

1. Scroll down to the Quota section.
2. Modify the quota settings.
3. Click **Save**.

Viewing MobileSync Statistics

The **MobileSync Statistics** page in the Monitor section in the admin console displays the number of currently connected ActiveSync devices that are on the Zimbra Collaboration system.

Monitoring Authentication Failures

To protect against dictionary-based and distributed attacks, you can configure the zmauditwatch. The script attempts to detect more advanced attacks by looking at where the authentication failures are coming from and how frequently they are happening for all accounts on a Zimbra mailbox server and sends an email alert to the administrator’s mailbox.

The types of authentication failures checked include:

- **IP/Account hash check**. The default is to send an email alert if 10 authenticating failures from an IP/account combination occur within a 60 second window.

- **Account check**. The default is to send an email alert if 15 authentication failures from any IP address occur within a 60 second window. This check attempts to detect a distributed hijack based attack on a single account.
- **IP check**. The default is to send an email alert if 20 authentication failures to any account occur within a 60 second window. This check attempts to detect a single host based attack across multiple accounts.
- **Total authentication failure check**. The default is to send an email alert if 1000 auth failures from any IP address to any account occurs within 60 seconds. The default should be modified to be 1% of the active accounts on the mailbox server.

The default values that trigger an email alert are changed in the following zmlocalconfig parameters:

- IP/Account value, change `zimbra_swatch_ipacct_threshold`
- Account check, `change zimbra_swatch_acct_threshold`
- IP check, change `zimbra_swatch_ip_threshold`
- Total authentication failure check, change `zimbra_swatch_total_threshold`

Configure `zimbra_swatch_notice_user` with the email address that should receive the alerts**.**

Viewing Log Files

Zimbra Collaboration logs its activities and errors to a combination of system logs through the syslog daemon as well as Zimbra specific logs on the local file system. The logs described below are the primary logs that are used for analysis and troubleshooting.

Local logs containing Zimbra activity are in the `/opt/zimbra/log` directory.

- **audit.log**. This log contains authentication activity of users and administrators and login failures. In addition, it logs admin activity to be able to track configuration changes.
- **clamd.log**. This log contains activity from the antivirus application clamd.
- **freshclam.log**. This log contains log information related to the updating of the clamd virus definitions.
- **mailbox.log**. This log is a mailboxd log4j server log containing the logs from the mailbox server. This includes the mailbox store, LMTP server, IMAP and POP servers, and Index server.
- **myslow.log**. This slow query log consists of all SQL statements from the mailbox server that took more then long_query_time seconds to execute. Note: long_query_time is defined in /opt/zimbra/conf/my.cnf.
- **spamtrain.log**. This log contains output from zmtrainsa during regularly scheduled executions from the cron.

- **sync.log**. This log contains information about Zimbra Collaboration mobile sync operations.

Other logs include:

- **/opt/zimbra/jetty/logs/**. This is where Jetty-specific activity is logged.
- **/opt/zimbra/db/data**. <hostname>.err. This is the message store database error log.
- **/opt/zimbra/logger/db/data.** <hostname>.err. This is the Logger database error log.

Zimbra Collaboration activity logged to System syslog

- **/var/log/zimbra.log.** The Zimbra syslog details the activities of the Zimbra MTA (Postfix, amavisd, antispam, antivirus), Logger, Authentication (cyrus-sasl), and Directory (OpenLDAP). By default LDAP activity is logged to Zimbra.log.

Syslog

Zimbra modifies the systems syslog daemon to capture data from the mail and local syslog facility to **/var/log/zimbra.log**. This allows syslogd to capture data from several Zimbra Collaboration components including Postfix, Amavis, ClamAV, mailboxd, zmconfigd, and logger. The SNMP module uses the data from the log file to generate traps for critical errors. The zmlogger daemon also collects a subset of the data in this file to provide statistics on the utilization of Zimbra Collaboration via the Administration Console.

By default, mailboxd is configured to log its output to **/opt/zimbra/log/mailbox.log**. You can enable mailboxd to take advantage of a centralized syslogd infrastructure by enabling the following either globally or by server

```
zmprov mcf zimbraLogToSysLog True
```

Using log4j to Configure Logging

The Zimbra Collaboration server uses `log4j`, a Java logging package as the log manager. By default, the Zimbra Collaboration server has `log4j` configured to log to the local file system. You can configure `log4j` to direct output to another location. Go to the Log4j website for information about using log4j.

ZCS does not check the log4j changes. To remove all account loggers and reloads in /opt/zimbra/conf/log4j.properties, use the **zmprov resetAllLoggers** command.

Logging Levels

The default logging level is set to include logs that are generated for INFO, WARNING, ERROR and FATAL. When problems start to occur, you can turn on the DEBUG or TRACE log levels.

To change the logging levels, edit the log4j properties, **log4j properties, log4j.logger.zimbra**.

When enabling DEBUG, you can specify a specific category to debug. For example, to see debug details for POP activity, you would type **logger.zimbra.pop=DEBUG**.

The following categories are predefined in log4j:

zimbra.account	Account operations
zimbra.acl	ACL operations
zimbra.backup	Backup and restore
zimbra.cache	Inmemory cache operations
zimbra.calendar	Calendar operations
zimbra.dav	DAV operations
zimbra.dbconn	Database connection tracing
zimbra.extensions	Server extension loading
zimbra.filter	Mail filtering
zimbra.gal	GAL operations
zimbra.imap	IMAP protocol operations
zimbra.index	Index operations
zimbra.io	Filesystem operations
zimbra.ldap	LDAP operations
zimbra.lmtp	LMTP operations (incoming mail)
zimbra.mailbox	General mailbox operations
zimbra.misc	Miscellaneous
zimbra.op	Changes to mailbox state
zimbra.pop	POP protocol operations
zimbra.redolog	Redo log operations
zimbra.security	Security events
zimbra.session	User session tracking
zimbra.smtp	SMTP operations (outgoing mail)
zimbra.soap	SOAP protocol
zimbra.sqltrace	SQL tracing
zimbra.store	Mail store disk operations
zimbra.sync	Sync client operations
zimbra.system	Startup/shutdown and other system messages
zimbra.wiki	Wiki operations
zimbra.zimlet	Zimlet operations

Changes to the log level take affect immediately.

Logging Levels

Table 23: Events

Level	Local?	Syslog	SNMP Trap	When Used
FATAL	Y	Y	Y	Designates very severe error events that the application to abort or impact a large number of users. For example, being unable to contact the MySQL database.
ERROR	Y	Y	N	Designates error events that might still allow the application to continue running or impact a single user. For example, a single mailbox having a corrupt index or being unable to delete a message from a mailbox.
WARN	Y	N	N	Designates potentially harmful situations but are usually recoverable or can be ignored. For example, user log in failed.
INFO*	Y	N	N *	Designates information messages that highlight the progress of the application, basic transaction-level logging. For example, server start-ups, mailbox creation/deletion, account creation.
DEBUG	Y	N	N	Events that would generally be useful to help a customer debug problems.

* A few non-critical messages such, as service startup messages, will generate traps.

Protocol Trace

Protocol trace is available in the following logging categories:

- zimbra.smtp
- zimbra.lmtp
- zimbra.soap
- zimbra.imap
- zimbra.imap-client
- zimbra.pop
- zimbra.pop-client

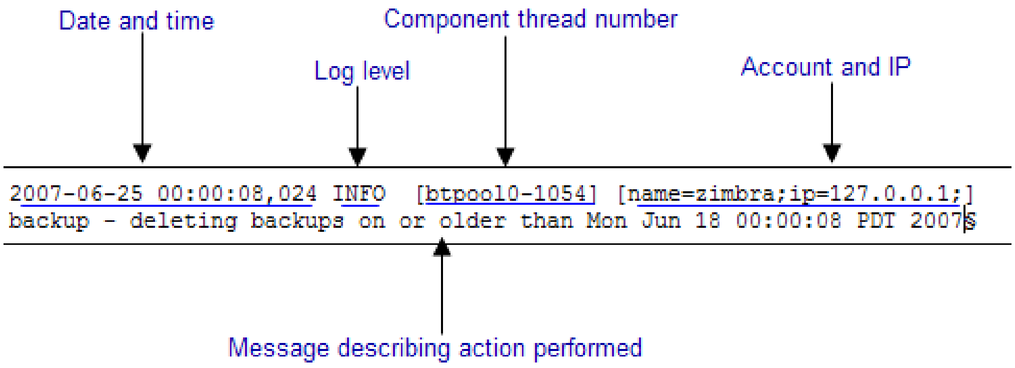
Reviewing mailbox.log Records

The mailbox.log file contains every action taken on the mailbox server, including authentication sessions, LMTP, POP3, and IMAP servers, and Index server. Review the mailbox.log to find information about the health of your server and to help identify problems.

Mailbox.log records valid and invalid login attempts, account activity such as opening email, deleting items, creating items, indexing of new mail, server activities including start and stop. The progress of an activity on the mail server is logged as INFO. If the expected results of the activity fails and errors occurs, an exception is written to the log.

You can set up logging options for a single account in order to trace account activity for one user without filling up mailbox.log with log messages for unrelated accounts. See Appendix A Command-Line Utilities, the zmprov miscellaneous section.

Reading records in the log The example below is a record showing that on June 25, 2007, the zimbra server with an IP address of 127.0.0.1 was in the process of deleting backups that were created on Monday, June 18, 2007 at 8 seconds after midnight Pacific Daylight Time (PDT) or older than that date.



```
2007-06-25 00:00:08,024 INFO  [btpool0-1054] [name=zimbra;ip=127.0.0.1;]
backup - deleting backups on or older than Mon Jun 18 00:00:08 PDT 2007$
```

Note: ***Component thread number*** *identifies which thread managed by mailboxd is performing the action logged.*

Handler Exceptions and Stack Traces

If an error occurs during the progress of an activity, a handler exception is added to the end of the log record to notify you that an event occurred during the execution of the process that disrupted the normal flow. This signals that some type of error was detected.

```
007-06-25 00:00:10,379 INFO  [btpool0-1064] [name=nriers@example.com;
mid=228;ip=72.255.38.207;ua=zimbra Desktop/0.38;] SoapEngine - handler
exception
```

Sometimes a stack trace is displayed after the exceptions notification. A stack trace reports the threads and monitors in the zimbra’s **mailboxd** service. This information aids in debugging, because the trace shows where the error occurred. The last few entries in the stack often indicate the origin of the problem. When the **caused by** descriptor is included in the log line, this is the root of the error. In the example below, the error was caused by 501, bad address syntax.

```
com.example.cs.mailbox.MailServiceException: Invalid address: Jon R
at com.example.cs.mailbox.MailServiceException.internal_SEND_FAILURE
(MailServiceException.java:412)
at com.example.cs.mailbox.MailServiceException.SEND_ABORTED_ADDRESS_
FAILURE MailServiceException.java:416)
.
.
.
at org.mortbay.thread.BoundedThreadPool$PoolThread.run(BoundedThread
Pool.java:442)
Caused by: com.example.cs.mailbox.MailSender$SafeSendFailedException
:501 Bad address syntax
; chained exception is:
com.sun.mail.smtp.SMTPAddressFailedException: 501 Bad address syntax
at com.sun.mail.smtp.SMTPTransport.rcptTo(SMTPTransport.java:1196)
at
com.sun.mail.smtp.SMTPTransport.sendMessage(SMTPTransport.java:584)
at javax.mail.Transport.send0(Transport.java:169)
at javax.mail.Transport.send(Transport.java:98)
at
com.example.cs.mailbox.MailSender.sendMessage(MailSender.java:409)
at
com.example.cs.mailbox.MailSender.sendMimeMessage(MailSender.java:26
2)
... 30 more
```

Mailbox log files

The mailbox.log files rotate daily. The mailbox log files are saved in **/opt/zimbra/log**. Previous mailbox.log file names include the date the file was made. The log without a date is the current log file. You can back up and remove these files.

Troubleshooting Mail Problems

To review the mailbox.log for errors, search for the email address or the service that is experiencing the problem. Also, search for WARN or ERROR log levels, read the text of the message. When you find the error, review the records, tracing the events that happened before the problem was recorded.

System Crashing

When your system crashes, locate the startup message and then look for errors before the startup message date. This example shows an out-of-memory error on June 17, 2007.

```
2007-06-25 01:56:18,725 INFO  [main] [] soap - Servlet SoapServlet
starting up
```

Look for errors before the startup message.

```
2007-06-17 20:11:34,194 FATAL [btpool0-3335]
[name=samd@example.com;aname=abcadmin@example.com;mid=142;ip=66.92.2
5.194;ua=zimbraConnectorForBES/5.0.207;] system - handler exception
java.lang.OutOfMemoryError: PermGen space
```

Mail Delivery Problem

Locate the “LmtpServer” service. This example includes a stack trace report with a **caused by** explanation that the recipient address was rejected as the address must be a fully-qualified address.

```
2007-06-25 10:47:43,008 INFO  [LmtpServer-250]
[name=bigen@example.com;mid=30;msgid=<1291804360.35481182793659172.J
avaMail.root@dogfood.example.com>;] lmtp - rejecting message
bigen@example.com: exception occurred
com.zimbra.cs.mailbox.MailServiceException: redirect to too failed
at com.zimbra.cs.mailbox.MailServiceException.internal_SEND_FAILURE
(MailServiceException.java:412)
at com.zimbra.cs.mailbox.MailServiceException.SEND_FAILURE(MailServi
ceException.java:424)
at com.zimbra.cs.filter.zimbraMailAdapter.executeActions(zimbraMailA
dapter.java:286)
at org.apache.jsieve.SieveFactory.evaluate(SieveFactory.java:151)
at com.zimbra.cs.filter.RuleManager.applyRules(RuleManager.java:177)
at com.zimbra.cs.lmtpserver.zimbraLmtpBackend.deliverMessageToLocal
Mailboxes(zimbraLmtpBackend.java:325)
at com.zimbra.cs.lmtpserver.zimbraLmtpBackend.deliver(zimbraLmtpBack
end.java:140)
at com.zimbra.cs.lmtpserver.LmtpHandler.doDATA(LmtpHandler.java:441)
at com.zimbra.cs.lmtpserver.LmtpHandler.processCommand(LmtpHandler.
java:205)
at com.zimbra.cs.tcpserver.ProtocolHandler.processConnection(Protoc
olHandler.java:231)
at com.zimbra.cs.tcpserver.ProtocolHandler.run(ProtocolHandler.java
:198)
at EDU.oswego.cs.dl.util.concurrent.PooledExecutor$Worker.run(Unkn
own Source)
at java.lang.Thread.run(Thread.java:619)
```

```
Caused by: com.zimbra.cs.mailbox.MailSender$SafeSendFailedException:
504 <too>: Recipient address rejected: need fully-qualified address
; chained exception is:
com.sun.mail.smtp.SMTPAddressFailedException: 504 <too>: Recipient
address rejected: need fully-qualified address
at com.sun.mail.smtp.SMTPTransport.rcptTo(SMTPTransport.java:1196)
at
com.sun.mail.smtp.SMTPTransport.sendMessage(SMTPTransport.java:584)
at javax.mail.Transport.send0(Transport.java:169)
at javax.mail.Transport.send(Transport.java:120)
at
com.zimbra.cs.filter.zimbraMailAdapter.executeActions(zimbraMailAdap
ter.java:281)
... 10 more
```

Account Error- Log in error

Mailbox.log logs any successful or unsuccessful login attempts from IMAP, POP3 or ZWC. When you are looking for a login error, start by looking for “Auth.” This example shows that someone from IP address 10.10.131.10 was trying to log in as admin on the Zimbra Web Client, using Firefox in a Windows OS. Permission was denied because it was not an admin account.

```
2007-06-25 09:16:11,483 INFO  [btpool0-251]
[ip=10.10.131.10;ua=zimbraWebClient - FFX.X (Win);] SoapEngine -
handler exception
com.zimbra.common.service.ServiceException: permission denied: not
an admin account
at com.zimbra.common.service.ServiceException.PERM_DENIED(ServiceExc
eption.java:205)
at com.zimbra.cs.service.admin.Auth.handle(Auth.java:103)
```

Account Errors - IMAP or POP related

When you are looking for a log because of an IMAP or POP issue, look for “ImapServer/Pop3Server.” This example shows a fatal IMAP server error occurred while trying to connect siress@example.com.

```
mailbox.log.2007-06-19:2007-06-19 15:33:56,832 FATAL [ImapServer-
2444] [name=sires@example.com;ip=127.0.0.1;] system - Fatal error
occurred while handling connection
```

Reading a Message Header

Each email message includes a header that shows the path of an email from its origin to destination. This information is used to trace a message’s route when there is a problem with the message. The Zimbra email message header can be viewed from the Zimbra Web Client Message view. Right-click on a message and select **Show Original**.

The following lines are in the message header:

- **Date -** The date and time the message was sent. When you specify time, you can specify range by adding start and stop time to search for messages.
- **From -** The name of the sender and the email address
- **To -** The name of the recipient and the email address. Indicates primary recipients.
- **Message-ID -** Unique number used for tracing mail routing
- **In-Reply-To -** Message ID of the message that is a reply to. Used to link related messages together.
- **Received: from -** The name and IP address the message was sent from. The header displays Received: from information from the MTA to the LMTP and from the local host.

Fixing Corrupted Mailbox Index

Mail messages and attachments are automatically indexed before messages are deposited in a mailbox. Each mailbox has an index file associated with it. This index file is required to retrieve search results from the mailbox.

If a mailbox's index file becomes corrupt or is accidentally deleted, you can re-index the messages in the mailbox from the Administration Console.

Text searches on an account might or might not fail with errors when the index is corrupt. You cannot count on a user reporting a failed text search to identify that the index is corrupt. You must monitor the index log for messages about corrupt indexes. If the server detects a corrupt index, a message is logged to the Zimbra mailbox.log at the WARN logging level. The message starts with **Possibly corrupt index**. When this message is displayed, the administrator must correct the problem. In many cases correcting the problem might mean reindexing the mailbox.

Reindexing a mailbox's content can take some time, depending on the number of messages in the mailbox. Users can still access their mailbox while reindexing is running, but because searches cannot return results for messages that are not indexed, searches may not find all results.

Checking for Index Corruption

Run a sanity check on a specific mailbox index using the `zmprov verifyIndex` command.

CLI:
```
zmprov verifyIndex <user@example.com>
```

If problems are detected, a failure status is returned and a repair can be performed on the index.

Repairing and Reindexing a Corrupt Index

Use the `reIndexMailbox` command to repair and reindex a corrupt index.

CLI:
```
zmprov reIndexMailbox <user@example.com> start
```

This returns a status of *started*.

SNMP Monitoring and Configuration

SNMP Monitoring Tools

You will probably want to implement server monitoring software in order to monitor system logs, CPU and disk usage, and other runtime information.

Zimbra Collaboration uses swatch to watch the syslog output to generate SNMP traps.

SNMP Configuration

Zimbra Collaboration includes an installer package with SNMP monitoring. This package should be run on every server (Zimbra Collaboration, OpenLDAP, and Postfix) that is part of the Zimbra Collaboration configuration.

The only SNMP configuration is the destination host to which traps should be sent.

Errors Generating SNMP Traps

The Zimbra Collaboration error message generates SNMP traps when a service is stopped or is started. You can capture these messages using third-party SNMP monitoring software and direct selected messages to a pager or other alert system.

Checking MariaDB

The MariaDB database is automatically checked weekly to verify the health of the database. This check takes about an hour. If any errors are found, a report is sent to the administrator’s account. The report name that runs the MySQL check is **zmbintegrityreport,** and the crontab is automatically configured to run this report once a week.

Note: *When the MariaDB database is checked, running this report can consume a significant amount of I/O. This should not present a problem, but if you find that running this report does affect your operation, you can change the frequency with which zmbintegrityreport is run. See Appendix C ZCS Contrab Jobs.*

Checking for Zimbra Collaboration Software Updates

When Zimbra Collaboration is installed, the Zimbra Collaboration software update utility is automatically configured to check for the latest Zimbra Collaboration version once a day and if there is an update, to send notification to the address that is configured in the Administration Console's **Server Updates**.

The dates and times Zimbra Collaboration checked for updates is saved to the **Updates** tab and an email notification is sent out until you update the ZCS version. If you do not want to receive an email notification of updates, disable **Send notification email when updates are available**.

You can configure the following:

- **Server that checks for updates**. Available servers are listed and only one server is configured. The selected server checks for updates and the result of the update response from www.zimbra.com is stored in LDAP.
- **Check for updates every x**. The default is to check once a day. You can change the frequency interval to check every x hours, minutes, or seconds. A cron job is configured to check for new updates. If the frequency interval is less than 2 hours, the crontab file must be modified.
- **Updates URL**. This address is the URL that the server connects to when checking for updates. When a Zimbra Collaboration server checks for updates, it transmits its version, platform, and build number to Zimbra. Normally, this URL is not changed.
- To be notified of updates, check the **Send notification email when updates are available** and enter the send to and send from addresses. The default address is the administrator's address.
- A generic email is created. The subject and content of the email can be changed.
- When a server polls the URL specified, the response is displayed.

Updating Zimbra Connector for Microsoft Outlook

The Zimbra Connector for Microsoft Outlook (ZCO) msi file is available from the Zimbra Utilities Downloads page on the Administration Console. When a newer version of ZCO is released before a new version of ZCS, you can upload the newer ZCO msi file to the ZCS server from the Administration Console. The file is uploaded to the **/opt/zimbra/jetty/webapps/zimbra/downloads** directory.

1. Download the new ZCO file to a computer that you can access from the Administration Console:

Admin Console: **Tools and Migration > Client Upload**.

2. Click **Browse** to locate the ZCO file to upload.

3. Restart ZCS:

CLI: Type `zmcontrol restart`, or run `/opt/zimbra/libexec/zmupdatedownload`.

The downloads/index.html file is updated with the latest ZCO client version. This new file can be downloaded from the ZCO link on the Administration Console Tools and Migration > Download page.

Note: *If you do not restart the server, the ZCO download link on the Zimbra Utilities Download page does not select the newer version to download.*

Notifications and Alerts Sent by Zimbra Collaboration

Notifications that are sent by Zimbra Collaboration are demonstrated in the following topics:

- Service status change notification, next.
- Disk usage notification, on page 231.
- Duplicate mysqld processes running notification, on page 231.
- SSL certificates expiration notification, on page 231.
- Daily report notification, on page 232.
- Database integrity check notification, on page 232.
- Backup completion notification, on page 232.

Service status change notification

This notification is sent when service are stopped or restarted

Server Start Notification Message

```
Subject:  Service <service_name> started on <zimbra_host>

Service status change: <zimbra_host> <service> changed from
stopped to running
```

Server Stop Notification Message

```
Subject:  Service <service_name> stopped on <zimbra_host>

Service status change: <zimbra_host> <service> changed from
running to stopped
```

Disk usage notification

A warning alert email notification is sent to the admin account when disk space is low. The default is to send a warning alert when the threshold reaches 85% and a critical alert when the threshold reaches 95%

```
Subject: Disk <volume> at ##% on <zimbra_host>

Disk warning: <zimbra_host> <volume> on device <device_name> at
##%
```

Duplicate mysqld processes running notification

A script is executed to see if mysqld process is running to detect cases where corruption is likely to be caused. An email is generated if it finds more than 1 mysqld process running.

```
Subject: ZCS: Duplicate mysqld processes detected!

PID:$pid PPID:$ppid PGRP:$pgrp

CMD:  $cmdline

More then $maxcnt mysqld processes are running Parent processes
include: $procs This should be investigated immediately as it
may lead to database corruption
```

SSL certificates expiration notification

A report runs on the first of each month and warns of certificates expiring with the next 30 days.

```
Subject: ZCS: SSL Certificates approaching expiration!

The Administration Console and CLI Certificate Tools guide
provides instructions on how to replace you self-signed or
commercial certificate.
```

```
http://wiki.zimbra.com/
index.php?title=Administration_Console_and_CLI_Certificate_Tool
s SSL Certificate expiration checked with $0 on <zimbra_host>.
```

Daily report notification

When the logger package is installed, a daily mail report is automatically scheduled in the crontab. The report is sent daily to the administrator's mailbox.

```
Subject: Daily mail report for <day>

<daily report data>
```

Database integrity check notification

The MySQL database can be checked by running the zmdbintegrityreport automatically scheduled in the crontab to run on a weekly basis. A report is sent to the administrator's mailbox.

```
Subject: Database Integrity check report for <zimbra_host>

Generating report can't run $cmd: $!

Database errors found.

$cmd --password=XXXXXXXX

<cmd output>

No errors found

command failed $!
```

Backup completion notification

When configuring the type of backups that should be run, you can set up to receive notification about the results of a backup session.

```
Subject: ZCS BackupReport:SUCCESS

Server: <server>

Type:    incremental

Status:  completed

Started: Fri, 2012/07/13 01:00:05.488 PDT

Ended:   Fri, 2012/07/13 01:10:09.842 PDT

Redo log sequence range: 2 .. 2

Number of accounts: 500
```

16 Backup and Restore

Zimbra Collaboration (Zimbra Collaboration) includes a configurable backup manager that resides on every Zimbra Collaboration server and performs both backup and restore functions. You do not have to stop the Zimbra Collaboration server in order to run the backup process.

Topics in this chapter:

This chapter describes how data is backed up and restored and how to use the CLI tools to backup or restore your Zimbra Collaboration mailbox server. In addition, this chapter also provides information and general guidelines for disaster recovery.

Backing Up the Mailbox Server

Zimbra Collaboration includes a configurable backup manager that resides on every Zimbra Collaboration server and performs both backup and restore functions. You do not have to stop the Zimbra Collaboration server in order to run the backup process. The backup manager can be used to restore a single user, rather than having to restore the entire system in the event that one user’s mailbox becomes corrupted. Full and incremental backups are saved in in `opt/zimbra/backup`.

Redo Log

Each Zimbra mailbox server generates redo logs that contain current and archived transactions processed by the message store server since the last incremental backup.

When the server is restored, after the backed up files are fully restored, any redo logs in the archive and the current redo log in use are replayed to bring the system to the point before the failure.

When the current redo log file size reaches 100MB, the current redo log rolls over to an archive directory. At that point, the server starts a new redo log. All uncommitted transactions from the previous redo log are preserved. In the case of a crash, when the server restarts, the current redo logs are read to re-apply any uncommitted transactions.

When an incremental backup is run, the redo logs are moved from the archive to the backup directory.

Backup Methods

Two backup methods are available:

- The **standard backup method** is appropriate for enterprise deployments where full backups are run during non-working days.
- The **auto-grouped backup method** is recommended for large Zimbra Collaboration environments where running a full backup of all accounts at one time would take too long.

Standard Backup

The standard backup method runs a weekly full backup and daily incremental backups. A full backup process backs up all the information needed to restore mailboxes, including the LDAP directory server, database, index directory, and message directory for each mailbox.

When backing up shared messages, if a file representing a message already exists in the backup, it flags this object as such and does not copy its content again.

An incremental backup process backs up the LDAP data and gathers all the redo logs written since the last incremental backup. If the incremental backup process finds no previous full backup for a mailbox, a full backup is performed on that mailbox.

Incremental backups move the redo logs to the backup directory. The redo logs are a journal of every activity that has taken place. They contain a full copy of all messages delivered, as well as metadata such as tags, contacts, and conversations.

These backup files can be used to restore the complete mailbox server or individual mailboxes so that account and message data is completely restored.

The LDAP directory is backed up as part of either the full or incremental backup process. All accounts, domains, servers, COS, and other data are backed up.

Each mailbox server generates redo logs that contain every transaction processed by that server. If an unexpected shutdown occurs to the server, the redo logs are used for the following:

- To ensure that no uncommitted transactions remain, the server reads the current redo log upon startup and re-executes and completes any uncommitted transactions.
- To recover data written since the last full backup in the event of a server failure.

When the server is restored, after the backed up files are fully restored, any redo logs in the archive and the current redo log in use are replayed to bring the system to the point before the failure.

The Zimbra MTA is not backed up, as the data is only on the server for a very short time.

Custom configurations—such as mailboxd's server.xml—are not backed up.

Backup Notifcation

A backup report is sent to the admin mailbox when full and incremental backups are performed. This report shows the success or failure of the backup and includes information about when the backup started and ended, the number of accounts backed up and redo log sequence range.

If the backup failed, additional error information is included.

Auto-Grouped Backup Method

The auto-grouped backup method runs a full backup for a different group of mailboxes at each scheduled backup. The auto-grouped backup method is designed for very large Zimbra Collaboration environments where backing up all accounts can take a long time. Because auto-grouped backups combine full and incremental backup functions, there is no need for incremental backups. Each auto-grouped session runs a full backup of the targeted group of mailboxes. It is not recommended to run auto-grouped backups manually since they are scheduled from the CLI and run automatically at the scheduled times.

Directory Structure for Backup Files

The backup destination is known as a backup target. To the backup system, it is a path in the file system of the mail server. The Zimbra default backup directory is `/opt/zimbra/backup`.

The backup directory structure created by the standard backup process is shown in Standard Backup directory structure. You can run regularly scheduled backups to the same target area without overwriting previous backup sessions.

The **accounts.xml** file lists all accounts that are in all the backups combined. For each account, this file shows the account ID, the email address, and the label of the latest full backup for that account. If you save your backup sessions to another location, you must also save the latest accounts.xml file to that location. The accounts.xml file is used to look up the latest full Backup for an account during restore. If the accounts.xml file is missing you must specify the backup label to restore from.

The redo log directory is located at `/opt/zimbra/redolog/redo.log.` When the current redo log file size reaches 100MB, the current redo log rolls over to an archive directory, `/opt/zimbra/redolog/archive`. At this point the server starts a new redo log. All uncommitted transactions from the previous redo log are preserved. In the case of a crash, when the server restarts, the current redo logs are read to re-apply any uncommitted transactions.

Redo operations are time critical, therefore a directory move is performed instead of a copy-then-delete function. This directory move can only be performed if the source and destination paths are on the same file system volume. In other words, the redo log and redo-archive log must be on the same file system volume because the archive files are a subdirectory of the redo log file system.

All incremental and auto-grouped backup sessions must be saved to the same directory as all the redo logs must be found in the same backup target. Standard full backup sessions can use a different target directory.

Standard Backup directory structure

/opt/zimbra/backup	Default root of backups
accounts.xml/	List of all accounts, each with email file address, Zimbra ID, and latest full backup label. The accounts.xml maintains the mapping of email addresses to their current zimbraIds and also the most recent full backup for each account.
sessions/	Root of backup sessions.
full-<timestamp>/	A full backup directory. The timestamp for a session is the backup start time in GMT, including milliseconds. GMT is used rather than local time to preserve visual ordering across daylight savings transitions.
session.xml	Metadata about this backup label for full or incremental session, such as start and stop times.
shared_blobs/	Contains message files that are shared among accounts in this backup.
sys/	Global database tables and localconfig.

db_schema.xml	Database schema information for global tables. Each table dump file has a .csv format.
localconfig.xml	Copy of /opt/zimbra/conf/localconfig.xml at the time of the backup.
<table name>.dat	Database table data dump.
LDAP/ldap.bak	LDAP dumps.
accounts/	Each account's data is saved in a subdirectory of this.
<.../zimbraId>/	Root for each account.
meta.xml	Metadata about this account's backup.
ldap.xml	Account's LDAP information, including aliases, identities, data sources, distribution lists, etc.
ldap_latest.xml	If this is present, this files links to ldap.xml of the most recent incremental backup.
db/	Account-specific database table dumps.
db_schema.xml	Database schema information for this account's tables.
<table name>.dat	Database table data dump.
blobs/	Contains blob files.
index/	Contains Lucene index files.
incr-<timestamp>	An incremental backup directory. This directory is similar to the full backup directory schema and includes these meta files.
session.xml	
sys/db_schema.xml	
accounts/..../<zimbraID>/ldap.xml	
	incr-<timestamp> does not include accounts/.../<zimbraId>/db/ db_schema.xml because incremental backup does not dump account tables.

Note: *For auto-grouped backups, the directory structure saves the redo log files to the full backup session. There are no incremental backup sessions.*

Backup and Restore Using the Administration Console

Many of the backup and restore procedures can be run directly from the Administration Console. In the Navigation pane, **Monitoring>Backup** lists each of the servers.

Configure Backup from the Admin Console

Backups can be configured from the Administration Console as a global settings configuration and as a server-specific configuration. Server settings override global settings.

In the global settings, you can configure the email addresses to receive notification about the results of the backup. The default is to send the notification to the admin account.

For Auto-grouped, you configure the number of groups to divide the backups into.

The standard backup is the default and is automatically scheduled. You do not need to make any additional changes. But when running the auto-grouped backup you must manually configure the backup schedule. To do so, access the CLI and follow the steps under Schedule Auto-Group Backups to run `zmschedulebackup -D` to set the default schedule for auto-grouped backups.

Throttling option with auto-grouped backup. The auto-grouped backup method automatically backs up mailboxes that have never been backed up when the next backup is scheduled. This might not be the best option every time a full backup is required on all mailboxes, such as immediately after massive mailbox migrations or after a major upgrade. Enabling **Throttle automatic backups** limits the mailbox count in a daily backup to T/N. This breaks the constraint of backing up all mailboxes in N days, but it helps backup to finish during off hours.

CLI: When all mailboxes are backed up at least once, disable throttling:

```
zmprov mcf zimbraBackupAutoGroupedThrottled TRUE
```

Backup and Restore Using the Command Line Interface

The Zimbra backup and restore procedures can be run as CLI commands.

CLI: The following utilities are provided to create backup schedules, perform full and incremental backups, restore the mail server, or restore the LDAP server.

- `zmschedulebackup`. This command is used to schedule full backups, incremental backups, and deletion of old backups.
- `zmbackup`. This command executes full or incremental backup of the mail server. This is run on a live server, while the mailboxd process and the mailbox server are running. This command also has an option to manually delete old backups when they are no longer needed.
- `zmbackupabort`. This command stops a full backup that is in process.
- `zmbackupabort -r`. This command stops an ongoing restore.
- `zmbackupquery`. This command lists the information about ongoing and completed backups, including labels and dates.
- `zmrestore`. This command executes a full or incremental restore to the Zimbra mail server. The **zmrestore** command is performed on a server that is running.
- `zmrestoreoffline`**.** This command restores the Zimbra mail server when the mailboxd process is stopped.
- `zmrestoreldap`**.** This command restores the complete LDAP directory server, including accounts, domains, servers, COS and other data.

Refer to Appendix A Command Line Utilities for usage and definitions for each of these commands.

Backing up using the Standard Method

When you initiate a backup, you can issue the command from the same server being backed up, run the command remotely and specify the target server on the command line, or use the Administration Console to start a backup session.

Scheduling a Standard Backup

When Zimbra Collaboration was installed, the backup schedule for the standard method of full and incremental backups was added to the crontab. Under the default schedule, the full backup is scheduled for 1:00 a.m., every Saturday. The incremental backups are scheduled for 1:00 a.m., Sunday through Friday.

By default, backups older than a month are deleted every night at 12 a.m.

You can change the backup schedule using the `zmschedulebackup` command.

Specify the fields as follows, separate each field with a blank space:

- minute — 0 through 59
- hour — 0 through 23
- day of month — 1 through 31
- month — 1 through 12
- day of week — 0 through 7 (0 or 7 is Sunday, or use names)

Type an asterisk (*) in the fields you are not using.

Example of `zmschedulebackup` options

- Replace the existing full backup, incremental backup and delete backup schedule. When you use -R, the complete backup schedule is replaced. If you use this command, remember to set the delete schedule, if you want backup sessions to be scheduled for automatic deletion. This example replaces the existing schedule to have full backups run on Sunday at 1 a.m., incremental backups to run Monday through Saturday at 1 a.m., and old backups deleted at 12:00 a.m. every day.

  ```
  zmschedulebackup -R f “0 1 * * 7” i “0 1 * * 1-6” d 1m “0 0 *
  * *”
  ```

- Add an additional full backup time to your current schedule. This example adds a full backup on Thursday at 1 a.m.

  ```
  zmschedulebackup -A f “0 1 * * 4”
  ```

- Review your backup schedule. The schedule is displayed.

  ```
  zmschedulebackup -q
  ```

- Save the schedule command to a text file. This would allow you to easily recreate the same schedule after reinstall or upgrade

```
zmschedulebackup -s
```

Note: *If you change the default schedule and want to return to it, enter the command* `zmschedulebackup -D`*.*

Default Standard Backup Schedule

The default backup schedule is displayed similarly to the following example:

```
0 1 * * 6 /opt/zimbra/bin/zmbackup -f - all
0 1* * 0-5 /opt/zimbra/bin/zmbackup -i
0 0 * * * /opt/zimbra/bin/zmbackup -del 1m
```

Read as follows:

- `0 1 * * * 6 /opt/zimbra/bin/zmbackup -f - all`

  The full backup runs on 1 a.m. on Saturdays.
- `0 1* * 0-5 /opt/zimbra/bin/zmbackup -i`

  An incremental backup runs at 1 a.m. from Sunday through Friday.
- `0 0 * * * /opt/zimbra/bin/zmbackup -del 1m`

  Backup sessions are deleted at midnight 1 month after they were created.

```
How to read the crontable
```

Each crontab entry contains six fields that appear in this order:

Field

1	**2**	**3**	**4**	**5**	**6**
0	**1**	*****	*****	**6**	**/opt/zimbra/bin/zmbackup -f -all**

1 - minute (0-59 allowed)

2 - hour (0-23)

3 - day of month (1-31)

4- month (1-12 or names)

5 -day of week (0-7 or names allowed, with both 0 and 7 representing Sunday

6 - string to be executed

```
The asterisk character works as a wild card, representing every
occurrence of the field’s value.
```

You can add additional recipient addresses or change the notification email address in the Administration Console Global Settings>Backup/Restore page.

Full Backup Process

The full backup process goes through the following steps to backup the mailbox, the database, the indexes, and the LDAP directory:

1. Backs up the global system data including system tables and the local config.xml file.
2. Iterates through each account to be backed up and backs up the LDAP entries for those accounts.
3. Places the account's mailbox in maintenance mode to temporarily block mail delivery and user access to that mailbox.
4. Backs up the mailbox.
   a. Creates MySQL dump for all data related to that mailbox.
   b. Backs up the message directory for that mailbox.
   c. Creates a backup of the index directory for that mailbox.
5. Returns that account's mailbox to active mode and moves on to the next one.
6. Backs up the LDAP directory.

Full backup is usually run asynchronously. When you begin the full backup, the label of the ongoing backup process is immediately displayed. The backup continues in the background. You can use the **zmbackupquery** command to check the status of the running backup at any time.

Backup files are saved as zip files without compression. To change the default zip option, see Appendix A Command Line Interface, zmbackup section.

Incremental Backup Process

Incremental backups are run using the CLI command, **zmbackup**. The process for incremental backup is as follows:

1. Backs up the global system data including system tables and the local config.xml.
2. Iterates through each account to be backed up and backs up the LDAP entries for those accounts.
3. Moves the archive redo logs, created since the last backup, to the <backup target>/redologs directory.

   Archived logs that are less than an hour old at the time of incremental backup are copied to the backup and are not deleted. These redologs are deleted one hour after the backup. The interval is set by the localconfig key `backup_archived_redolog_keep_time`. The default is 3600 seconds.

If no full backup for this account is found, the backup process performs a full backup on this account, even if only an incremental backup was specified.

4. Backs up the LDAP directory.

Performing Manual Backups

CLI: Use the `zmbackup` command to perform the following backup operations:

- Perform a manual back up all mailboxes on server<1>:

```
zmbackup -f -s server1.domain.com -a all
```

- Perform a manual, incremental backup of all mailboxes on **server1** since last full backup

```
zmbackup -i -s server1.domain.com -a all
```

- Perform a manual, full backup of only **user1**’s mailbox on **server1**

```
zmbackup -f -s server1.domain.com -a user1@domain.com
```

Deleting Backup Sessions

You can delete backup sessions either by label or by date.

- Deleting by label deletes that session and all backup sessions before that session.
- Deleting by date deletes all backup session prior to the specified date.

CLI: For example, `zmbackup -del 7d` deletes backups older than 7 days from now. You can specify day (d), month (m), or year (y).

Finding a Specific Backups

Each full or incremental backup is a backup session.

Each backup session is labeled with date and time. For example, the label **full-20070712.155951.123** says this is a backup from July 12, 2007 at 3:59:51.123.

Note: *The times set in the session label are GMT, not the local time. GMT is used rather than local time to preserve visual ordering across daylight savings transitions.*

CLI: Use the `zmbackupquery` command to find full backup sessions.

- To find a specific full backup session:

```
zmbackupquery -lb full-20070712.155951.123
```

- To find a full backup sessions since a specific date:

```
zmbackupquery --type full --from “2007/01/01 12:45:45”
```

- To find all full backup sessions in the backup directory:

```
zmbackupquery --type full
```

- To find the best point in time to restore for an account specify a time window

```
zmbackupquery -a user1@example.com --type full --from “2007/
07/05 12:01:15” --to “2007/07/12 17:01:45”
```

Note: *If a backup session is interrupted because the server crashes during backup (not aborted), the interrupted backup session is saved as a temporary session. The temporary backup session is put in <backup target>/sessions_tmp directory. You can use the* **rm** *command to delete the directory.*

Aborting a Full Backup in Progress

1. Before you can abort a backup, you must know the backup session label. This label is displayed when `zmbackup` first starts. If you do not know the full backup label, use `zmbackupquery` to find the label.

2. Use the `zmbackupabort` command to stop a backup that is in progress. The backup is immediately stopped and becomes a partially successful backup.

   - Stop the backup, if you know the label name

   ```
   zmbackupabort -lb full-20070712.155951.123 -s server1
   ```

   - Stop the backup, if you do not know the label

   ```
   a. zmbackupquery
   b. zmbackupabort -s server1 -lb full-20070712.155951.123
   ```

Back up using the Auto-Grouped Method

The auto-grouped backup method is configured either from the Administration Console or from the CLI.

Admin Console: **Configure**>**Global Settings**, **Backup/Restore** page,
or, to set it by servers:
Configure>**Servers** <server> **Backup/Restore** page.

Configuring Auto-Grouped Backup from the CLI

Set the backup method in the global configuration, and you can override the configuration on a per server basis if you do not want a particular server to use the auto-grouped backup method.

CLI: To set up auto-grouped backup, you modify LDAP attributes with the `zmprov` command:

```
zmprov mcf <ldap_attribute> <arg>
```

You can also set the attributes at the server level using `zmprov ms`.

The following LDAP attributes are modified:

- `zimbraBackupMode`. Set it to be **Auto-Grouped.** The default is Standard.
- `zimbraBackupAutoGroupedInterval`. Set this to the interval in either days or weeks that backup sessions should run for a group. The default is 1d. Backup intervals can be 1 or more days, entered as xd (1d); or 1 or more weeks, entered as xw (1w).
- `zimbraBackupAutoGroupedNumGroups`. This is the number of groups to spread mailboxes over. The default is 7 groups.

Schedule Auto-Group Backups

You must configure the auto-group backup schedule.

CLI: Run `zmschedulebackup -D` to set the default schedule for auto-grouped backups based on your `zimbraBackupAutoGroupedInterval` setting.

One group is backed up each interval. The auto-grouped backup automatically adjusts for changes in the number of mailboxes on the server. Each backup session backs up the following:

- All mailboxes that have never been backed up before. These are newly provisioned mailboxes.
- All mailboxes that have not been backed within the number of scheduled backup days. For example, if backups are scheduled to run over six days, mailboxes that have not been backed up in the past 5 days are backed up.
- More mailboxes, the oldest backup first. This is done so that the daily auto-grouped backup load is balanced.

  For example, if you configured the auto-grouped backup interval to be daily (1d) and the number of groups to be 7, the first time auto-grouped backup runs, all accounts are backed up. After the initial backup, auto-grouped backup runs again the next day. This time accounts that have been newly provisioned and a percentage of accounts close to one-seventh of the total are backed up again. Accounts with the oldest backup date are backed up first. The backup continues with newly provisioned account and approximately one-seventh of accounts being backed up daily over seven days.

When backing up shared messages, if a file representing a message already exists in the backup, it flags this object as such and does not copy its content again.

Backup files are saved as zip files without compression. To change the default zip option, see Appendix A Command Line Interface, zmbackup section.

These backup files can be used to restore the complete Zimbra Collaboration system or individual mailboxes so that account and message data is completely restored. Archived redo logs are moved to the backup session as part of the full backup. When the server is restored from an auto-grouped backup, redo logs are replayed to bring the system to the point before the failure.

Backup Options

The backup process can be configured to selectively back up content and to backup the MySQL database.

Backup Up content Options

You can configure these backup options so that search indexes, blobs, and HSM blobs are not backed up during a full backup session.

- `zimbraBackupSkipSearchIndex`. Default is **FALSE**. If set to **TRUE**, search index is not backed up. The mailbox will have to be reindexed after restoring from a backup without the search index.
- `zimbraBackupSkipBlobs`. The default is **FALSE**. If this is set to **TRUE**, blobs are not backed up. This might be useful for getting a quicker backup of just database data when the blobs reside on a fault-tolerant storage. This configuration applies to all blobs, those on the primary volumes as well as secondary (HSM) volumes.
- `zimbraBackupSkipHsmBlobs`. The default is false. If this is set to true, blobs on HSM volumes are no backed up. Set this if `zimbraBackupSkipBlobs` is false but you want to skip blobs on HSM volumes.

Back Up the MySQL Database

You can configure Zimbra Collaboration backups to run mysqldump to backup your MySQL database during backup sessions. When this is enabled, a mysqldump backup runs with each full, incremental, and auto-grouped backup.

The mysqldump is a backup of your MySQL database at a specific time. Data changes that occur later than the dump file are written to the binary log.To recover to a specific point in time, binary logging must be enabled. See the Zimbra wiki article, MySQL Backup and Restore at http://wiki.zimbra.com/wiki/MySQL_Backup_and_Restore.

The MySQL dump files are gzipped and placed in the backup target directory, or to /opt/zimbra/backup, if no directory is specified.

These files can be quite large. Make sure that the free disk space is at least three times greater than the actual mySQL database file for each mySQL database backup file that is saved.

- Enable mysqldump to run automatically with your backups, type

  ```
  zmlocalconfig edit mysql_backup_retention=<N>.
  ```

  N is the number of copies of the mySQL database backups that are retained.

Note: *To restore a MySQL database, contact Zimbra support for assistance.*

Managing Disk Space for Backups

Backup sessions fail if the target disk does not have enough space. All data backed up in the backup session is discarded and deleted.

You can choose to receive notification when your disk might not have enough space to complete the backup

CLI: Configuring the `zimbraBackupMinFreeSpace` attribute helps you manage running backup session by notifying you

Set the value for attribute `zimbraBackupMinFreeSpace` to the amount of free space required on the backup target disk before a backup session is run. If the disk has less space than the value set in the attribute, the backup session will not run and an email notification is sent to the administrator.

Note: *If you are also backing up the MySQL database, make sure you set the value large enough to include the myslqdump file size.*

The value for this attribute can be specified as a percentage of the total disk space, for example 25%, or as number of bytes, for example 300MB, 50GB, etc. The default value is 0, meaning the check is disabled and backup is always allowed to start.

CLI: The attribute can be set globally or by server.

- As global:

  ```
  zmprov mcf zimbraBackupMinFreeSpace <value>
  ```

- By server,:

  ```
  zmprov ms <server hostname> zimbraBackupMinFreeSpace <value>
  ```

Backup sessions run if the free disk space is at least the value you set. If your backup file is larger than the value, the backup session fails. You should monitor the size of the backup files and adjust the attribute value if the backup require more space than the configured value.

Restoring Data

Three types of restore procedures can be run:

CLI: The `zmrestore` command is used to restore the mailboxes while the Zimbra Collaboration mailbox server is running.

- `zmrestoreoffline`—to restore the mail server when the mail server is down. This command is run for disaster recovery.
- `zmrestoreldap`—to restore the content of the LDAP directory server.

The restore process allows all accounts or individual accounts to be specified.

Restore Process

The **zmrestore** process goes through the following steps to restore the mailbox, the database, the indexes, and the LDAP directory.

1. Retrieves specified accounts to be restored, or specify **all** for all accounts that have been backed up.
2. Iterates through each mailbox:
   a. Deletes the mailbox on the server to clear any existing data
   b. Restores the last full backup of the MySQL data, the index directory, and the message directory for that mailbox
   c. Replays redo logs in all incremental backups since last full backup
   d. Replays all archived redo logs for that mailbox, from the redo log archive area on the mailbox server
   e. Replays the current redo log

Note: *Accounts are restored, even if the account exceeds its quota. The next time the user performs an action that affects quota, they receive a warning that they have exceeded their quota.*

Important: *Users using the Zimbra Connector for Microsoft Outlook must perform an initial sync on the Outlook client when they log on after the Zimbra server is restored.*

Examples

- Perform a full restore of all accounts on server1, including last full backup and any incremental backups since last full backup

  ```
  zmrestore -a all
  ```

- Perform a single account restore on server1

  ```
  zmrestore -a account@company.com
  ```

- Restore to a specific point in time (PIT). The following restore options affect redo log replay. If you do not specify one of these options, all redo logs since the full backup you're restoring from are replayed

  Important: After you perform any of the following point-in-time restores, you should immediately run a complete backup for those accounts to avoid future restore problems with those accounts.

  A restore that is run using any of the following options is a point-in-time restore:

  - `-restoreToTime` **<arg>-** Replay the redo logs until the time specified.
  - `-restoreToIncrLabel` **<arg> -** Replay redo logs up to and including this incremental backup.

  - `-restoreToRedoSeq` **<arg> -** Replay up to and including this redo log sequence.
  - `-br` **-** Replays the redo logs in backup only, therefore excluding archived and current redo logs of the system.
  - `-rf` **-** Restores to the full backup only. This does not include any incremental backups at all.

- Specify an exact time, the incremental backup label, or the redo log sequence to restore to. Restore stops at the earliest possible point in time if more than one point in time restore options are specified.

  ```
  zmrestore -a account@company.com-restoreToTime <arg>
  ```

  Two common ways to write the <timearg> are

  - "`YYYY/MM/DD hh:mm:ss`"
  - `YYYYMMDD.hhmmss`

- Perform an incremental restore only to last full backup, excluding incremental backups since then, for all accounts

  ```
  zmrestore -rf --a all
  ```

- Restore mailbox and LDAP data for an account

  ```
  zmrestore -ra -a account@company.com
  ```

- Restore to a new target account. A prefix is prepended to the original account names

  ```
  zmrestore -ca -a account@company.com -pre restore
  ```

  The result from the above example would be an account called `restoreaccount@company.com`.

- Restore system tables in the database (db) and the local config

  ```
  zmrestore -sys
  ```

- Include `--contineOnError` (`-c`) to the command so that the restore process continues if an error is encountered.

  ```
  zmrestore -a all -c
  ```

  When `-c` is designated, accounts that could not be restored are displayed when the restore process is complete

- To restore a specific account. Can also be used to restore deleted accounts

  ```
  zmrestore -a account@company.com
  ```

- To avoid restoring accounts that were deleted

  ```
  zmrestore -a account@company.com -skipDeletedAccounts
  ```

- To restore a mailbox, but exclude all the delete operations that were in the redolog replay. When the mailbox is restored it will contain messages that were deleted. This is useful if users use POP and remove messages from the server

```
zmrestore -a account@company.com --skipDeletes
```

Note: *When the latest point in time is requested, do not add a backup label (-lb). Without specifying the label, the most recent full backup before the requested point is automatically used as the starting point.*

Stop a Restore Process

The `zmbackupabort -r` command interrupts a restore that is in process. The restore process stops after the current account finishes being restored. The command displays a message showing which accounts were not restored.

- To stop the restore type:

  ```
  zmbackupabort -r
  ```

Restore Mailboxes When Mail Server Is Down

The offline restore process can only be run when the mailboxd server is not running. In general, offline restore is run under the following circumstances:

- Certain components of the Zimbra server are corrupted, and the server cannot be started. For example, the data in LDAP or the database are corrupted.
- A disaster requires the Zimbra software to be reinstalled on the server.

The offline restore must be run before the Zimbra Collaboration mailbox store server is started to keep the redo logs in sequence.

In a disaster recovery when the Zimbra software is reinstalled, if mailboxd is started before the backup files are restored, the mail server would begin to accept email messages and perform other activities, producing redo logs in the process. Since the pre-disaster data have not been restored to the server, the redo logs would be out of sequence. Once mailboxd is running, it would be too late to restore the pre-disaster data.

The offline restore process goes through the following steps.

1. Specified accounts to be restored are retrieved. If the command-line does not specify any mailbox address, the list of all mailboxes on the specified mail host are retrieved from Zimbra LDAP directory server.
2. Iterates through each mailbox:
   a. Deletes the mailbox on the server to clear any existing data
   b. Restores the last full backup of the MySQL data, the index directory, and the message directory for that mailbox
   c. Replays redo logs in all incremental backups since last full backup
   d. Replays all archived redo logs for that mailbox, from the redo log archive area on the mailbox server
   e. Replays the current redo log

Restore All Accounts

1. Restore all accounts on server1 when mailboxd is stopped

   ```
   zmrestoreoffline -a all
   ```

2. Start mailboxd after the offline restore is complete

   ```
   zmcontrol startup
   ```

Restore Individual Accounts on a Live System

Use the **zmrestore** command to restore one or more selected accounts. In the event that a user's mailbox has become corrupted, you might want to restore that user from the last full and incremental backup sets.

1. For each account to be restored, put the account into maintenance mode, type

   ```
   zmprov ma <account> zimbraAccountStatus maintenance
   ```

   Maintenance mode prevents delivery of new emails during the restore. Otherwise, the emails would be overwritten during the restore process.

2. Run the `zmrestore` command to restore the accounts

   ```
   zmrestore -a (account@abc.com account@abc.com)
   ```

3. For each account that was restored, put the account back into active mode, type

   ```
   zmprov ma <account> zimbraAccountStatus active
   ```

Important: *If a user account is restored and the COS that the account was assigned no longer exists, the default COS is assigned to the account.*

Exclude Items from a Restore

When you restore from a full backup, you can exclude the search index and blobs.

- **Search index**. If you do not restore the search index data, the mailbox will have to be reindexed after the restore.

  ```
  zmrestore <all or account> --exclude-search-index
  ```

- **Blobs**. This is a useful option when all blobs for the mailbox being restored already exists.

  ```
  zmrestore <all or account>|--exclude-blobs
  ```

- **HSM-blobs**. This is useful when all HSM blobs for the mailbox being restored already exists.

  ```
  zmrestore <all or account> --exclude-hsm-blobs
  ```

Restore the LDAP Server

In a disaster recovery where you need to restore the entire system, restore the LDAP directory server first.

The `zmrestoreldap` command restores the global LDAP data including COS, distribution lists, etc. You can restore the complete LDAP server, which recreates the entire schema or you can restore specific accounts. You specify the session to restore. The restore command has to be run on the LDAP server being restored.

Examples

- To find the LDAP session labels type

  ```
  zmrestoreldap -lbs
  ```

- Restore the complete LDAP directory server

  ```
  zmrestoreldap -lb full20061130135236
  ```

- Restore LDAP data for specific accounts

  ```
  zmrestoreldap -lb full20061130135236 -a tac@abc.com
  jane@abc.com
  ```

General Steps for Disaster Recovery

Use the following steps to restore a mailbox store server in a general disaster scenario involving multiple machines.

Preparation

1. Restore the LDAP directory server to a known good state before doing anything with the mailbox store server.
2. Put all mailboxes into maintenance mode to prevent mail delivery and user login while restoring the mailboxes.
3. Stop the mailbox store server if it is running.

Recovery

1. Reinstall the Zimbra Collaboration software on the mailbox server, if necessary.
2. Restore mailboxes.
3. Start the Zimbra Collaboration server.
4. Put all Zimbra Collaboration mailboxes back in active mode.
5. Run a full backup of the server.

Crash Recovery Server Startup

When your system unexpectedly stops and then restarts on startup, the server searches the redo log for uncommitted transactions and replays any that it finds. Replaying the redo logs brings the system to a consistent state.

Restore the Zimbra Collaboration

If a complete machine failure occurs, use the following steps to restore to a new server.

Important: *The Zimbra Collaboration version you install on the new server* ***must be the same version*** *as installed on the old server. The server can have a different operating system.*

The new server hardware must meet the requirements described in the Installation Prerequisites section of the Zimbra Collaboration Single Server Installation guide. Install the new operating system, making any necessary OS configuration modifications as described in the installation guide.

You do the following to restore to a new server:

1. Prepare the new server.
2. Block client access to the old server’s IP address with firewall rules.
3. Mount any volumes that were in use on the older server.
4. Delete the MySQL data that is set up in the initial installation of Zimbra Collaboration.
5. Copy the backup files to the new server.
6. Run `zmrestoreldap` to restore the global LDAP data.
7. Run `zmrestoreoffline` to restore account data from the backup sessions.
8. Prepare and run a new backup.

Old Server Status

Two scenarios for disaster recovery are the server has died and the Zimbra Collaboration files cannot be accessed, or Zimbra Collaboration is still running, but the server hardware needs to be replaced.

If the server is not running:

1. Block client access to the server IP address with firewall rules.
2. Find the latest full Zimbra Collaboration backup session to use.

If server is still running, to prepare the move to the new server:

1. Block client access to the server’s IP address with firewall rules.

2. Run a full backup of the old service, or if the backup is recent, run an incremental backup to get the most current incremental backup session.
3. Run `zmcontrol stop`, to stop Zimbra Collaboration. In order to restore to the most current state, no new mail should be received after the last incremental backup has run.
4. Change the hostname and IP address on the old server to something else. Do not turn off the server.

Install ZCS on a New Server

Before you begin, make sure that the new server is correctly configured with the IP address and hostname and that Zimbra Collaboration is installed and configured with the same domain, hostname, passwords, etc. as the previous server. See the Zimbra Collaboration installation guide for more information about preparing the server. Before you begin to install Zimbra Collaboration, note the information you need from the old server including: admin account name and password, LDAP, Amavis, and Postfix passwords, spam training and non-spam training user account names, exact domain name, and the global document account name.

Note: *Make sure the computer time is set to the same time as the old server. Verify that the old hostname and MX DNS records resolve to the new server.*

1. Copy the Zimbra Collaboration License.xml file to a directory on the new server. You cannot complete the Zimbra Collaboration installation if the license is not on the new server.
2. Run ./install.sh and follow the directions in the installation guide to install Zimbra Collaboration. Make sure that you configure the same domain, hostname, passwords as on the old server. During Zimbra Collaboration install, the following settings must be changed to match the original server settings:

   a. **Zimbra LDAP Server**. For **Domain to create**, identify the same default domain as on the old server.

   b. **Zimbra Mailbox Server**. An administrator’s account is automatically created.

      - Make sure that the account name for **Admin user to create** is the same name as on the original server.
      - Set the admin password to be the same as on the old server.
      - Set the LDAP password to be the same as on the old server.
      - Set the Postfix user and Amavis user passwords to be the same as on the old server

- Change the **Spam training user** and the **Non-spam (HAM) training user** account names to be the same as the spam account names on the old server.
- **Global Document Account –** This account name is automatically generated and is usually named wiki. If you changed this, change the Global Document Account name to be the same account name as on the original server.

c. Change any other settings on the new server to match the configuration on the original server.

d. In the main menu, set the default backup schedule and the automatic starting of servers after the configuration is complete to **NO**.

Restoring a Backup to a New Server

1. Stop the new server

   ```
   zmcontrol stop
   ```

2. If the old server had additional storage volumes configured, mount the additional volumes now.

3. Delete the mysql data and reinitialize an empty data directory. If you do not do this, zmrestoreoffline will have errors. As zimbra, type

   ```
   rm -rf /opt/zimbra/db/data/*
   ```

   ```
   /opt/zimbra/libexec/zmmyinit
   ```

   The mySQL service is now running.

4. Copy all the files in the /backup directory from the old server or from an archive location to `/opt/zimbra/backup.`

5. Restore the LDAP.

   ```
   zmrestoreldap -lb <latest_label>
   ```

   If you are restoring a large number of accounts, you might run a command such as the UNIX command, nohup, so that the session does not terminate before the restore is complete.

Note: *To find the LDAP session label to restore, type* `zmrestoreldap –lbs`*.*

6. Because some Zimbra Collaboration services are running at this point, type `zmconvertctl start`. This is required before running zmrestoreoffline.

7. Sync your LDAP password from backup directory to the new production servers LDAP config.

   ```
   zmlocalconfig -f -e zimbra_ldap_password=<password>.
   ```

8. Start the offline restore.

```
zmrestoreoffline -sys -a all -c -br.
```

You might run a command such as `nohup` here also. To watch the progress, tail `/opt/zimbra/log/mailbox.log`.

> ***Note:*** *Use –c on the command line so that accounts are restored, even if some accounts encounter errors during the offline restore process.*

9. Because some Zimbra Collaboration services are running at this point, type `zmcontrol stop` to stop all services.

10. Remove any old backup sessions because these sessions are no longer valid.

    ```
    rm -rf /opt/zimbra/redolog/* /opt/zimbra/backup/*
    ```

11. Start Zimbra Collaboration.

    ```
    zmcontrol start.
    ```

12. Run a full backup.

    ```
    zmbackup -f -a all.
    ```

13. Remove the firewall rules and allow client access to the new server.

Restoring from Different Failure Scenarios

The restoration steps are similar for most server failures you may encounter. If a failure occurs, review the disaster recovery section to understand the process and then follow the steps below for the specific type of failure.

Restore When LDAP is Corrupted

1. Reinstall the LDAP server. See the Zimbra Collaboration Installation guide.

2. Find the label for the LDAP session to restore. Run the `zmrestoreldap -lb <label>` command, with no arguments to restore all accounts, domains, servers, COS, etc. for the LDAP server.

3. Make sure that all accounts are in active mode. From the command line, type `zmprov ma zimbraAccountStatus active`

Restore After Replacing Corrupted Partitions

1. If a partition becomes corrupted, replace the failed disk.

2. To restore the latest full and incremental backup files, run

    ```
    zmrestore -a all
    ```

    The **zmrestore** process automatically retrieves the list of all mailboxes on the specified mail host from the backup date and iterates through each mailbox to restore the mailboxes to the last known good state.

Restore After Corrupted or Unreadable Redo Log

If the redo log becomes unreadable, the mailboxd service stops and cannot restart. If this happens, inspect the hardware and software to find the source of the problem before proceeding.

Without the latest redo log, the Zimbra mailbox server cannot be returned to the most current state. The Zimbra mailbox data can be restored to the latest archived redo log state. A new redo log for current transactions is created after the Zimbra mailbox server is restored.

Important: *The mailboxd service must not be running, and all accounts must be in maintenance mode before beginning.*

1. Put all accounts into maintenance mode.

   ```
   zmprov md <domain> zimbraDomainStatus maintenance
   ```

2. With the mailboxd service not running, type

   ```
   zmrestoreoffline
   ```

   The offline restore process begins by retrieving the list of all mailboxes on the specified mail host from the backup.

   The offline restore than iterates through each mailbox to:

   - Delete the mailboxes on the server
   - Restore the last full backup from the backup area
   - Restore all incremental backups for that mailbox in order, since the last full backup. This involves replaying the redo logs from the backup target area
   - Replay all archived redo logs

   Because the redo log for current transactions is not available, the mailbox server is returned to the state of the last archived redo log.

3. After the offline restore is complete, start ZCS.

   ```
   zmcontrol startup
   ```

4. When the Zimbra mailbox server is up, run a full backup of the Zimbra server. The full backup must be run immediately to have the latest data backed up, because the latest redo log is not available.

Change Local Configuration Files After Restoring Zimbra

The `localconfig.xml` file, located in the **/opt/zimbra/conf** directory, includes the core Zimbra server configuration, such as paths and passwords, This file is backed up in full and incremental backups. When you run an incremental or full restore, the backed-up version of the localconfig.xml is renamed `localconfig.xml.restore` and is copied to the `/opt/zimbra/conf` directory.

If you have made changes since the last backup, you might need to replace the localconfig.xml file with the restored copy. Compare these files, and if the **.restore** file has the latest local configuration data, delete the localconfig.xml file and rename the file with the `.restore` extension to localconfig.xml.

Using snapshots to Backup and Restore

You can back up and restore a server using the snapshot feature provided by the storage layer rather than using Zimbra's backup and restore feature. Using snapshots, you can maintain a standby site if the primary site fails and reroute users to the standby site to keep operations running.

Snapshots are taken for all volumes of data and are transferred to the standby site periodically. Data volumes that are backed up using snapshots include mysql, blobs, lucene index, and redologs.

When the primary site is down, the `zmplayredo` command is used to bring consistency to the snapshots and to reapply any changes in data to minimize data loss across volumes

There are four volumes of data:

- Mysql
- Blob
- Lucene index
- Redologs

Sets of snapshots are taken every hour and transferred to the remote standby site. However, all snapshots are not taken at one instant and could be a second to a minute apart from each other. Also, snapshots of redologs may be taken more frequently. The sequence of events could look like:

`8:00:00` - snapshot mysql

`8:00:01` - snapshot blob

`8:00:02` - snapshot index

`8:00:03` - snapshot redolog

`8:05:00` - transfer the snapshot set to remote site completed

`8:15:00` - snapshot redolog

`8:15:05` - transfer of redolog snapshot to remote site completed

`8:30:00` - snapshot redolog

`8:30:05` - transfer of redolog snapshot to remote site completed

`8:35:00` - primary site fails

On the remote site, there are snapshots from the 8:00 set of data as well as subsequent snapshots of the redologs. They all have to be brought together so that the most recent information is available on the standby site once users are rerouted to it.

You can now run the `zmplayredo` command to replay changes from 8:00:00.

```
zmplayredo --fromTime ‘2008/10/17 08:00:00:000’
```

All data is brought forward to the current time and the standby site is set up and running. Data from 8:30:00 to 8:35:00 is lost but that is expected when the restore process is being carried out.

17 Zimbra Mobile

Zimbra Mobile provides over-the-air synchronization of mail, contacts, calendar and task data and device security policy enforcement between the mobile device and an account on the mailbox server.

Note: *Zimbra also has the Touch Client available. For more information, go to www.zimbra.com for the latest revision of this guide and see the Zimbra Web Client User Guide.*

Topics in this chapter:

- Mobile Device Security Policies, next.
- Setting Up Mobile Policies on ZCS, on page 260.
- Mobile Device Security Policies, on page 261.
- Managing Mobile Devices, on page 264.
- User's Mobile Device Self-Care Features, on page 266.

The ActiveSync protocol is used to configure and sync the Zimbra mailbox server with the native client that is used on a user's device.

Zimbra Mobile is compatible with iPhone, iPod Touch, Windows Mobile 5 (WM5), and 6 (WM6) devices, and many other phones that support the ActiveSync™ protocol.

Mobile Device Security Policies

The administrator can configure mobile security policies to enforce security rules on compliant mobile devices that sync with Zimbra Collaboration accounts.

The following features can be configured to enhance the security of mobile devices.

- Remote wipe to erase all data from the device if the mobile device is lost or stolen.
- Device password policies to set up strong password enforcement including minimum password length, inactivity time, enforce password history, and wipe device after configured failed sign in attempts

- S/MIME encryption policies to enable S/MIME usage and set the policies for sending and signing encrypted messages.

In addition, you can manage the following device usage options.

- Sync settings for past calendar and email items, message size, formatting
- Device settings, such as cameras, desktop sync, bluetooth, use of removable storage can be disabled.

Note: *Only WM6 devices and IPhones support security policies set by the server. Older devices do not respond to security policies.*

Setting Up Mobile Policies on ZCS

Admin Console: You can manage mobile device policies from the Administration Console as a Class of Service or for individual accounts.

1. To set mobile policies from a COS, go to the **Configure > Class of Service** and double-click the COS you want to configure.
2. To enable mobile devices to sync to ZCS, check **Mobile Access > General > Enable Mobile Sync**.
3. Check **Enable Mobile Policy** to set up mobile security policies that enforce security rules.
4. If old devices that do not support device security policies can be used, check **Allow non-provisionable devices**.
5. If device does not acknowledge all policies that are downloaded, but you want to allow the device to download messages, check **Allow partial policy enforcement on devices**.
6. The refresh interval for policy refresh on a device is 24 hours. You can change this.
7. Configure the appropriate policies in the other sections. See Mobile Device Security Policies for a description of the settings you can configure.
8. Click **Save**.

Mobile Device Security Policies

The following attributes can be configured from the Administration Console to establish mobile policies.

Setting	Description
General Settings	
Enable Mobile Sync	In order for mobile devices to sync to Zimbra Collaboration Server, **Enable Mobile Sync** must be checked. Users have two-way, over the air synchronization of mail, contacts, and calendar data between mobile devices and the Zimbra server.
Enable Mobile Policy	Check this box to set up mobile security policies that enforce security rules on compliant mobile devices. You can enforce general security policies including password rules and set up local wipe capability on compliant devices. After the mobile policy is set up, the next time a mobile device sends a request to the server, mobile devices that are capable of enforcing security policies automatically set up the rules you implement and immediately enforces them.
Allow non-provisionable devices	If this is enabled, old devices that do not support device security policy enforcement can still access the server.
Allow partial policy enforcement on device	If a device does not acknowledges all policies that are downloaded, ZCS still allows the device to continue downloading messages.
Refresh Interval (hours):	Specifies the amount of time in minutes before ZCS enforces the policy refresh on the device by sending "449 Retry after Provision" response to Sync request. Default is 24 hours.
Password Settings	
Require password	User must create a password on the mobile device.
Minimum password length	Minimum number of characters for the password. Default is 4. The maximum length is 16 characters.
Require alphanumeric password	Requires that the password include both numeric and alpha characters.
Minimum complex characters required	Minimum number of complex characters that must be in the password. This is any character that is not a letter. Default is 0 (none)

Allow simple password	Simple passwords can be created. A simple device password is a password that has a specific pattern, such as 2468, 1111. Not enabled by default.
Enable password recovery	Device password is stored n the server and can be recovered. Enabled by default.
Allow device encryption	If enabled, device encryption is enabled on the mobile phone. Enabled by default
Require device encryption	If enabled, encryption must be implement on the device to synchronize with the server. Not enabled by default.
Password re-entry required after inactivity (min)	Length of time the device remains inactive before the password must be entered to reactivate the device. Default is 15 minutes
Failed attempts allowed	Specifies the number of failed log in attempts to the device before the device automatically initiates a local wipe. The device does not need to contact the server for this to happen. Default is 4
Expiration (days)	Length of time in days that a password can be used. After this number of days, a new password must be created. Default is 0, the password does not expire.
Passwords stored to prevent reuse	Number of unique passwords that a user must create before an old password can be used. Default is 8.
S/MIME Settings	
Enable S/MIME public key encryption and signing	In order to use S/MIME encryption on a mobile device this must be checked. The S/MIME feature must also be enabled in the COS Features page.
Require device to send signed messages	Device must send signed S/MIME messages. Not enabled by default.
Require S/MIME algorithm for signing	Algorithm must be used when signing a message. Not enabled by default.
Require device to send encrypted messages	Specifies whether S/MIME messages must be encrypted. Not enabled by default.
Require S/MIME algorithm for encrypting	A required algorithm must be used when signing a message. Not enabled by default.

Algorithm negotiation	How a messaging application on the device can negotiate the encryption algorithm if a recipient's certificate does not support the specified encryption algorithm. Select from **Block Negotiation**; **Strong Algorithm Only**, or **Allow Any Algorithm**. Default is Allow Any Algorithm.
Allow S/MIME software certificates	Allow S/MIME software certificates. Default is to allow.
Sync Settings	
Past calendar items sync'd	Maximum range of calendar days that can be synchronized to the device. Default is two weeks.
Past email items sync'd	Maximum number of days of email items to synchronize to the device. Default is 3 days.
Limit plain text message size (KB)	Maximum size at which email messages are truncated when synchronized to the device. Default is to not set a maximum size.
Allow direct push while roaming	Mobile device must synchronize manually while roaming. Default is not to.
Allow HTML formatted messages	Enables HTML email on the device. If this is disabled, all email is converted to plain text before synchronization occurs. Default is to enable HTML formatting.
Limit HTML message size (KB	Maximum size at which HTML-formatted email messages are synchronized to the devices. The value is specified in KB. Default is to not set a maximum size.
Device Settings	
Allow removable storage	Mobile device can access information stored on a storage card. Default is TRUE.
Allow camera	Specifies that the camera on the device can be used. Default is TRUE.
Allow Wi-Fi	Specifies that wireless Internet access is allowed on the device. Default is TRUE.
Allow Infrared	Specifies that an infrared connection is allowed on the device. Default is TRUE.
Allow sharing	Specifies that the mobile device can be used as a modem to connect a computer to the Internet. Default is TRUE.
Allow remote desktop	Specifies that the mobile device can initiate a remote desktop connection. Default is TRUE.
Allow desktop sync	Specifies that the mobile device can synchronize with a desktop computer through a cable. Default is TRUE.

Allow bluetooth	By default Bluetooth capabilities are allowed on the device. Select from **Allow**, **Disable**, **Hands-Free Only**.
Device Applications	
Allow browser	Microsoft® Pocket Internet Explorer is allowed on the mobile device by default. This does not affect third-party browsers.
Allow consumer mail	Users can configure a personal email account on the mobile device. This parameter does not control access to emails using third-party mobile device email programs.
Allow POP or IMAP mail	Users can configure a POP3 or IMAP4 email account on the device. This parameter doe not control access by third-party email programs.
Allow text messaging	Allow users to use text messaging on the device.
Allow unsigned applications	Allows unsigned applications to be used on the device.
Allow unsigned install packages	Allows unsigned installation packages on the device.
Approved Application Lists	
Approved Applications	This setting stores a list of approved applications that can be run on the mobile device.
Blocked Applications	This setting specifies a list of applications that cannot be run.

Managing Mobile Devices

After the mobile policy is set up, the next time a mobile device sends a request to the server, mobile devices that are capable of enforcing security policies automatically set up the rules and immediately enforces them.

For example, if a password has not been set up on the device or the password is not as strong as required by the mobile policy, the user must fix the password before syncing with the server. Once the server confirms that the policy is enforced on the mobile device, the device can sync.

If a mobile device is lost or stolen, the device is protected by the following policy rules:

- When the **Password re-entry required after inactivity (min)** is configured, after the number of minutes configured, the device is locked. To unlock the device, users must re enter their password.

- When the **Failure attempts allowed** is configured, after the password is entered incorrectly more than the specified number of times, a locally (generated by the device) initiated wipe of the device is performed. This erases all data on the device.

In addition to the rules set up from the Administration Console to perform a local device wipe, users can initiate a remote wipe from their ZWC account to erase all data on lost, stolen, or retired devices.

Supporting Autodiscover

ZCS supports the Autodiscover service so that users can provision mobile devices for their Zimbra accounts without having to know the server settings. Autodiscover returns the required server settings after users enter their email address and password.

Autodiscover is enabled by default. For autodiscover to work, you must configure a valid SSL certificate from a certification authority.

The recommended type of certificate to use is a Unified Communications Certificate or UCC. This certificate lets you add multiple host names in the Subject Alternative Name field. For autodiscover to work, the Subject Alternative Name field must include the hostnames users are connecting to.

You must have a valid domain name service (DNS SRV record) for `autodiscover.<domain>.com` so that the client devices can locate and connect to the autodiscover service.

Use the Install Certificates wizard on the Administration Console to generate the certificate signing request and to install the signed certificate when received. Unified Communications Certificates can be issued by many certification authorities.

When you complete the request you must have a valid domain name service (DNS SRV record) for `autodiscover.<domain>.com`. Configure the **Subject Alternative Name** (SAN) field with the valid domain names that you use. The alternative name should include the domain `autodiscover.<company>.com`. Include all the domain names required for your environment in the Subject Alternative Name field.

Note: *Make sure that the web server mode is https, both, redirect, or mixed as the autodiscover and other communications from devices is HTTPS.*

Set Up Mobile Synchronization for User Accounts

Mobile sync is enabled either in the COS profiles for the account or on individual accounts. In most cases, no additional plug-ins are required.

Users might need to configure the following on their in the mobile device to sync to their Zimbra account if they don’t have auto discover.

- **Server name (address)**. Enter the fully qualified host name of the user's Zimbra Collaboration mailbox server.
- **User name**. Enter the user's primary Zimbra Collaboration account name.
- **Domain**. Enter the user's Zimbra Collaboration domain name (DNS).
- **SSL certificate** from the server might have to be added to the device as trusted if SSL is used when the certification is self-signed.

Users can sync their ZCS account to their mobile device. They can send email, create appointments, and add contacts to their address book.

For details about specific device setup, see the Mobile Device Setup pages on the Zimbra Wiki.

Change Mobile Device Password Policy

If a mobile device is locked by the Zimbra Collaboration mobile password policy, the PIN requirement must be removed to resync the device.

Admin Console: Open the user account to be modified.

1. On the **Mobile Access** page, uncheck **Force pin on device**.
2. After the password policy has been disabled, the user must resync the device:
   - If the device is a WM6 device, the user syncs to the account. After the sync has completed, instruct the user to go to the **Lock** setting on the device and **turn off the device PIN.**
   - If the device is an iPhone/iPod Touch 3.0 or above, the user syncs to the account. After the sync, instruct the user to go to the **Settings>General** properties and **turn off Passcode Lock**.

Note: *If the iPhone/iPod Touch is prior to 3.0, there is an Apple software bug that prevents downloading new device policies to take effect. The user must delete the Zimbra Collaboration account from the iPhone/iPod Touch, turn the PIN off, and then re-setup sync with the Zimbra Collaboration. Because the password requirement was turned off, a PIN is not asked for.*

User's Mobile Device Self-Care Features

Users can directly manage the following device functions.

- Perform a remote wipe of a device.

  If a mobile device is lost, stolen, or no longer being used, users can initiate a remote wipe from their ZWC account to erase all data from the mobile device. The device is returned to its original factory settings.

- Suspend a sync that has been initiated from the mobile device and resume the sync to the device.
- Delete the device from their list.

  If a device is deleted from the list and the device attempts to sync after that, the server forces the device to fetch the the policy again on the next sync.

18 Archiving and Discovery

Zimbra Archiving and Discovery is an optional feature that enables you archive messages that were delivered to or sent by Zimbra Collaboration and to search across mailboxes.

Topics in this chapter:

- How Archiving Works, next.
- How Discovery Works, on page 271.
- Installing the Archiving Package, on page 271.
- Manage Archiving From the Administration Console, on page 273.
- Archive Mailboxes, on page 275.
- Searching Across Mailboxes, on page 276.

The installation of the archiving feature provides the ZCS discovery tool (also known as cross mailbox search) and sets the attributes that allow archiving to be enabled on the Zimbra MTAs.

Archiving is configured on a per account basis. Each account enabled for archiving requires a Zimbra archive license. When archiving is enabled for an account, a copy of all email from or to that account is forked at the MTA, and a copy of the message is delivered to a predefined archive mailbox. The archiving process is transparent to account users.

Discovery allows you to conduct a search for email messages across live and archived mailboxes and copy the results to a specified mailbox.

How Archiving Works

When a message is sent or received by a user, the message is always routed through the Postfix MTA. The Postfix MTA allows integrating software that can perform actions on messages that are in flight. When archiving is enabled for the sender or the recipient of messages, Zimbra Archiving integrates with an MTA hook and the Amavisd-New utility to fork a copy of the message.

The “**does recipient or sender have archiving enabled**” check is performed on the SMTP standard envelope and not on the From or To/Cc headers. Since checks are performed on the envelope, Bcc copies and messages sent to distribution lists are captured.

For example, if User A sends a message to User B, and if User B has archiving enabled, the MTA delivers two messages — one to User B's mailbox and one to User B's archive mailbox. The message received in User B's mailbox looks normal, as shown in the following example:

```
Received: from localhost (localhost.localdomain
[127.0.0.1])…
From: userA@example.com
To:userB@example.com
Subject: New License Key
Message-ID: <015f01c717fe$70f042d1$b1d6f61d@thom>
Date: Mon, 04 Nov 2008 23:48:18 -0000

Hi B,
Can you send me the license key for the software
again?
Thanks, A
```

The message received in User B's archive mailbox contains additional **X-Envelope-From** and **X-Envelope-To** headers. These headers show the real email address the message was sent from and each of the email addresses that the message was sent to.

```
Received: from localhost (localhost.localdomain
[127.0.0.1])…
From: userA@example.com
To:userB@example.com
Subject: New License Key
Message-ID: <015f01c717fe$70f042d1$b1d6f61d@thom>
X-Envelope-From: userA@example.com
X-Envelope-To: userB@example.com
Date: Mon, 04 Nov 2008 23:48:18 -0000

Hi B,
Can you send me the license key for the software again?
Thanks, A
```

Zimbra archiving can be set up to create archiving accounts that are maintained within Zimbra Collaboration or to work with third-party archiving systems using SMTP forwarding to send messages to a third-party archive server. For third-party archiving, Zimbra Collaboration is configured to act as the forwarding agent.

How Discovery Works

The discovery feature of Archiving and Discovery is used to search across live* and archive mailboxes for email messages and attachments. The discovery tool can be run from the Administration Console and the results are copied to a target mailbox that you specify.

* A live mailbox is an account on the system other than archive accounts and system accounts.

You can search outgoing and incoming email by date, from, to, cc, subject, keywords, and attachments. You can also create queries to search by name, dates and time ranges, distribution list, aliases.

Search results are placed in a target mailbox. You can organize your search results by creating different target mailboxes or by creating individual folders within a target mailbox for each search you run. **X-zimbra-Source** header information is added to each message header that is copied to the targeted mailbox. This header label includes the account ID, the account name, and the server that the account resides on.

You can see the results of the search by logging on to the target mailbox address.

Installing the Archiving Package

You can install the archiving package on an existing single-server deployment or on a multi-server deployment.

If the mailbox server and the MTA server reside on the same node, you configure and enable archiving as a single process. If your mailbox and MTA servers are on separate nodes, the zimbra-archive package is installed first on at least one mailbox server and then the archiving component is enabled on each MTA in the deployment.

Installing zimbra-archiving in a Single-Server Environment

The following scenario assumes that the LDAP, MTA, mailstore and archiving servers are on the same node.

1. Refer to the Zimbra Collaboration Single Server Installation Guide to open an SSH connection to the Zimbra Collaboration server. Log on to the server as **root** and run the `./install.sh` command to begin the upgrade process.
2. Accept the license agreement and type **Yes** to run the upgrade.
3. Type **Yes** for zimbra-archiving when presented with the packages to be installed.

   The upgrade process begins and the archiving package is installed. At this point, the Discovery feature is installed and can be used.

CLI: To enable archiving, switch user to **zimbra** and enable archiving on the MTA server.

```
zmprov ms <zmhostname> +zimbraServiceEnabled archiving
```

- Restart the server.

  ```
  zmcontrol restart
  ```

Installing zimbra-archiving in a Multi-Server Environment

The following upgrade scenario is adding a new server that is dedicated as a archiving server to your Zimbra Collaboration environment.

Before beginning the install process, record the following information. You need this information when you install the archiving server. Run the `zmlocalconfig -s` command to find the information.

LDAP Admin Password ____________

LDAP Hostname _____________

LDAP Port _____________

Refer to the Multiple-Server Installation chapter in the Zimbra Collaboration Multi-Server Installation guide for detailed steps on installing the packages.

1. Open an SSH connection to the mailbox server that is being configured for archiving. Log on to the server as **root** and unpack the Zimbra software. Run the `./install.sh` command to begin the install process.
2. Type **y** and press **Enter** to install the following packages:
   - zimbra-store
   - zimbra-archiving

   The zimbra-core package is installed by default.
3. Type **y** and press **Enter** to modify the system.
4. The Main menu displays the default entries for the Zimbra component you are installing. To expand the menu, type **x** and press **Enter**.
5. Select the **Common Configuration** menu and configure the LDAP Hostname, LDAP password, and LDAP port.
6. Select the **zimbra-store** menu and configure the Admin password and the License file location.

Complete the installation process following the steps in the Multi-server Installation guide, under Installing Zimbra Mailbox Server.

At this point, the Discovery feature is installed and can be used.

Manage Archiving From the Administration Console

After Archiving is installed, you can set up archiving and manage it from the Administration Console.

Enable Archiving

Admin Console: Go to the **Global Settings>MTA** page; at the Archiving Configuration section, check **Enable archiving**.

CLI: Restart ZCS from the command line

```
zmcontrol restart
```

Creating a Dedicated Archive COS

You can configure attributes in the COS to set mailbox features, quotas, and passwords, turn off spam and virus checks, and hide the archive accounts from GAL

Admin Console: Go to **Configure>Class of Service**; from the Gear icon menu select **New**.

1. Change **Features** and **Preferences** as required for an Archiving COS.
2. If you have a dedicated archive server, in the Server Pool page, deselect the archiver server from the list. In a multi-server deployment with a dedicated archive server, the server should be removed from the COS server pool so that the archive server is not randomly assigned to new accounts.

Note: *These steps to remove the server from the server pool are not done in a single-server deployment. Creating a dedicated archiving COS is a good idea as this makes it easy to create archive mailboxes that are configured the same.*

3. Modify the options on the **Advanced** page if required.
4. In the **Archiving** page, check the **Enable archiving** box to make this COS an archiving cos.
5. If you want to change the format for the naming scheme for archive accounts, modify the two template fields. See the Setting Up an Archive Account Name section for more information.
6. Click **Finish**.

Setting Up an Archive Account Name

You use attributes to create and manage the naming scheme for archive accounts. You can set up these attributes either by COS or by account. For COS, these attributes can be changed from the Administration Console, COS or individual account’s Archiving page.

- **Account date template**. Sets the date format used in the name template. The default is yyyyMMdd. Adding the date to the account name makes it easier to roll off older data from the system to backups.
- **Account name template**. Sets up how the archive mailbox name is created. The default value is `${USER} ${DATE}@${DOMAIN}.archive`.

  The archive account address would b similat to the following example:

  `user-20070510@example.com.archive.`

  If you change the default value, you must use syntax that creates a valid email address. We recommend that you add `.archive` to all archive accounts to create archive mailboxes in a non-routable domain to prevent spoofing of the archives.

When the template based on the `zimbraArchiveAccountDateTemplate` attribute is set up, `amavisArchiveQuarantineAccount` is updated to the new template name when `zmconfigarchive` is run.

Administering the archive server

The `amavisd-new` server process controls account archiving as well as antivirus and antispam processes. The `zmarchivectl` command can be used to start, stop, restart or obtain the status of the amavisd-new server process that controls account archiving. Caution should be taken when starting or stopping the archiving process as it is a shared server process between archiving, antivirus, and antispam processes. Performing actions on any of them affect any of the other services that may be enabled in your deployment.

If you want to disable archiving and not antivirus, or antispam services, disable the respective service either through the CLI or through the Administration Console.

Set Up Archiving for a Users Mailbox

Four attributes are related to the archive feature for accounts. Two that configure a mailbox and two template attributes to construct the archive account names.

To set up archiving for a mailbox two attributes are configured on the primary user’s mailbox. One attributed enables archiving and the second shows where messages are being archived.

- **Currently archived to** — The current archive address. Archiving is to a single account. If this is unset, archiving is not enabled.
- **Archived accounts** — Any previous and current archive addresses that this mailbox was archived to. containing all the accounts that have been archived for the given account.

Archive Mailboxes

You can create an archive mailbox with or without an assigned COS. You can also forward archive email to a third-party.

Note: *Accounts with archiving enabled are counted against the number of Zimbra licenses purchased for archiving. To see current license information, go to the Administration Console, Global Settings>License page. Archive mailboxes are listed in the Administration Console along with the live accounts.*

Creating an archive mailbox and assigning a COS

Archive accounts are created based on the Zimbra Archive name templates.

- The attribute—`zimbraIsSystemResource`—is added to the archive account and set to TRUE.
- The archive account is displayed in the Administration Console.
- When a message is received in a mailbox with archiving enabled, a copy of the message is sent to the archive mailbox.

CLI: Log on as zimbra, and use the `zmarchiveconfig` command:

```
zmarchiveconfig enable <account@example.com> archive-cos
<archive>
```

Creating an Archive Mailbox with No COS or Password

If the archive account is not assigned a COS, the following settings are set by default.

- Mailbox quota is set to 0, unlimited quota.
- Spam and virus checks are disabled.
- Hide in GAL is enabled, so the archive account does not display in the GAL

CLI: Log on as zimbra, and use the `zmarchiveconfig` command:

Type `zmarchiveconfig enable <user@example.com>`

Enabling Archive Forwarding to a Third-party Archiving Server

If the archive account is not maintained within Zimbra Collaboration, you do not need to set a password, COS, or other attributes.

CLI: Log on as zimbra, and use the `zmarchiveconfig` command:

Type `zmarchiveconfig enable <account@example.com> archive-address account-archive@offsiteserver.com archive-create false.`

Searching Across Mailboxes

When the archiving and discovery feature is installed, you can search across mailboxes either from the Administration Console or through the command line interface.

Note: *You do not need to have any archive mailboxes configured to search across mailboxes, but the Archive package must be installed.*

You can assign a user to run the mailbox searches from the Administration Console by creating a delegated administrator with rights to access the mailbox search tool.

Cross Mailbox Search from the Administration Console

The discovery tool, **Search Mail**, is added to **Tools and Migration** on the Navigation pane when the archiving package is added. To set up a cross mailbox search, in Search Mail, go to the gear icon and select New. You configure the following information.

- **Server name**. The server name to be searched.
- **Target mailbox and folders**. One target mailbox and folder are created automatically. You can use this mailbox for all your search results and create new folders for each search, or you can create a new target mailbox for each separate search.

  A target mailbox is like any other mailbox and can have any features or preferences that are defined by the COS or by account. Target mailboxes are listed in the Administration Console Accounts list. You might want to give the target mailboxes account names that identifies them as target mailboxes for cross-mailbox searches and configure a COS specific for target mailboxes to be able to manage access.
- **Limit the number of messages returned by the search**. The default is 500 results.
- You can select to send an email notification when the search is completed. The email notification includes the search task ID and status on the subject line and you can specify the type of information to include in the message, such as the number of messages found, the list of addresses resulting from the search and the search query used.
- Select which mailboxes to search. When you check **Select accounts to search**, you select which account addresses to search.
- **Create the search query**. You can search outgoing and incoming email by date, from, to, cc, subject, keywords, and attachments. Advanced can be used to quickly create a query to search by name, dates and time ranges, distribution list, aliases.

  When searching archive messages, you can search by the envelope address using the **envfrom** and **envto** query language extensions.

As the search runs, the Search Mailbox Content pane lists the search and the status. Click **Refresh** to update this page.

Delete the search task when it is completed because it occupies server memory. When the server is restarted, past searches are deleted.

When you use the discovery feature in the Administration Console, the tool makes copies of messages in the target mailbox you create. The messages occupy server space, increasing the size of your server. You might want to delete these messages from the target mailbox when they are no longer needed.

19 Legal Requests for Information

The legal intercept feature makes copies of email messages that are sent, received, or saved as drafts from targeted accounts and sends these messages to a designated “shadow” email address.

Topics in this chapter:

- Legal Intercept Settings, next.
- Creating Mailbox Snapshots for Legal Discovery, on page 281.

Legal Intercept can be configured to send the complete content of the message or to send only the header information. When a targeted account sends, receives, or saves a draft message, an intercept message is automatically created to forward copies of the messages as attachments to the specified email address.

Legal Intercept Settings

The legal intercept feature can be configured either for a Class of Service or for individual accounts. The feature is configured from the CLI, using `zmprov`.

The only required configuration to set up legal intercept is to enable the feature—`zimbraInterceptAddress`—on target accounts or COS.

You can enable the attribute `zimbraInterceptSendHeadersOnly` to send only the header information of the email message instead of sending the complete message.

Setting Up Legal Intercept

CLI: Specify the intercept address where the intercepted messages are sent.

- If enabling intercept by COS:

  ```
  zmprov mc <cosname> zimbraInterceptAddress
  <account@intercept_example.gov>
  ```

- If enabling intercept for an account:

  ```
  zmprov ma <accountname@example.com> zimbraInterceptAddress
  <account@intercept_example.gov>
  ```

  If you are going to use the default intercept message template and From address (postmaster@<youraddress.com>), legal intercept is set up.

Setting Up Legal Intercept to Forward Message Header

CLI: To forward the header information, not the complete message for an account:

```
zmprov mc <accountname@example.com>
zimbraInterceptSendHeadersOnly TRUE
```

Modifying the Intercept Cover Email Message

An email message is automatically created to forward copies of the intercepted messages as attachments. The default message includes:

- **From** address is Postmaster@<address.com>
- **Subject** line "Intercept message for <account@address.com <intercepted message subject>"
- **Message** "Intercept message for <account@address.com>. Operation=<type of message>, folder=<foldername>, folder ID=<#>.

The cover email message can be modified. Use the following parameters to modify the email message.

ACCOUNT_DOMAIN	Domain of the account being intercepted.
ACCOUNT_ADDRESS	Address being intercepted
MESSAGE_SUBJECT	Subject of the message being intercepted.
OPERATION	Operation that the user is performing, "add message", "send message", or "save draft".
FOLDER_NAME	Name of the folder to which the message was saved.
FOLDER_ID	ID of the folder to which the message was saved.
NEWLINE	Used for formatting multi-line message bodies.

CLI: Use steps in this section to change the from name, the subject line, or text in the message body:

- To change the **From** name:

```
zmprov mc <accountname@example.com> zimbraInterceptFrom
<newname@example.com>
```

- To change the text of the **Subject** line:

```
zmprov mc <accountname@example.com> zimbraInterceptSubject
<Intercepted message subject text> parameter <text>
parameter
```

- To change the text in the message body:

```
zmprov mc <accountname@example.com> zimbraInterceptBody
<Intercepted message text> parameter <text> parameter
```

Note: *To modify by account, type* `zmprov ma`*.*

Creating Mailbox Snapshots for Legal Discovery

You can create a query for the user's mailbox using the REST URL format to search for specific types of email messages and attachments and have these messages zipped and saved to your computer. This zip file can be forwarded to a requesting law enforcement agency.

Email message is displayed as an .eml file name after the subject line. The attachments are saved in the format that they were delivered.

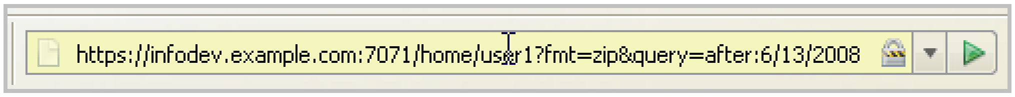
Creating a Mailbox Snapshot Zip File

You must be logged into the ZCS Administration Console to create the zip file. You create a query for one account at a time.

1. In the Administration Console address field of the browser, after **7071/,** type:

   ```
   home/<username>?fmt=zip&query=<searchquerystring>
   ```

   For example:



https://infodev.example.com:7071/home/user1?fmt=zip&query=after:6/13/2008

   In the above example, the search query is requesting a zip file of all email messages and attachments in the Inbox after June 13, 2008 for an account called user1.

   You can use any search operators that are used for searching in ZCS. For example, you can search by folder (in:folder_name), by sender's name (from:<someone>), and you can use multiple search terms. See the Search Tips wiki page for keyword examples, http://wiki.zimbra.com/ .php?title=Search_Tips.

2. Press **Enter** or the arrow to create the zip. A **Confirm** box displays, asking if you want to navigate away from this page.
3. Click **OK**.
4. Choose where you want to save the zip file.

   This zip file is ready to be delivered.

20 Color and Logo Management

You can change the logo and base colors of the Zimbra Web Client themes without having to customize individual Zimbra Collaboration themes. This can be done from the administration console or the CLI.

With Touch Client, you can change the logo but modification to theme colors is not currently supported.

Topics in this chapter:

- Changing Theme Color and Logos on the Zimbra Web Client, next.
- Changing the Logo on the Touch Client, on page 285.

Changing Theme Color and Logos on the Zimbra Web Client

Topics in this section:

- Customizing Base Theme Colors.
- Replacing the ZWC Logo.

Base colors for themes, and custom logos can be configured as a global setting or as a domain setting.

- When the global settings are changed, the changes apply to themes on all servers.
- When the domain settings are changed, the base color and logos for themes on the domain are changed.

If global settings and domain-level settings for theme base colors or logos are not identical, the domain values are displayed for the domain.

Important: *If the logo and base colors are customized in multi-domain* Zimbra Collaboration *environments, you must set a virtual host as the base color: logo attributes are displayed based on the Host header sent by the browser.*

Note: *Various Zimbra themes are included with* Zimbra Collaboration. *Some of these themes— such as lemongrass, Hot Rod, and Waves—have been designed with graphics or color codes that do not change when you modify the base color. You might want to disable those themes from user's Theme preferences selection.*

Customizing Base Theme Colors

The following base colors in Zimbra Web Client themes can be changed:

- The primary background color displayed in the client.

  This color is the background of the page. Variants of the color are used for buttons, background color of the Content and panes, tabs, and selection highlight. In the following image, the background color displays with the logo, the variant of the background color displays in the login area.
- The secondary color is the color used for the toolbar.
- The selection color is the color displayed for a selected item such as a message or an item in the Overview pane.
- The foreground color is the text color displayed. The default text color is black. The text color usually does not need to be changed.

Replacing the ZWC Logo

You can replace the log with your company's logo globally or per domain.

Note: License Policy for Logo Replacement
The Zimbra Public License does not allow removing the Zimbra logo in the Zimbra Web Client. Only Network Edition customers can replace Zimbra logos that display in the Zimbra Web Client. Therefore, only customers of the Network Edition should use these instructions. Additional information about the license usage can be found at http:/ www.zimbra.com/license/index.html.

Graphics to Replace

The following logo files can be changed. Your logos must be the same size as the specified here or the image might not display correctly. These graphic files can be saved on another server or in a directory that is not overwritten when Zimbra Collaboration is upgraded.

- Company logo that displays on the login and splash screens for Zimbra Web Client and the Zimbra Collaboration administration console. The dimension of the graphic must be exactly 300 x 30.
- Small company logo in the upper-left of the Zimbra Web Client application and the administration console. The dimension of the graphic must be exactly 170 x 35.
- Company Web address that links from the company logos.

Graphics not replaced

The icon that displays in the Advanced search toolbar and the favicon.ico that displays in the URL browser address field cannot be changed at this time.

Changing the Logo on the Touch Client

Use information in this section to find out how to prepare and place your logo image file(s) for replacement of the default Zimbra images in the user interfaces.

Note: *Not currently supported:* Logo modification for the Zimbra Web Client.

You can globally replace the Zimbra Collaboration logo with your company's logo by replacing the image files in specific paths, as described in the following topics:

- Company log for ZCS Touch Client Login and Splash Screens.
- Watermark for Bottom-right Display in Email Message.
- Bookmark Image for Springboard.

Note: *These image files will not survive an upgrade. Therefore, be sure to keep a backup and repeat the replacement process after an upgrade*

Company log for ZCS Touch Client Login and Splash Screens

The image displays on white background.

	For Low DPI Devices	For High DPI Devices
Size Requirement:	300 x 65	600 x 130
File location:	/skins/_base/logos/ TouchLonginBanner.png	/skins/_base/logos/ TouchLonginBanner@2x.png

Watermark for Bottom-right Display in Email Message

	For Low DPI Devices	For High DPI Devices
Size Requirement:	200 x 45	400 x 90
File location:	/skins/_base/logos/ TouchWatermarkBanner.png	/skins/_base/logos/ TouchWatermarkBanner@2x.pn

Bookmark Image for Springboard

	For Low DPI Devices	For High DPI Devices
Size Requirement:	Mobile phone: 57 x 57	Mobile phone: 114 x 114
File Location:	/img/logo/Icon.png with your company logo	/img/logo/Icon@2x.png
Size Requirement:	Tablet: 72 x 72	Tablet: 144 x 144
File Location:	/img/logo/Icon~ipad.png	/img/logo/Icon~iPad@2x.png

21 Zimlets

Zimlets are a mechanism to integrate ZCS with different third-party applications to enhance the user experience from the Zimbra Web Client. With Zimlets, users can look at information and interact with the third-party application from within their email messages. Zimlets can be made available from the Zimbra Web Client Overview Pane to users by modifying the Class of Service (COS).

Topics in this chapter:

- Managing Zimlets from the Administration Console, next.
- Managing Zimlets from the Command Line Interface, on page 289.

ZCS includes several predefined Zimlets. You can also create Zimlets or download them from the Zimlet Gallery located on the Zimbra Web site.

Predefined Zimlets when enabled let users preview the following:

- Mouse over a date or time and see what is in calendar.
- Mouse over a name or email address and see details from the address book for this name.
- Right-click on a phone number to make a call with your soft-phone.
- Right-click on a date to schedule a meeting.
- Right-click on a name, address, or phone number to update address book information.

For information about creating Zimlets, see the Zimlet Development section on the Zimbra Wiki.

Managing Zimlets from the Administration Console

The following Zimlet management tasks are available from the Zimbra Administration Console.

- Deploy a Zimlet, which creates the Zimlet entry in the LDAP server, installs the Zimlet files on the server, enables the Zimlet and makes it available to the members of the default COS.
- Make a Zimlet available or not available per COS or account.
- Make a Zimlet mandatory.
- Disable a Zimlet, which leaves it on the server, but the Zimlet is not used.

- Undeploy a Zimlet, which removes it from the COS listings and the Zimlets list but does not uninstall the Zimlet from the server.

Note: *You cannot uninstall the Zimlet from the Administration Console.*

Deploying Custom Zimlets

You can download and deploy custom Zimlets from the Zimlet Gallery located on the Zimbra Web site. When a Zimlet is deployed, it is available immediately to everyone in the default COS. If a Zimlet is not deployed to another COS directly, the COS displays the Zimlets but they are not enabled.

Admin Console: **Configure**> **Zimlets**; go to **Gear** icon and select **Deploy**.

1. Browse to the Zimlet you want to deploy, then click **Deploy**.

   The Zimlet deploys to the server. A dialog displays indicating the server name where the Zimlet is deployed and the status of the deployment.

2. Click **Finish**.

   Verify the Zimlet is enabled by viewing the Zimlets page.

Enable, Disable, or Make Zimlets Mandatory

You can enable or disable Zimlets, or make them mandatory. You can also use the toggle feature to enable or disable an installed Zimlet.

Admin Console: On a class of service Zimlets page, select the default Zimlets you want to enable, disable, or make mandatory to users in the COS.

Table 24: Zimlet Operational Status Settings.

Setting	Description
Mandatory	Zimlet will always be enabled in user accounts. Users do not see these Zimlets on their Zimlet page.
Disabled	Zimlet will not be immediately available to users in the associated COS.
Enabled	All deployed Zimlets will be enabled.

Note: *Users can enable or disable optional Zimlets from their account's **Preferences** > **Zimlets** page. If you select a Zimlet as mandatory, it cannot be disabled by the user.*

Undeploying a Zimlet

When a Zimlet is undeployed, it is removed from all COSs and then removed from the LDAP.

Admin Console: **Configure > Zimlets**; select the Zimlet to undeploy.

1. From the Gear icon menu select **Undeploy.**
2. Click **Yes** to confirm.

Adding Proxy-Allowed Domains to a Zimlet

Proxy Allowed Domains lets you configure which external domains can be accessed through a Zimlet. For the Zimlets that are included in ZCS, proxy allowed domains are already configured. If you download and deploy other Zimlets, you can add additional proxy domain names.

Admin Console: **Configure > Class of Service**; select the COS to edit.

1. In the **Advanced** page, scroll down to the **Proxy Allowed Domains** section.
2. Click **Add Domain** to add domains.
3. Click **Save**.

Upgrading a Zimlet

Use the same steps as deploying a new Zimlet to upgrade a customized Zimlet. The new Zimlet zip file should have the same name as the existing Zimlet zip file.

Admin Console: **Configure > Zimlets;** from the Gear icon menu select **Deploy**.

1. Check **Flush Zimlet cache,** so that the upgraded zimlet will be used.
2. Browse to the Zimlet you want to upgrade, then click **Deploy**.
3. Click **Finish**.

Managing Zimlets from the Command Line Interface

The following Zimlet management tasks are available from the command line interface.

Deploying Zimlets

When a Zimlet is deployed, it is available immediately to everyone in the default COS. If a Zimlet is not deployed to another COS directly, the COS displays the Zimlets but they are not enabled.

Deploy a Zimlet using the CLI, including modifying the COS before deploying.

1. Select a Zimlet and copy the Zimlet zip file to **/tmp** folder on your Zimbra server.

2. Login as the zimbra user

   ```
   su - zimbra
   ```

3. Deploy the Zimlet

   ```
   zmzimletctl deploy /tmp/<zimlet>.zip
   ```

Adding Proxy Allowed Domains to a Zimlet

When deploying a Zimlet, the COS attributes, `zimbraProxyAllowedDomains`, must be set for the domain address that the Zimlet might call to get information

CLI: To set the `zimbraProxyAllowedDomains` attribute, type:

```
zmprov mc <COSname> +zimbraProxyAllowedDomains
<*.domain.com>
```

The * must be added before the domain.com.

This must be applied to all COSs that have your Zimlet enabled.

Deploying a Zimlet and Granting Access to a COS

CLI: Use steps in this section to deploy a Zimlet to one or more COSs other than the default:

1. Login as zimbra user:

   ```
   su – zimbra
   ```

2. Copy the Zimlet file from Gallery to **/tmp** folder.

3. Install the Zimlet to the default COS: run `zmzimletctl deploy` **<**path-to-zimlet.zip**>**.
   For example:

   ```
   zmzimletctl deploy /tmp/<zimlet>.zip
   ```

4. To deploy the zimlet to additional COSs, run:

   ```
   zmzimletctl acl <zimletname> <cosname1> grant
   ```

   This will grant permission to cosname1. You can also grant access to more than one COS on the same command line:

   ```
   zmzimletctl acl <zimletname> <cosname1> grant <cosname2>
   grant
   ```

5. To allow this zimlet to use the allowed proxy domains, run the following on each COS and add the allowed domains.

   ```
   zmprov mc <COSname1> +zimbraProxyAllowedDomains <*.
   domain.com>
   ```

   ```
   zmprov mc <COSname2> +zimbraProxyAllowedDomains <*.
   domain.com>
   ```

Viewing Installed Zimlets

CLI: Use the `zmzimletctl` command to view currently installed zimlets:

```
zmzimletctl listZimlets all
```

The output from this command displays the Zimlets installed on the server, installed in LDAP, and those available by COS,

Changing Zimlet Configurations

Some Zimlets may require additional configuration after they are deployed.

The Zimlet configuration template allows you to make changes on the configuration template and then install the new configuration file on the Zimbra server.

CLI: Use steps in this section to change a Zimlet configuration:

1. Extract the configuration template:

   ```
   zmzimletctl getConfigTemplate <zimlet.zip>
   ```

2. Make the required changes in the template, taking care to change only the required areas, then save the file.

Note: *If you have more than one custom Zimlet, rename the config_template.xml file before updating the configuration in LDAP so that files are not overwritten.*

3. Use the `zmzimletctl` command to update the configuration in the LDAP. If you changed the name of the configuration template, replace `config_template.xml` with the new name.

   ```
   zmzimletctl configure config_template.xml
   ```

Upgrading a Zimlet

Upgrading a customized Zimlet is performed by using the same steps as those used to deploy a new Zimlet.

Note: *The new Zimlet zip file should be named identically to the existing Zimlet zip file.*

CLI: Use steps in this section upgrade a zimlet:

1. Copy the Zimlet zip file to the `/opt/zimbra/zimlets-extra` directory, replacing the older version.

2. Deploy the Zimlet

   ```
   zmzimletctl deploy <zimlet.zip file name>
   ```

The Zimlet is copied to the `/opt/zimbra/zimlets-deployed` directory. If your Zimlet includes a .jsp file, the .jsp file is also copied to the `/opt/zimbra/jetty/webapps/zimlet/<zimletnamefolder>`.

3. To ensure availability of the newer version, flush the cache:

   ```
   zmprov flushCache zimlet.
   ```

Using the Zimbra Gallery

You can download and deploy Zimlets from the Zimlet Gallery located on the Zimbra web site. Go to www.zimbra.com/downloads and scroll through the Extensions from the Zimbra Gallery section or select View More to access the Zimbra Gallery.

Developing Customized Zimlets

To develop your own custom Zimlets, see the Zimlet Developers Guide on the Zimbra Wiki at http://wiki.zimbra.com/index.php?title=Main_Page.

Appendix A Command Line Utilities

Command Line Interface (CLI) can be used to create, modify and delete certain features and functions of the Zimbra Collaboration. The Administration Console is the main tool for maintaining the Zimbra Collaboration, but some functions can only be changed from the CLI utility.

The CLI utility can be used for the following purposes:

- Provisioning accounts
- Backup and Restore
- Starting and stopping a service
- Move mailboxes
- Cross-mailbox searches
- Installing self-signed certificates
- Local configuration

*In general, provisioning and managing accounts should be performed from the Administration Console.

General Tool Information

The Zimbra Collaboration command-line utilities follow standard UNIX command-line conventions. Use the following general guidelines with the CLI:

- CLI commands are run as the zimbra user:

  ```
  su - zimbrA
  ```

- The CLI commands are case-sensitive. You must type them in lower case.
- Press **ENTER** after you type a command.
- To display usage information about a command, type the CLI command with `- h`.
  Example: `zmprov - h` lists all the options available for the `zmprov` utility.
- Each operation is invoked through command-line options. Many have a long name and a short name. For example, these two commands are equivalent:

  ```
  zmprov createAccount joe@domain.com test123
  ```

  ```
  zmprov ca joe@domain.com test123
  ```

`Th`

Syntax Conventions

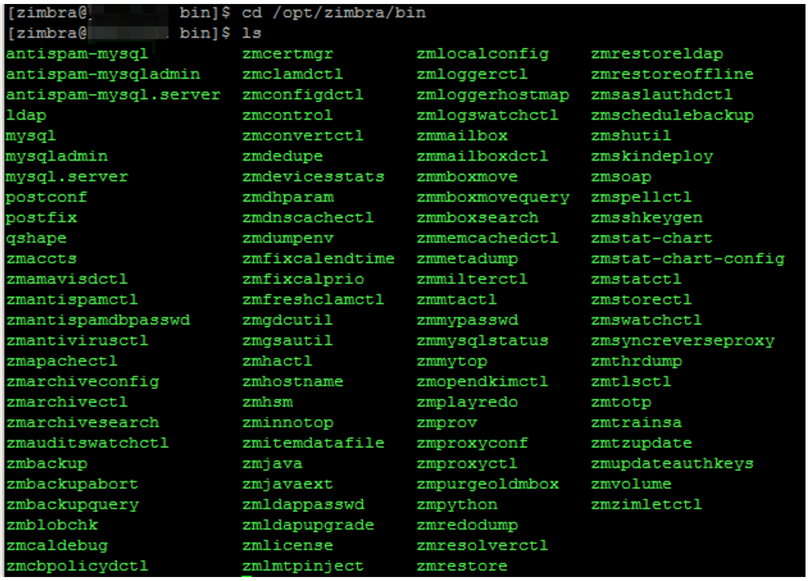
When demonstrating the syntax of each tool, the following conventions indicate required, optional, and alternate values:

- {`attribute`} in curly brackets is required information.
- [`attribute`] in square brackets are optional arguments or information.
- {a|b|c} or [a|b|c] options separated by the pipe character | means “a” OR “b” OR “c”
- For attribute names that may contain spaces, surround the name with double quotes.

Location of Command-Line Utilities

The command-line tools available for administrators are all located in the `/opt/zimbra/bin` directory on the Zimbra Collaboration server.

Zimbra CLI Commands



```
[zimbra@[redacted] bin]$ cd /opt/zimbra/bin
[zimbra@[redacted] bin]$ ls
antispam-mysql         zmcertmgr        zmlocalconfig     zmrestoreldap
antispam-mysqladmin    zmclamdctl       zmloggerctl       zmrestoreoffline
antispam-mysql.server  zmconfigdctl     zmloggerhostmap   zmsaslauthdctl
ldap                   zmcontrol        zmlogswatchctl    zmschedulebackup
mysql                  zmconvertctl     zmmailbox         zmshutil
mysqladmin             zmdedupe         zmmailboxdctl     zmskindeploy
mysql.server           zmdevicesstats   zmmboxmove        zmsoap
postconf               zmdhparam        zmmboxmovequery   zmspellctl
postfix                zmdnscachectl    zmmboxsearch      zmsshkeygen
qshape                 zmdumpenv        zmmemcachedctl    zmstat-chart
zmaccts                zmfixcalendtime  zmmetadump        zmstat-chart-config
zmamavisdctl           zmfixcalprio     zmmilterctl       zmstatctl
zmantispamctl          zmfreshclamctl   zmmtactl          zmstorectl
zmantispamdbpasswd     zmgdcutil        zmmypasswd        zmswatchctl
zmantivirusctl         zmgsautil        zmmysqlstatus     zmsyncreverseproxy
zmapachectl            zmhactl          zmmytop           zmthrdump
zmarchiveconfig        zmhostname       zmopendkimctl     zmtlsctl
zmarchivectl           zmhsm            zmplayredo        zmtotp
zmarchivesearch        zminnotop        zmprov            zmtrainsa
zmauditswatchctl       zmitemdatafile   zmproxyconf       zmtzupdate
zmbackup               zmjava           zmproxyctl        zmupdateauthkeys
zmbackupabort          zmjavaext        zmpurgeoldmbox    zmvolume
zmbackupquery          zmldappasswd     zmpython          zmzimletctl
zmblobchk              zmldapupgrade    zmredodump
zmcaldebug             zmlicense        zmresolverctl
zmcbpolicydctl         zmlmtpinject     zmrestore
```

The table below lists the CLI commands in `/opt/zimbra/bin`.

CLI	Description
`antispam-mysqladmin`	Send admin commands to anti=spam MySQL server
`antispam-mysql`	Enters interactive command-line MySQL session with the mailbox mysql
`antispam-mysql.server`	Start, stop the SQL instance for the mailbox package

CLI	Description
`ldap`	Start, stop, or find the status of Zimbra LDAP
`ldapsearch`	Perform a search on an LDAP server
`logmysqladmin`	Send myslqadmin commands to the logger mysql
`mysql`	Enters interactive command-line MySQL session with the mailbox mysql
`mysql.server`	Start, stop the SQL instance for the mailbox package
`mysqladmin`	Send admin commands to MySQL
`postconf`	Postfix command to view or modify the postfix configuration
`postfix`	Start, stop, reload, flush, check, upgrade-configuration of postfix
`qshape`	Examine postfix queue in relation to time and sender/ recipient domain
`zmaccts`	Lists the accounts and gives the status of accounts on the domain
`zmamavisdctl`	Start, stop, restart, or find the status of the Amavis-D New
`zmantispamctl`	Start, stop, reload, status for anti-spam service
`zmantivirusctl`	Start, stop, reload, status for the anti-virus service
`zmantispamdbpasswd`	Changes anti-spam MySQL database password
`zmapachectl`	Start, stop, reload, or check status of Apache service (for spell check)
`zmauditswatchctl`	Start, stop, restart, reload, status of the auditswatch
`zmcalchk`	Check consistency of appointments and attendees in the Zimbra calendar
`zmcbpolicydctl`	Start, stop, and restart the cluebringer policyd service if enabled
`zmconfigdctl`	Start, stop, kill, restart status of the MTA configuration daemon.
`zmcertmgr`	Manage self-signed and commercial certificates
`zmclamdctl`	Start, stop, or find the status of Clam AV
`zmcleaniplanetics`	Clean iPlanet ICS calendar files
`zmcontrol (Start/ Stop/Restart Service)`	Start, stop, restart, status of the Zimbra servers. Also can use to find the Zimbra version installed
`zmconvertctl`	Start, stop, the conversion server or find the status of the converted attachments conversion/indexing

CLI	Description
`zmdevicesstats`	Number of unique ActiveSync device IDs per server
`zmgdcutil`	(get devices count) gives the total devices system wide without the need of specifying individual servers.
`zmdumpenv`	General information about the server environment is displayed
`zmgsautil`	Global Address Book (GAL) synchronization command line utility. Create, delete the GAL sync account and initiate manual syncs.
`zmhostname`	Find the hostname of the Zimbra server
`zmitemdatafile`	Extracts and packs tgz files that ZCS uses for REST import/export
`zmjava`	Execute Java with Zimbra-specific environment settings
`zmjavaext`	Execute Java and Zimbra-specific environment settings including extension based jars.
`zmldappasswd`	Changes the LDAP password
`zmlmtpinject`	Testing tool
`zmlocalconfig`	Used to set or get the local configuration of a Zimbra server
`zmloggerctl`	Start, stop, reload, or find the status of the Zimbra logger service
`zmloggerhostmap`	Used to manually map a DNS hostname to a zmhostname.
`zmlogswatchctl`	Start, stop, status of the swatch that is monitoring logging
`zmmailbox`	Performs mailbox management tasks
`zmmailboxdctl`	Start, stop, reload, or find the status of the mailbox components (zmmailboxd, MySQL, convert)
`zmmemcachedctl`	Start, stop, and restart
`zmmetadump`	Support tool that dumps an item’s metadata in a human-readable form
`zmmilterctl`	Start, stop, and restart the zimbra milter server if enabled
`zmmtaconfigdctl`	Beginning in ZCS 7.0, this command is not used. Use **zmconfigdctl**.
`zmmtactl`	Start, stop, or find the status of the MTA

CLI	Description
`zmmypasswd`	Change MySQL passwords
`zmmysqlstatus`	Status of mailbox SQL instance
`zmnginxconf`	Command line utility to output the reverse proxy configuration
`zmnginxctl`	Start, stop, and restart the zimbra reverse proxy
`zmprov (Provisioning)`	Performs all provisioning tasks in Zimbra LDAP, including creating accounts, domains, distribution lists and aliases
`zmproxyconfgen`	Generates configuration for the nginx proxy
`zmproxyctl`	Start, stop, restart, and find the status of the IMAP proxy service
`zmproxypurge`	Purges POP/IMAP routing information from one or more memcached servers
`zmpython`	Ability to write Python scripts that access Zimbra Java libraries. It sets the ZCS class path and starts the Jython interpreter.
`zmsaslauthdctl`	Start, stop, or find the status of saslauthd (authentication)
`zmshutil`	Used for other zm scripts, do not use
`zmskindeploy`	Deploy skins for accounts from the command line
`zmsoap`	Print mail, account, and admin information in the SOAP format
`zmspellctl`	Start, stop, or find the status of the spell check server
`zmsshkeygen`	Generate Zimbra's SSH encryption keys
`zmstat-chart`	Generate charts from zmstat data collected in a directory
`zmstat-chart-config`	Outputs an XML configuration that describes the current state of the data gathered from zmstat-chart to generate charts on the Administration Console.
`zmstatctl`	Start, stop, check status, or rotate logs of zmstat data collectors
`zmstorectl`	Start, stop, or find the status of Zimbra store services
`zmswatchctl`	Start, stop, or find the status of the Swatch process, which is used in monitoring
`zmsyncreverseproxy`	Decodes the sync request/responses and logs them when verbose mode is turned on.

CLI	Description
`zmthrdump`	Initiate a thread dump and save the data to a file with a timestamp
`zmtlsctl`	Set the Web server mode to the communication protocol options: HTTP, HTTPS or mixed
`zmtrainsa`	Used to train the anti-spam filter to recognize what is spam or ham
`zmtzupdate`	Provides mechanism to process time zone changes from the command line
`zmupdateauthkeys`	Used to fetch the ssh encryption keys created by zmsshkeygen
`zmvolume`	Manage storage volumes on your Zimbra Mailbox server
`zmzimletctl`	Deploy and configure Zimlets

Using non-ASCII Characters in CLIs

If you use non-ASCII characters in the CLI, in order for the characters to display correctly, you must change this setting to the desired UTF-8 before running the CLI command. To change this, type

```
export LC_All=<UTF_locale>
```

Important: *The default locale on the zimbra user system account is LANG=C. This setting is necessary for starting ZCS services. Changing the default LANG=C setting may cause performance issues with amavisd-new.*

zmprov (Provisioning)

The **zmprov** tool performs all provisioning tasks in Zimbra LDAP, including creating accounts, aliases, domains, COS, distribution lists, and calendar resources. Each operation is invoked through command-line options, each of which has a long name and a short name.

The syntax is `zmprov [cmd] [argument]`.

The syntax for modify can include the prefix “+” or “-” so that you can make changes to the attributes affected and do not need to reenter attributes that are not changing.

- Use + to add a new instance of the specified attribute name without changing any existing attributes.
- Use - to remove a particular instance of an attribute.

The following example would add the attribute **zimbraZimletUserProperties** with the value “blue” to user 1 and would not change the value of any other instances of that attribute.

```
zmprov ma user1 +zimbraZimletUserProperties
"com_company_testing:favoriteColor:blue"
```

The attributes for the tasks `zmprov` can be used with are listed when you type `zmprov -h`. The task area divided into the following sections:

Long Name	Syntax, Example, and Notes
`--help (-h)`	display usage
`--file (-f)`	use file as input stream
`--server (-s)`	{host}[:{port}] server hostname and optional port
`--ldap (-l)`	provision via LDAP instead of SOAP
`--log property file (-L)`	log 4j property file, valid only with -l
`--account  {name} (-a)`	account name to auth as
`--password {pass} (-p)`	password for account
`--passfile {file} (-P)`	read password from file
`--zadmin (-z)`	use Zimbra admin name/password from localconfig for admin/password
`--authtoken (authtoken) (-y)`	use auth token string (has to be in JSON format) from command line
`--authtoken (authtoken file) (-Y)`	use auth token string (has to be in JSON format) from command line
`--verbose (-v)`	verbose mode (dumps full exception stack trace)
`--debug (-d/)`	debug mode (dumps SOAP messages)
`--master (m)`	use LDAP master. This only valid with -l
`--replace (-r)`	allow replacement of safe-guarded multi-value attribute configured in localconfig key **zmprov_saveguarded_attrs**

The commands are categorized and briefly described in the following topics:’

- Account Provisioning Commands, on page 300.
- Calendar Resource Provisioning Commands, on page 301.
- Free Busy Commands, on page 302.
- Domain Provisioning Commands, on page 302.
- COS Provisioning Commands, on page 303.
- Server Provisioning Commands, on page 304.
- Config Provisioning Commands, on page 304.
- Distribution List Provisioning Commands, on page 305.
- Mailbox Commands, on page 305.
- Logs Commands, on page 307.
- Search Commands, on page 307.

- Share Provisioning Commands, on page 308.
- Unified Communication Service Commands, on page 308.
- Unified Communication Service Commands, on page 308.
- IMAP/POP Proxy Commands, on page 308.

Account Provisioning Commands

zmprov—Account Provisioning Commands	

`addAccountAlias (aaa)`	{name@domain|id|adminName} {alias@domain}
	`zmprov aaa joe@domain.com joe.smith@engr.domain.com`

`checkPasswordStrength (cps)`	Syntax: {name@doman|id} {password}
	Note: This command does not check the password age or history.
	`zmprov cps joe@domain.com test123`

`createAccount (ca)`	Syntax:{name@domain} {password} [attribute1 value1 etc] Type on one line. `zmprov ca joe@domain.com test123 displayName JSmith`
`createDataSource (cds)`	{name@domain} {ds-type} {ds-name} zimbraDataSourceEnabled {TRUE|FALSE} zimbraDataSourceFolderId {folder-id} [attr1 value1 [attr2 value2...]]
`createIdentity (cid)`	{name@domain} {identity-name} [attr1 value1 [attr2 value2...]]
`createSignature (csig)`	{name@domain} {signature-name} [attr1 value1 [attr2 value2...]]

`deleteAccount (da)`	Syntax:{name@domain|id|adminName}
	`zmprov da joe@domain.com`

`deleteDataSource (dds)`	{name@domain|id} {ds-name|ds-id}
`deleteIdentity (did)`	{name@domain|id} {identity-name}
`deleteSignature (dsig)`	{name@domain|id} {signature-name}

`getAccount (ga)`	Syntax:{name@domain|id|adminName}
	`zmprov ga joe@domain.com`

`getAccountMembership (gam)`	{name@domain|id}

zmprov—Account Provisioning Commands (Continued)	

`getAllAccounts (gaa)`	Must include -l/--ldap
	Syntax: [-v] [{domain}]
	`zmprov -l gaa`
	`zmprov -l gaa -v domain.com`

`getAllAdminAccounts (gaaa)`	`zmprov gaaa`
`getDataSources (gds)`	{name@domain | id} [arg 1 [arg 2...]]
`getIdentities (gid)`	{name@domain | id} [arg 1 [arg 2...]]
`getSignatures (gsig)`	{name@domain | id} [arg 1 [arg 2...]]
`modifyAccount (ma)`	{name@domain|id|adminName} [attribute1 value1 etc] `zmprov ma joe@domain.com zimbraAccountStatus maintenance`
`modifyDataSource (mds)`	{name@domain | id} {ds-name |ds-id} [attr 1 value 1 [attr2 value 2...]]
`modifyIdentity (mid)`	{name@domain |id} {identity-name} [attr 1 value 1 [attr 2 value 2...]]
`modifySignature (msig)`	{name@domain |id} {signature-name | signature-id} [attr 1 value 1 [attr 2 value 2...]]

`removeAccountAlias (raa)`	{name@domain|id|adminName} {alias@domain}
	`zmprov raa joe@domain.com joe.smith@engr.domain.com`

`renameAccount (ra)`	{name@domain|id} {newname@domain}
	`zmprov ra joe@domain.com joe23@domain.com`

`setAccountCOS (sac)`	{name@domain|id|adminName} {cos-name|cos-id}
	`zmprov sac joe@domain.com FieldTechnician`

`setPassword (sp)`	{name@domain|id|adminName} {password}
	Note: Passwords cannot included accented characters in the string. Example of accented characters that cannot be used: ã, é, í, ú, ü, ñ.
	`zmprov sp joe@domain.com test321`

Calendar Resource Provisioning Commands

zmprov—Calendar Resource Provisioning Commands	
`createCalendarResource (ccr)`	{name@domain} [attr1 value1 [attr2 value2...]]

zmprov—Calendar Resource Provisioning Commands (Continued)	
`deleteCalendarResource (dcr)`	{name@domain|id}
`getAllCalendarResources (gacr)`	[-v] [{domain}]
`getCalendarResource (gcr)`	{name@domain|id}
`modifyCalendarResource (mcr)`	{name@domain|id} [attr1 value1 {attr2 value2...]]
`purgeAccountCalendarCache (pacc)`	{name@domain\id} [...]
`renameCalendarResource (rcr)`	{name@domain|id} {newName@domain}

Free Busy Commands

zmprov—Free Busy Commands	
`getAllFbp (gafbp)`	[-v]
`getFreebusyQueueInfo (gfbqi)`	[{provider-name}]
`pushFreebusy (pfb)`	{domain | account-id} [account-id...]
`pushFreebusyDomain (pfbd)`	{domain}
`purgeFreebusyQueue (pfbg)`	[{provider-name}]

Domain Provisioning Commands

zmprov—Domain Provisioning Commands	
`countAccount (cta)`	{domain|id} This lists each COS, the COS ID and the number of accounts assigned to each COS
`createAliasDomain (cad)`	{alias-domain-name} {local-domain-name|id} [attr1 value1 [attr2 value2...]]
`createDomain (cd)`	{domain} [attribute1 value1 etc] `zmprov cd mktng.domain.com zimbraAuthMech zimbra`

`deleteDomain (dd)`	{domain|id}
	`zmprov dd mktng.domain.com`

zmprov—Domain Provisioning Commands (Continued)	

`getDomain (gd)`	{domain|id}
	`zmprov gd mktng.domain.com`

`getDomainInfo (gdi)`	name|id|virtualHostname {value} [attr1 [attr2...]]
`getAllDomains (gad)`	[-v]
`modifyDomain (md)`	{domain|id} [attribute1 value1 etc] `zmprov md domain.com zimbraGalMaxResults 500` ***Note:*** *Do not modify* **zimbraDomainRenameInfo** *manually. This is automatically updated when a domain is renamed.*
`renameDomain (rd)`	{domain|id} {newDomain} ***Note:*** *renameDomain can only be used with “***zmprov -l/--ldap***”*

COS Provisioning Commands

zmprov—COS Provisioning Commands	
`copyCos (cpc)`	{src-cos-name|id} {dest-cos-name}
`createCos (cc)`	{name} [attribute1 value1 etc] `zmprov cc Executive zimbraAttachmentsBlocked FALSE zimbraAuthTokenLifetime 60m zimbraMailQuota 100M zimbraMailMessageLifetime 0`

`deleteCos (dc)`	{name|id}
	`zmprov dc Executive`

`getCos (gc)`	{name|id}
	`zmprov gc Executive`

`getAllCos (gac)`	[-v] `zmprov gac -v`
`modifyCos (mc)`	{name|id} [attribute1 value1 etc] `zmprov mc Executive zimbraAttachmentsBlocked TRUE`

`renameCos (rc)`	{name|id} {newName}
	`zmprov rc Executive Business`

Server Provisioning Commands

zmprov—Server Provisioning Commands	
`createServer (cs)`	{name} [attribute1 value1 etc]

`deleteServer (ds)`	{name|id}
	`zmprov ds domain.com`

`getServer (gs)`	{name|id}
	`zmprov gs domain.com`

`getAllServers (gas)`	[-v] `zmprov gas`
`modifyServer (ms)`	{name|id} [attribute1 value1 etc] `zmprov ms domain.com zimbraVirusDefinitionsUpdateFrequency 2h`
`getAllMtaAuthURLs (gamau)`	Used to publish into saslauthd.conf what servers should be used for saslauthd.conf MTA auth
`getAllMemcachedServers (gamcs)`	Used to list memcached servers (for nginix use).

Config Provisioning Commands

zmprov—Config Provisioning Commands	
`getAllConfig (gacf)`	[-v] All LDAP settings are displayed
`getConfig (gcf)`	{name}
`modifyConfig (mcf)`	attr1 value1 Modifies the LDAP settings.
`createXMPPComponent (csc)`	{short-name} {domain} {server} {classname} {category} {type} [attr value1 [attr2 value2...]]
`deleteXMPPComponent (dxc)`	{xmpp-component-name}
`getXMPPComponent (gxc)`	{name@domain} [attr1 [attr2 value2]]
`modifyXMPPComponent (mxc)`	{name@domain} [attr1 [attr2 value2]]

Distribution List Provisioning Commands

zmprov—Distribution List Provisioning Commands	

`createDistributionList (cdl)`	{list@domain}
	`zmprov cdl needlepoint-list@domain.com`

`addDistributionListMember (adlm)`	{list@domain|id} {member@domain}
	`zmprov adlm needlepoint-list@domain.com singer23@mail.free.net`

`removeDistributionListMember (rdlm)`	{list@domain|id}
	`zmprov rdlm needlepoint-list@domain.com singer23@mail.free.net`

`getAlldistributionLists (gadl)`	[-v]
`get DistributionListmembership (gdlm)`	{name@domain|id} Note: gdlm can not be used for gynamic groups, as dynamic groups cannot be nested.

`getDistributionList (gdl)`	{list@domain|id}
	`zmprov gdl list@domain.com`

`modifyDistributionList (mdl)`	{list@domain|id} attr1 value1 {attr2 value2...}
	`zmprov md list@domain.com`

`deleteDistributionList (ddl)`	(list@domain|id}
`addDistributionListAlias (adla)`	{list@domain|id} {alias@domain}
`removeDistributionListAlias (rdla)`	{list@domain|id} {alias@domain}
`renameDistributionList (rdl)`	{list@domain|id} {newName@domain}

Mailbox Commands

zmprov—Mailbox Commands	
`getMailboxInfo--- (gmi)`	{account}
`getQuotaUsage--- (gqu)`	{server}
`reIndexMailbox (rim)`	{name@domain|id} {start|status|cancel} [{reindex-by} {value1} [value2...]]

zmprov—Mailbox Commands (Continued)	
`RecalculateMailbox Counts (rmc)`	{name@domain|id} When unread message count and quota usage are out of sync with the data in the mailbox, use this command to immediately recalculate the mailbox quota usage and unread messages count. ***Important:*** *Recalculating mailbox quota usage and message count should be schedule to run in off peak hours and used on one mailbox at a time.*
`reIndexMailbox (rim)`	{start|status|cancel} [{types|ids} {type or id} [,type or id...]]
`compactIndexMailbox (cim)`	{name@domain|id} {start|status}
`verifyIndex (vi)`	{name@domain|id}
`getIndexStats (gis)`	{name@domain|id}
`selectMailbox (sm)`	{account-name} [{zmmailbox commands}]

Miscellaneous Provisioning Commands

zmprov—Miscellaneous Provisioning Commands	
`countObjects (cto)`	{type} [-d {domain|id}]. countObjects can only be used with zmprov -l/--ldap
`createBulkAccounts (cabulk)`	{domain} {namemask} {number of accounts to create}
`describe (desc)`	[[-v] [-ni] [{entry-type}]] | [-a {attribute-name}] Prints all attribute names (account, domain, COS, servers, etc.).
`flushCache (fc)`	[-a] {acl|locale|skin|uistrings|license|all|account|config|globalgrant|cos|domain|galgroup|group|mime|server|zimlet|<extension-cache-type>} [name1|id1 [name2|i d2...]] Flush cached LDAP entries for a type. See Chapter 5, Zimbra LDAP Service
`generateDomainPreAuth Key (gdpak)`	{domain|id} Generates a pre-authentication key to enable a trusted third party to authenticate to allow for single-sign on. Used in conjunction with GenerateDomainPreAuth.

zmprov—Miscellaneous Provisioning Commands (Continued)	
`generateDomainPreAuth (gdpa)`	{domain|id} {name} {name|id|foreignPrincipal} {timestamp|0} {expires|0} Generates preAuth values for comparison.
`syncGal (syg)`	{domain} [{token}]
`getAccountLogger (gal)`	[-s /--server hostname] {name@domain | id}

Logs Commands

zmprov—Logs Commands	
`addAccount Logger (aal)`	{name@domain|id} {logging-category} {debug|info|warn|error} Creates custom logging for a single account
`getAccountLoggers (gal)`	[-s/--server hostname] {name@domain|id} {logging-category} {debug|info|warn|error}
`getAllAccountLoggers (gaal)`	[-s/--server hostname] Shows all individual custom logger account
`removeAccountLogger (ral)`	[-s/ --server hostname] {name@domain|id} {logging-category} When name@domain is specified, removes the custom logger created for the account otherwise removes all accounts all account loggers from the system.
`resetAllLoggers (rlog)`	This command removes all account loggers and reloads /opt/zimbra/conf/log4j.properties. [-s/--server hostname]
See the zmprov Log Categories for a list of logging categories.	

Search Commands

zmprov—Search Commands	

`searchGAL (sg)`	{domain} {name}
	`zmprov sg joe`

`autoCompleteGal (acg)`	{domain} {name}
`searchAccounts (sa)`	[-v] {ldap-query} [limit] [offset] [sortBy {attribute} [sortAscending 0|1] [domain {domain}]
`searchCalendarResources (scr)`	[-v] domain attr op value {attr op value...]

Share Provisioning Commands

zmprov—Share Provisioning Commands	
`getShareInfo (gsi)`	{owner-name|owner-id}

Unified Communication Service Commands

zmprov—Unified Communication Service Commands	
`createUCService (cucs)`	{name} [attr1 value1 [attr2 value2...]]
`deleteUCService (ducs)`	{name|id}
`getAllUCServices (gaucs)`	[-v]
`getUCService (gucs)`	[-e] {name|id} [attr1 [attr2...]]
`modifyUCService (mucs)`	{name|id} [attr1 value1 [attr2 value2...]]
`renameUCService (rucs)`	{name|id} {newName}

IMAP/POP Proxy Commands

zmprov—IMAP/POP Proxy Commands	
`--getAllReverseProxy URLs (garpu)`	Used to publish into nginx.conf the servers that should be used for reverse proxy lookup.
`--getAllReverseProxy Backends (garpb)`	Returns the list of servers that have **zimbraReverseProxyLookupTarget=TRUE.** Basically if a mailbox server is available for lookup requests from the proxy.
`--getAllReverseProxy Domains (garpd)`	Returns a list of all domains configured with **ZimbraSSLCertificate zimbraVirtualHostname** and **zimbraVirtualIPAddress** configured. This allows the proxy to configure a list of domains to serve customized/domain certificates for.

Examples—using zmprov

- Creating an account with a password that is assigned to the default COS:

  ```
  zmprov ca name@domain.com password
  ```

- Creating an account with a password that is assigned to a specified COS. You must know the COS ID number. To find a COS ID, type `zmprov gc <COSname>`.

```
zmprov ca name@domain.com password zimbraCOS
 cosIDnumberstring
```

- Creating an account when the password is not authenticated internally:

  ```
  zmprov ca name@domain.com ‘’
  ```

  The empty single quote is required and indicates that there is no local password.

- Using a batch process to create accounts, see Chapter 12, Provisioning User Accounts for the procedure.
- Bulk provisioning: see the Zimbra wiki page http://wiki.zimbra.com/wiki/Bulk_Provisioning.
- Adding an alias to an account:

  ```
  zmprov aaa accountname@domain.com aliasname@domain.com
  ```

- Creating a distribution list. The ID of the distribution list is returned:

  ```
  zmprov cdl listname@domain.com
  ```

- Adding a member to a distribution list.
  Tip: You can add multiple members to a list from the Administration Console.

  ```
  zmprov adlm listname@domain.com member@domain.com
  ```

- Changing the administrator’s password.
  Use this command to change any password. Enter the address of the password to be changed.

  ```
  zmprov sp admin@domain.com password
  ```

- Creating a domain that authenticates against zimbra OpenLDAP:

  ```
  zmprov cd marketing.domain.com zimbraAuthMech zimbra
  ```

- Setting the default domain:

  ```
  zmprov mcf zimbraDefaultDomain domain1.com
  ```

- Listing all COSs and their attribute values:

  ```
  zmprov gac -v
  ```

- Listing all user accounts in a domain (domain.com):

  ```
  zmprov gaa domain.com
  ```

- Listing all user accounts and their configurations:

  ```
  zmprov gaa -v domain.com
  ```

- Enabling logger on a single server:

  ```
  zmprov ms server.com +zimbraServiceEnabled logger
  ```

  Then type `zmloggerctl start`, to start the logger.

- Querying a value for a multi-valued attribute:

  ```
  zmprov gs server.com attribute=value
  ```

For example, `zmprov gs example.com zimbraServiceEnabled=ldap` to find out if the ldap service is enabled.

- To modify the purge interval, set `zimbraMailPurgeSleepInterval` to the duration of time that the server should “sleep” between every two mailboxes. Type:

  ```
  zmprov ms server.com zimbraMailPurgeSleepInterval <Xm>
  ```

  X is the duration of time between mailbox purges; **m** represents minutes. You could also set **<xh>** for hours.

- Modify `zimbraNewMailNotification` to customize the notification email template. A default email is sent from Postmaster notifying users that they have received mail in another mailbox. To change the template, you modify the receiving mailbox account. The variables are

  - `${SENDER_ADDRESS}`
  - `${RECIPIENT_ADDRESS}`
  - `${RECIPIENT_DOMAIN}`
  - `${NOTIFICATION_ADDRESSS}`
  - `${SUBJECT}`
  - `${NEWLINE}`

  You can specify which of the above variables appear in the **Subject**, **From**, or **Body** of the email. The following example is changing the appearance of the message in the body of the notification email that is received at **name@domain.com**. You can also change the template in a class of service, use `zmprov mc`. The command is written on one line.

  ```
   zmprov ma name@domain.com zimbraNewMailNotificationBody
  ‘Important message from
  ${SENDER_ADDRESS}.${NEWLINE}Subject:${SUBJECT}’
  ```

- Enable the SMS notification by COS, account or domain:

  - `zmprov mc <default> zimbingaFeatureCalendarReminderDeviceEmailEnabled TRUE`
  - `zmprov ma <user1> zimbraFeatureCalendarReminderDeviceEmailEnabled TRUE`
  - `zmprov md <domain> zimbraFeatureCalendarReminderDeviceEmailEnabled TRUE`

- Enable the Activity Stream feature for a COS or set of users

  - `zmprov mc <default> zimbraFeaturePriorityInboxEnabled TRUE`
  - `zmprov ma <user1> zimbraFeaturePriorityInboxEnabled TRUE`

Configure Auto-Grouped Backup from the CLI

Set the backup method in the global configuration, and you can override the configuration on a per server basis if you do not want a server to use the auto-grouped backup method.

To set up auto-grouped backup, you modify LDAP attributes using the zmprov CLI. Type the command as

```
zmprov mcf <ldap_attribute> <arg>
```

You can also set the attributes at the server level using `zmprov ms`.

The following LDAP attributes are modified:

- `zimbraBackupMode`. Set it to be **Auto-Grouped.** The default is Standard.
- `zimbraBackupAutoGroupedInterval`. Set this to the interval in either days or weeks that backup sessions should run for a group. The default is 1d. Backup intervals can be 1 or more days, entered as xd (1d); or 1 or more weeks, entered as xw (1w).
- `zimbraBackupAutoGroupedNumGroups`. This the number of groups to spread mailboxes over. The default is 7 groups.

Changing Conversations Thread Default

Messages can be grouped into conversations by a common thread. The default is to thread messages in a conversation by the References header. If there is no References header, the Subject is used to determine the conversation thread. The default options can be changed from the COS or for individual accounts.

```
zmprov mc [cosname] zimbraMailThreadingAlgorithm [type]
```

The types include:

- **none**. no conversation threading is performed.
- **subject**. the message will be threaded based solely on its normalized subject.
- **strict**. only the threading message headers (References, In-Reply-To, Message-ID, and Resent-Message-ID) are used to correlate messages. No checking of normalized subjects is performed.
- **references**. the same logic as "strict" with the constraints slightly altered so that the non-standard Thread-Index header is considered when threading messages and that a reply message lacking References and In-Reply-To headers will fall back to using subject-based threading.
- **subjrefs**. the same logic as "references" with the further caveat that changes in the normalized subject will break a thread in two.

Detecting Corrupted Indexes

Run `zmprov verifyIndex` as a sanity check for the specified mailbox index. Diagnostic information is written to stdout. If problems are detected, a failure status is returned.

VerifyIndex locks the index while it's running, and checks every byte in the index. Therefore, it's not recommended to run this on a regular basis such as in a cron job. The zmprov verifyIndex command should be used only when you need to make a diagnosis.

```
zmprov verifyIndex <user@example.com>
```

If VerifyIndex reports that the index is corrupted, you can repair the mailbox index by running `reIndexMailbox` **(**`rim`**).**

```
zmprov rim <user@example.com> start
```

zmprov Log Categories

`zimbra.account`	Account operations
`zimbra.acl`	ACL operations
`zimbra.backup`	Backup and restore
`zimbra.cache`	Inmemory cache operations
`zimbra.calendar`	Calendar operations
`zimbra.dav`	DAV operations
`zimbra.dbconn`	Database connection tracing
`zimbra.extensions`	Server extension loading
`zimbra.filter`	Mail filtering
`zimbra.gal`	GAL operations
`zimbra.imap`	IMAP protocol operations
`zimbra.index`	Index operations
`zimbra.io`	Filesystem operations
`zimbra.ldap`	LDAP operations
`zimbra.lmtp`	LMTP operations (incoming mail)
`zimbra.mailbox`	General mailbox operations
`zimbra.misc`	Miscellaneous
`zimbra.op`	Changes to mailbox state
`zimbra.pop`	POP protocol operations
`zimbra.redolog`	Redo log operations
`zimbra.security`	Security events
`zimbra.session`	User session tracking
`zimbra.smtp`	SMTP operations (outgoing mail)
`zimbra.soap`	SOAP protocol
`zimbra.sqltrace`	SQL tracing

`zimbra.store`	Mail store disk operations
`zimbra.sync`	Sync client operations
`zimbra.system`	Startup/shutdown and other system messages
`zimbra.wiki`	Wiki operations
`zimbra.zimlet`	Zimlet operations

zmaccts

Use zmaccts to run a report that lists all the accounts, their status, when they were created and the last time anyone logged on. The domain summary shows the total number of accounts and their status.

Syntax

```
zmaccts
```

zmcalchk

Use `zmcalchk` to check the consistency of appointments on the Zimbra calendar and sends an email notification regarding inconsistencies. For example, it checks if all attendees and organizers of an event on the calendar agree on start/stop times and occurrences of a meeting.

See the output of **zmmailbox help appointmen**t for details on time-specs.

Syntax

```
zmcalchk [-d] [-n <type>] <user> <start-time-spec> <end-time-
spec>
```

Description

Short Name	Description
`-d`	Debugs verbose details
`-m`	Allows the user to specify the maximum number of attendees to check. The default value is 50.
`-n`	-n none |user |organizer |attendee |all Send email notifications to selected users if they are out of sync for an appointment

zmcontrol (Start/Stop/Restart Service)

Use `zmcontrol` to start, to stop, or to restart services. You can also find which version of the Zimbra Collaboration is installed.

Syntax

```
zmcontrol [ -v -h ] command [args]
```

Description

Long Name	Short Name	Description
	`-v`	Displays ZCS software version.
	`-h`	Displays the usage options for this command.
	`-H`	Host name (localhost).
Command in...		
`maintenance`		Toggle maintenance mode.
`restart`		Restarts all services and manager on this host.
`shutdown`		Shutdown all services and manager on this host. When the manager is shutdown, you cannot query that status.
`start`		Startup manager and all services on this host.
`startup`		Startup manager and all services on this host.
`status`		Returns services information for the named host.
`stop`		Stop all services but leaves the manager running.

zmgsautil

Use `zmgsautil` to create or delete the GAL sync account, and to force syncing of the LDAP data to the GAL sync account.

A GAL sync account is created when the GAL is configured on a domain. This account is created and the polling interval for performing a full sync is managed from the Administration Console.

To see attributes and settings for a GAL sync account, run **zmprov gds** against the account.

Long Name	Description
`createAccount`	Creates the GAL sync account. This should be done from the Administration Console. The parameter “server” is required. `-a {account-name} -n {datasource-name} --domain {domain-name} -t zimbra|ldap -s {server} [-f {folder-name}] [-p {polling-interval}]`
addDataSource	When configuring a datasource for a server, specify a folder name other than `/Contacts`. The datasource folder name must be unique. -a `{account-name} -n {datasource-name} --domain {domain-name} -t zimbra|ldap [-f {folder-name}] [-p {polling-interval}]`
`deleteAccount`	Deletes the GAL sync account and the references to the LDAP server. The account can also be deleted from the Administration Console. `deleteAccount [-a {galsynceaccountname}|-i {account-id}]`
`trickleSync`	This syncs new and updated contact data only. `[-a {galsynceaccountname}|-i {account-id}] [-d {datasource-id}] [-n {datsource-name}]` The datasource ID the LDAP datasource ID. The datasource name is the name of the address book (folder) in the GAL account created to sync LDAP to. A cron job can be set up to run trickleSync.
`fullSync`	This syncs all LDAP contact data. You can also set this from the Administration Console. `[-a {galsynceaccountname}|-i {account-id}] [-d {datasource-id}] [-n {datsource-name}]`
`forceSync`	This should be used to reload the entire GAL if there is change in the filter, attribute mapping or LDAP server parameters. `[-a {galsynceaccountname}|-i {account-id}] [-d {datasource-id}] [-n {datsource-name}]`

zmldappasswd

Use `zmldappasswd` to change the LDAP password on the local server. In multi node environments, this command must be run on the LDAP master server only.

This CLI command used with options changes other passwords.

For better security and audit trails the following passwords are generated in ZCS:

- **LDAP Admin password**. This is the master LDAP password.
- **LDAP Root password**. This is used for internal LDAP operations.

- **LDAP Postfix password**. This is the password used by the postfix user to identify itself to the LDAP serve and must be configured on the MTA server to be the same as the password on the LDAP master server.
- **LDAP Amavis password**. This is the password used by the amavis user to identify itself to the LDAP server and must be configured on the MTA server to be the same as the password on the LDAP server.
- **LDAP Replication password**. This is the password used by the LDAP replication user to identify itself to the LDAP master and must be the same as the password on the LDAP master server.

Syntax

```
opt/zimbra/bin/zmldappasswd [-h] [-r] [-p] [-l] new password
```

Description

Name	Syntax, Example, Notes
`-h`	Displays the help
`-a`	Changes **ldap_amavis-password**
-b	change **ldap_bes_searcher_password**
`-l`	Changes **ldap_replication_password**
`-p`	Changes **ldap_postfix_password**
-n	change **ldap_nginx_password**
`-r`	Changes **ldap_root_passwd**
-c	Updates the password in the config database on replicas. Must be used with -1 and must be run on a replica after changing the password on the master
Only one of a, l, p, or r can be specified. If options are not included, the zimbra_ldap_password is changed.	

zmlocalconfig

Use `zmlocalconfig` to set or get the local configuration for a zimbra server. Use `zmlocalconfig -i` to see a list of supported properties that can be configured by an administrator.

Syntax

```
zmlocalconfig [options]
```

To see the local config type `zmlocalconfig`

Description

Long Name	Short Name	Description
`--config`	`-c`	`<arg>` File in which the configuration is stored
`--default`	`-d`	Show default values for keys listed in [args]
`--edit`	`-e`	Edit the configuration file, change keys and values specified. The [args] is in the key=value form.
`--force`	`-f`	Edit the keys whose change is known to be potentially dangerous
`--help`	`-h`	Shows the help for the usage options for this tool
`--info`	`-i`	Shows the list of supported properties.
`--format`	`-m`	`<arg>` Shows the values in one of these formats: plain (default), xml, shell, nokey.
`--changed`	`-n`	Shows the values for only those keys listed in the [args] that have been changed from their defaults
`--path`	`-p`	Shows which configuration file will be used
`--quiet`	`-q`	Suppress logging
`--random`	`-r`	This option is used with the edit option. Specified key is set to a random password string.
`--show`	`-s`	Forces the display of the password strings
`--unset`	`-u`	Remove a configuration key. If this is a key with compiled-in defaults, set its value to the empty string.
`--expand`	`-x`	Expand values
`--zimbraAmavisMaxServers`		Allows control of the concurrency of Amavisd (default 10).
`--zimbraClamAVMaxThreads`		Allows control of the concurrency of ClamAV (default 10).

zmmailbox

Use `zmmailbox` for mailbox management. The command can help administrators provision new mailboxes along with accounts, debug issues with a mailbox, and help with migrations.

You can invoke the `zmmailbox` command from within the `zmprov` command. You enter `selectMailbox` within `zmprov` to access the `zmmailbox` command connected to that specified mailbox. You can then enter `zmmailbox` commands until you type `exit`. Exit returns you to `zmprov`. This is useful when you want to create accounts and also pre-create some folders, tags, or saved searches at the same time.

Syntax

```
zmmailbox [args] [cmd] [cmd-args ...]
```

Description

Short Name	Long Name	Syntax, Example, and Notes
`-h`	`--help`	display usage
`-f`	`--file`	use file as input stream
`-u`	`--url`	http[s]://{host}[:{port}] server hostname and optional port. Must use admin port with -z/-a
`-a`	`--account {name}`	account name to auth as
`-z`	`--zadmin`	use zimbra admin name/password from localconfig for admin/password
`-y`	`--authtoken (authtoken)`	use authtoken string (has to be in JSON format) from command line
`-Y`	`--authtoken (authtoken file)`	use authtoken string (has be in JSON format) from command line
`-m`	`--mailbox {name}`	mailbox to open. Can be used as both authenticated and targeted unless other options are specified.
	--auth `{name}`	account name to authorize as. Defaults to --mailbox unless --admin-priv is used
-A	--admin-priv	execute requests with admin privilege
`-p`	`--password {pass}`	password for admin account and or mailbox
`-P`	`--passfile {file}`	read password from file
-t	--timeout	timeout (in seconds)
`-v`	`--verbose`	verbose mode (dumps full exception stack trace)
`-d`	`--debug`	debug mode (dumps SOAP messages)

Specific CLI tools are available for the different components of a mailbox. Usage is described in the CLI help for the following.

`zmmailbox help admin`	help on admin-related commands
`zmmailbox help commands`	help on all commands
`zmmailbox help appointment`	help on appointment-related commands
`zmmailbox help commands`	help on all zmmailbox commands
`zmmailbox help contact`	help on contact-related commands (address book)
`zmmailbox help conversation`	help on conversation-related commands
`zmmailbox help filter`	help on filter-related commands
`zmmailbox help folder`	help on folder-related commands
`zmmailbox help item`	help on item-related commands
`zmmailbox help message`	help on message-related commands
`zmmailbox help misc`	help on miscellaneous commands
`zmmailbox help right`	help on right commands
`zmmailbox help search`	help on search-related commands
`zmmailbox help tag`	help on tag-related commands

Examples

- When you create an account, you may want to pre-create some tags and folders. You can invoke `zmmailbox` inside of `zmprov` by using “`selectMailbox`(`sm`)”

```
domain.example.com$ /opt/zimbra/bin/zmprov
prov> ca user10@domain.example.com test123
9a993516-aa49-4fa5-bc0d-f740a474f7a8
prov> sm user10@domain.example.com
mailbox: user10@domain.example.com, size: 0 B, messages: 0,
unread: 0
mbox user10@domain.example.com> createFolder /Archive
257
mbox user10@domain.example.com> createTag TODO
64
mbox user10@domain.example.com> createSearchFolder /unread
"is:unread"
258
mbox user10@domain.example.com> exit
prov>
```

- To find the mailbox size for an account

```
zmmailbox -z-m user@example.com gms
```

- To send requests to a mailbox using the admin auth token. This is required when using the command emptyDumpster. Use --admin-priv to skip delegated auth as the target mailbox.

```
zmmailbox -z --admin-priv -m foo@example.com emptyDumpster
```

- Use --admin-priv with select Mailbox command

```
zmmailbox -z mbox> sm --admin-priv foo@domain.com
```

- To authenticate as a delegated admin user. This lets one user login to another user's mailbox. The authenticating user must be a delegated admin account and must have **adminLoginAs** right on the target mailbox. This auth option uses a non-admin auth token. Use the --auth option to specify the authenticating account. To login as user bar and open mailbox foo:

```
$ zmmailbox --auth bar@example.com -p password -m foo@example.com
```

- To find the mailbox size for an account

```
zmmailbox -z-m user@example.com gms
```

- To find the mailbox size for an account

```
zmmailbox -z-m user@example.com gms
```

- When you use zmmailbox to backup individual mailboxes, you can save the file as either a zip file or a tgz file. The default settings for the information that is saved in these formats is different.

File	TGZ	ZIP
Briefcase	X	X
Calendar		X
Conversations		X
Contacts	X	X
Deleted Messages	X	X
Emailed Contacts		X
Inbox	X	X
Sent	X	X
Sent Messages	X	X
Tasks		X

To include all the mailbox content in a zip file, you must enable the meta data. Type as

```
zmmailbox -z-m user@example.com gru "?fmt=zip&meta=1" > /
<filename.zip>
```

zmtlsctl

Use `zmtlsctl` to set the Web server zimbraMailMode to the communication protocol options: HTTP, HTTPS, Mixed, Both and Redirect. The default setting is HTTPS.

- **HTTP**. HTTP only, the user would browse to http://zimbra.domain.com.
- **HTTPS.** HTTPS only (default), the user would browse to https:/ zimbra.domain.com. http:// is denied.
- **Mixed** If the user goes to http:// it will switch to https:// for the login only, then will revert to http:// for normal session traffic. If the user browses to https://, then the user will stay https://
- **Both** A user can go to http:// or https:// and will keep that mode for the entire session.
- **Redirect** Like mixed if the user goes to http:// it will switch to https:// but they will stay https:// for their entire session.

All modes use SSL encryption for back-end administrative traffic.

Important: *Only zimbraMailMode HTTPS can ensure that no listener will be available on HTTP/port 80, that no client application will try to auth over HTTP, and that all data exchanged with the client application will be encrypted.*

Mailboxd has to be stopped and restarted for the change to take effect.

Syntax

```
zmtlsctl [mode]
```

mode = http, https, mixed, both, redirect

Steps to run

1. Type `zmtlsctl [mode]` and press **ENTER**.
2. Type `zmmailboxdctl stop` and press **ENTER.**
3. When mailboxd is stopped, type `zmmailboxdctl start` and press **ENTER.**

Limitations When Using Redirect

- Many client applications send an auth request in the initial HTTP request to the Server (“blind auth”). The implications of this are that this auth request is sent in the clear/unencrypted prior to any possible opportunity to redirect the client application to HTTPS.
- Redirect mode allows for the possibility of a man-in-the-middle attack, international/unintentional redirection to a non-valid server, or the possibility that a user will mis type the server name and not have certificate-based validity of the server.
- In many client applications, it is impossible for users to tell if they have been redirected (for example, ActiveSync), and therefore the users continue to use HTTP even if the auth request is being sent unencrypted.

zmmetadump

The `zmmetadump` command is a support tool that dumps the contents of an item's metadata in a human readable form.

Syntax

```
zmmetadump -m <mailbox id/email> -i <item id>
```

or `zmmetadump -f <file containing encoded metadata>`

zmmypasswd

Use `zmmypasswd` to change **zimbra_mysql_password**. If the --root option is specified, the **mysql_root_passwd** is changed. In both cases, MySQL is updated with the new passwords. Refer to the MySQL documentation to see how you can start the MySQL server temporarily to skip grant tables, to override the root password.

Note: This requires a restart for the change to take effect.

Syntax

`zmmypasswd [--root] <new_password>`.

zmproxyconfgen

Use `zmproxyconfgen` to generate the nginx proxy configuration files. It reads LDAP settings to replace template variables and generates the final nginx configuration.

Syntax

```
ProxyConfGen [options]
```

Description

Long Name	Short Name	Description
`--config`	`-c`	<arg> Overrides a config variable. The <arg> format should be name=value. To see a list of names, use `-d` or `-D`
`--defaults`	`-d`	Prints the default variable map
--definitions	-D	Prints the Definitions variable map after loading LDAP configuration and processing overrides
--help	-h	Displays help information

Long Name	Short Name	Description
--include-dir	-i	<arg> Displays the directory path (relative to $workdir/conf), where included configuration files are written
--dry-run	-n	Specifies not to write configuration and only display the files that would be written
`--prefix`	`-p`	<arg> Displays the config file prefix. The default value is nginx.conf
`--template-prefix`	`-P`	<arg> Displays the template file prefix. The default value is $prefix
`--server`	`-s`	<arg> Specifies a valid server object. Configuration is generated based on the specified server's attributes. The default is to generate configuration based on global configuration values
--templatedir	-t	<arg>Specifies the proxy template directory. The default value is $workdir/conf/nginx/templates
--verbose	-v	Displays verbose data
--workdir	-w	<arg> Specifies the proxy working directory. The default value is /opt/zimbra

zmproxypurge

Use `zmproxypurge` to purge POP/IMAP proxy routing information from one or more memcached servers. Available memcached servers are discovered by the `zmprov gamcs` function. Others can be specified if necessary using the server port.

Syntax

```
ProxyPurgeUtil [-v] [-i] -a account [-L accountlist] [cache1
[cache2...]]
```

Description

Long Name	Short Name	Description
`--help`	`-h`	Shows the help for the usage options for this tool.
`--verbose`	`-v`	Displays verbose data
`--info`	`-i`	Displays account routing information
`--account`	`-a`	Displays account name
`--list`	`-L`	Displays file containing list of accounts, one per line

Long Name	Short Name	Description
`--output`	`-o`	Specifies the format to be used for printing routing information with information. The fields that display by default are • cache server • account name • route information
`cacheN`		(optional command) Specifies additional memcache server in the form of server:port

zmskindeploy

Use `zmskindeploy` to simplify the process of deploying skins in ZWC. This tool processes the skin deployment, enables the skin for all users of the ZWC deployment, and restarts the web server so that it recognizes the new skin.

For more information about this tool, see http://wiki.zimbra.com/index.php?title=About_Creating_ZCS_Themes

Syntax

```
zmskindeploy <path/to/skin/dir/or/zipfile>
```

zmsoap

Use zmsoap to print mail, account, and admin information in the SOAP format.

Syntax

```
zmsoap [options] <path1 [<path2>...]
```

Description

Long Name	Short Name	Description
`--help`	`-h`	Prints usage information
`--mailbox`	`-m`	<name> Displays mailbox account name. Mail and account requests are sent to this account. This attribute is also used for authentication if `-a` and `-z` are not specified
--target		<name>Displays the target account name to which the requests are sent. Used only for non-admin sessions
--admin name	-a	<name>Displays the admin account name to authenticate as
--zadmin	-z	Displays the Zimbra admin name and password to authenticate as

Long Name	Short Name	Description
--password	-p	<pass>Displays account password
`--passfile`	`-P`	<path> Reads password from a file
`--element`	`-e`	<path> Displays the root element path. If specified, all path arguments that do not start with a slash (/) are relative to this element
`--type`	`-t`	<type> Displays the SOAP request type. Can either be mail, account, or admin
--url	-u	<http[s]://...> Displays the server hostname and optional port value
--verbose	-v	Prints the SOAP request and other status information
path		<[path...]> Displays the element or attribute path and value. Roughly follows the XPath syntax as: [/]element1[/element2][/@attr][=value]

zmstat-chart

Use `zmstat-chart` to collect statistical information for the CPU, IO, mailboxd, MTAqueue, MySQL, and other components and to run a script on the csv files to display the usage details in various charts. These csv files are saved to **/opt/zimbra/zmstat/**.

You must enable `zmstat` to collect the performance charts data:

1. Enter `zmprov ms {hostname} zimbraServerEnable : stats.`
2. Restart the server, enter

   ```
   zmcontrol stop
   zmcontrol start
   ```

Syntax

```
zmstat-chart -s <arg> -d <arg> [options]
```

Description

Long Name	Short Name	Description
`--aggregate-end-at`		<arg> If this is specified, the aggregate computation ends at this timestamp. Usage is MM/dd/yyyy HH:mm:ss.
`--aggregate-start-at`		<arg> If this is specified, the aggregate computation starts at this timestamp. Usage is MM/dd/yyyy HH:mm:ss.

Long Name	Short Name	Description
--end-at		<arg> If this is specified, all samples after the specified timestamp are ignored. Usage is MM/dd/yyyy HH:mm:ss.
--start-at		<arg> If this is specified, all samples before this timestamp are ignored.
--title		<arg> This gives the chart a title that displays. Defaults to the last directory name of srcdir.
--no-summary		Summary data generation is not included.
`--conf`	`-c`	<arg> Chart the configuration xml files.
`--destdir`	`-d`	<arg> The directory where the generated chart files are saved.
`--srcdir`		One or more directories where the csv files are located. The csv files are moved to directories listed by date under zmstat/.

zmstat-chart-config

Use zmstat-chart-config to generate an xml file **/opt/zimbra/conf/zmstat-chart.xml** from a template, taking into account the server setup including the LDAP node and the processes run, among other specifications.

zmstatctl

Use `zmstatctl` to run a control script for checking zmstat data collectors. This instruction starts or stops monitoring processes, and checks status or rotates logs.

Syntax

```
zmstatctl start|stop|status|rotate
```

zmthrdump

Use `zmthrdump` to invoke a thread dump in the ZCS server process and print the output file. This command also gives the option of saving the thread dump to a file and inserts a timestamp on the logfile.

Syntax

```
zmthrdump [-h] [-i] [-t <timeout seconds>] [-p <pid file>] [-f
<file>] [-o <out-file>]
```

Description

Short Name	Description
`-h`	Displays help messages
`-i`	Appends the timestamp to the LOGFILE before invoking SIGQUIT
`-p`	Returns the PID to send SIGQUIT. The default value can be found in zmmailboxd_java.pid
`-f`	Specifies the LOGFILE to save the thread dump output in. The default value is zmmailbox.out
`-o`	Specifies the output file of the thread dump. The default value is stdout
`-t`	Specifies the timeout value (in seconds) to exit if the process becomes unresponsive. The default value is 30 seconds.

zmtrainsa

Use `zmtrainsa` to train the anti-spam filter. This command is run automatically every night to train the SpamAssasin filter from messages users mark as “junk” “not junk” from their mailbox. See SpamAssassin’s sa-update tool is included with SpamAssassin. This tool updates SpamAssassin rules from the SA organization. The tool is installed into `/opt/zimbra/common/bin.`

The `zmtrainsa` command can be run manually to forward any folder from any mailbox to the spam training mailboxes. If you do not enter a folder name when you manually run zmtrainsa for an account, for spam, the default folder is Junk. For ham, the default folder is Inbox.

Syntax

```
zmtrainsa <user> spam|ham [folder]
```

zmtzupdate

Use `zmtzupdate` to update time zone changes in existing appointments for specific users or all users. A .ics rule file should first be created to run with this command. A rule file lists a series of rules to match a time zone and the replacement time zone definitions. More information about this command can be found at:
http://wiki.zimbra.com index.php?title=Changing_ZCS_Time_Zones

Syntax

```
zmtzupdate --rulefile <rule file> -a <“all” or list of specific
email addresses> [--sync] [--after <date/time stamp>]
```

Description

Long Name	Short Name	Description
`--account`	`-a`	<arg> account email addresses separated by a white space. Use “all” for all accounts to be updated
`--after`		<arg> Appointments occurring after the specified date/time in this field are updated. The default cut off time is January 1st, 2008
--help	-h	Displays help information
--rulefile		Specifies the .ics XML file that should be used to update time zone definitions
--server	-s	<arg> Specifies the mail server hostname. The default value is localhost
--sync		If specified, this option causes the zmtzupdate command to block till the server processes all requested accounts. The default value is no.

zmvolume

Use `zmvolume` to manage storage volumes from the CLI. Note that volumes can be managed from the Administration Console, **Server**> **Volumes** page.

Syntax

```
zmvolume {-a|-d|-l|-e|-dc|-sc} [options]
```

Description

Long Name	Short Name	Description
`--add`	`-a`	Adds a volume
`--compress`	`-c`	`<arg>` Compress BLOBs; “true” or “false”
`--compressionThreshold`	`-ct`	Compression threshold; default 4KB
`--delete`	`-d`	Deletes a volume
`--displayCurrent`	`-dc`	Displays the current volume
`--edit`	`-e`	Edits a volume
`--help`	`-h`	Shows the help for the usage options for this tool.
`--id`	`-id`	`<arg>` Volume ID
`--list`	`-l`	Lists volumes
`--name`	`-n`	`<arg>` Volume name

Long Name	Short Name	Description
`--path`	`-p`	<`arg`> Root path
`--server`	`-s`	<`arg`> Mail server hostname. Default is localhost.
`--setCurrent`	`-sc`	Sets the current volume
--type	-t	<`arg`> Volume type (primaryMessage, secondaryMessage, or index)
--turnOffSecondary	-ts	Turns off the current secondary message volume

zmzimletctl

Use `zmzimletctl` to manage Zimlets and to list all zimlets on the server. Additional information is provided in Chapter 21, Zimlets. Most Zimlet deployment can be competed from the zimbra Administration Console.

Syntax

```
zmzimletctl {-l} {command} <zimlet.zip|config.xml|zimlet>
```

Description

Long Name	Short Name	Description
deploy		<zimlet.zip> Creates the Zimlet entry in the LDAP server, installs the zimlet files on the Server, grants, access to the members of the default COS, and turns on the Zimlet
undeploy		<zimlet> Uninstall a zimlet from the zimbra server
install		<zimlet.zip> Installs the Zimlet files on the host
ldapDeploy		<zimlet> Adds the Zimlet entry to the LDAP
enable		<zimlet> Enables the Zimlet
disable		<zimlet> Disables the Zimlet
acl		<zimlet> <cos1> {grant|deny} [<cos2> {grant|deny}...] Sets the access control, grant|deny, to a COS
listAcls		<zimlet> Lists the ACLs for the Zimlets
listZimlets		View details about all Zimlets on the server
getConfigTemplate		<zimlet.zip> Extracts the configuration template from the Zimlet.zip file
configure		<config.xml>Installs the configuration
listPriority		Shows the current Zimlet priorities (0 is high, 9 is low)
setPriority		<zimlet> Sets the Zimlet priority

zmproxyconfig

Use zmproxyconfig to manage Zimbra proxy and should only be used when you have to make changes to Zimbra proxy after it has been installed. See Chapter 7, Zimbra Proxy Server.

Note: *Previous to ZCS 6.0, this command was called zmproxyinit.*

Syntax

```
/opt/zimbra/libexec/zmproxyconfig [-h] [-o] [-m] [-w] [-d [-r]
[-s] [-a w1:w2:w3:w4] [-i p1:p2:p3:p4] [-p p1:p2:p3:p4] [-x
mailmode]] [-e [-a w1:w2:w3:w4] [-i p1:p2:p3:p4] [-p
p1:p2:p3:p4] [-x mailmode]] [-f] -H hostname
```

Description

Short Name	Description
`-h`	Displays help messages
`-H`	Hostname of the server on which enable/disable proxy functionality
`-a`	Colon separated list of Web ports to use. Format: **HTTP-STORE:HTTP-PROXY:HTTPS-STORE:HTTPS-PROXY** (Ex: `8080:80:8443:443`)
`-d`	Disable proxy
`-e`	Enable proxy
`-f`	Full reset on memcached port and search queries and POP/IMAP throttling
-i	Colon separated list of IMAP ports to use. Format: **IMAP-STORE:IMAP-PROXY:IMAPS-STORE:IMAPS-PROXY** (Ex: `7143:143:7993:993`)
-m	Toggle mail proxy portions
-o	Override enabled checks
-p	Colon separated list of POP ports to use. Format: **POP-STORE:POP-PROXY:POPS-STORE:POPS-PROXY** (Ex: `7110:110:7995:995`)
-r	Run against a remote host. Note that this requires the server to be properly configured in the LDAP master
-s	Set Cleartext to FALSE (secure mode) on disable
-t	Disable reverse proxy lookup target for the store server. Only valid with -d. Make sure that you intend for all proxy functions for the server to be disabled.
-w	Toggle Web proxy portions

Short Name	Description
-x	zimbraMailMode to use on disable (Default is HTTP)

hostname is the value of the **zimbra_server_hostname** LC key for the server being modified.
Required options are -f by itself, or -f with -d or -e
Note that

- -d or -e require one or both of -m and -w.
- -i or -p require -m.
- -a requires -w.
- -x requires -w and -d for store.
- -x requires -w for proxy.

The following are the defaults for -a, -i, -p, and -x if they are not supplied as options.
-a default on enable: 8080:80:8443:443
-a default on disable: 80:0:443:0
-i default on enable: 7143:143:7993:993
-i default on disable: 143:7143:993:7993
-p default on enable: 7110:110:7995:995
-p default on disable: 110:7110:995:7995
-x default on store disable: http
-x default on proxy enable/disable: http

zmsyncreverseproxy

Use `zmsyncreverseproxy` to reserve proxies mobile sync HTTP traffic between the source and forwarding server and port. Decodes the sync requests/responses and logs them when verbose mode is turned on.

Syntax

```
zmsyncreverseproxy [-v] [-d] [-L log4j.properties] -p <port
number> -fs <fwd server> -fp <fwd port> [-sv syncversions]
```

Description

Long Name	Short Name	Description
`--help`	`-h`	Displays help
`--verbose`	`-v`	Verbose mode, dumps full exception stack trace.
--debug	-d	Debug mode, dumps decoded sync messages
--port	-p	The port this service listens on
--forwardserver	-fs	The server host to forward requests to
--forwardport	-fp	The server port to forward requests to

Long Name	Short Name	Description
--syncversions	-sv	Active sync versions supported
--logpropertyfile	-L	log4j property file, valid only with -l

Appendix B Configuring SPNEGO Single Sign-On

The SPNEGO protocol mechanism can be configured on ZCS for single sign-on authentication to the Zimbra Web Client.

From ZWC, when users log on to their Intranet through Active Directory, they can enter their ZWC mailbox without having to re-authenticate to Zimbra.

The ZCS server is configured to redirect users attempting to log on to ZWC to a URL under SPNEGO protection. The server asks for authentication with Kerberos through SPNEGO and users are redirected to their ZWC mailbox. When users log out, they are redirected to a logout URL that displays a Launch button. When users click **Launch**, they are directed to the ZWC entry page.

Note: *When users log on to their ZWC accounts from the Internet, the ZWC log in page displays and they must enter their ZWC password to log on.*

Important: *If SPNEGO SSO is enabled on a domain, the browsers must be configured correctly. See Configure Your Browser. Improperly configured browsers may pop up a user/pass dialog and if a user enters his correct AD domain username/password, he can still log into the Zimbra mailbox, and some browsers may display a “401 Unauthorized” error.*

Configuration Process

1. Create the Kerberos keytab file.
    - Create an Active Directory service account. This account is used to generate the Kerberos keytab file.
    - Add the service Principal Names (SPN) directory property for an Active Directory service account.
    - Create the keytab file.
2. Enable and configure the SPNEGO protocol on the ZCS server.
3. Configure browsers

Create the Kerberos Keytab File

An Active Directory service account is created in Domain for each mailstore server.

1. Create an Active Directory service account. This is the account used to generate the Kerberos keytab file that is added to the Zimbra server.

   a. Go to the Active Directory **Start> Programs>Administrative Tools>Active Directory Users and Computers** console.

   b. To create the service account, click the AD Domain name and from the expanded content right-click **Users** and select **New >User**. Complete the New Object – User dialog.

   - **Full name**: Enter the user display name for the AC service account. Recommend that the full name be the ZCS mailbox server name. Example: **mail1**
   - **User Logon Name**: This name is the value that is set for the **zimbraSpnegoAuthTargetName** server attribute in LDAP. Write it down. Example: **HTTP/mail1.example.com**
   - **User Logon Name (pre-Windows2000):** This name is used for the **–mapUser** parameter in the **setspn** and **ktpass** commands. Example: **mail1**.
   - Click **Next**.

   c. Enter and confirm the password. This password is used for the **–pass {AD-user-password}** parameter in the **ktpass** command, configured below.

   d. Check **Password never expires** and **User cannot change password**, and click **Next**.

   e. Click **Finish** to create the user. The service account name displays in the Users directory.

2. Use the **setspn** command to map the mailbox server name as the service Principal Names (SPN) to the user account. The SPN is used in the process of mutual authentication between the client and the server hosting a particular service.

   a. From the command prompt, type **setspn –a {userlogonname} {serviceaccountname}**

   Example

```
 setspn –a HTTP/mail1.example.com mail1
```

   b. To verify that the SPN is registered, type
   C:\>setspn –l {accountname}
   A list of registered SPNs is displayed.

3. Create the keytab file used when signing into the Kerberos domain. Use the ktpass tool from the Windows Server toolkit to create the Kerberos keytab.

Note: *A Kerberos keytab file contains a list of keys that are analogous to user passwords. Restrict and monitor permissions on any keytab files you create.*

The command to type follows:

```
ktpass -out {keytab-file-to-produce} -princ {Service-
Principal-Name}@{the-kerberos-realm} -mapUser {AD-user} -
mapOp set -pass {AD-user-password} -crypto RC4-HMAC-NT -
pType KRB5_NT_PRINCIPAL
```

Ktpass -out	The key is written to this output file. Enter the directory location and keytab file name. The keytab file name is **jetty.keytab**. For example, C: \Temp\spnego\jetty.keytab
-princ	This is the principal name. Enter the service Principal Name as used in **Step 2** in Setting up the Microsoft Windows Active Directory Domain Controller section. For example, HTTP/ mail1.example.com@COMPANY.COM
-mapUser	This maps –princ value to this user account. Enter the AD service account user name entered in the **User Logon Name (pre-Windows2000)** set in **Step 1.b** in Setting up the Microsoft Windows Active Directory Domain Controller section.
-mapOp	This sets the mapping. The value for this parameter is **set**
-pass	This is the password to use. Enter the password entered in the **User Logon Name (pre-Windows2000)** set in **Step 1.c** in Setting up the Microsoft Windows Active Directory Domain Controller section.
-crypto	This is the cryptosystem to use. Enter **RC4-HMAC-NT**
-pType	Enter **KRB5_NT_PRINCIPAL** To avoid warning messages from the toolkit enter this value.

Example:

```
ktpass -out C: \Temp\spnego\jetty.keytab -princ HTTP/
mail1.example.com@COMPANY.COM -mapUser mail1 -mapOp set -
pass password123 -crypto RC4-HMAC-NT -pType
KRB5_NT_PRINCIPAL
```

The command is confirmed with something similar to the example below.

```
Targeting domain controller: …
    Using legacy password setting method
    Successfully mapped HTTP/mail1.example.com to
mail1.
    Key created.
    Output keytab to c:\Temp\spnego\jetty.keytab:
    Keytab version: 0x502
    keysize 71 HTTP HTTP/mail1.example.com@COMPANY.COM
ptype 1 (KRB5_NT_PRINCIPAL) vno3 etype 0x17 (RC4-HMAC)
keylength 16 (0xc383f6a25f1e195d5aef495c980c2bfe)
```

4. Transfer the keytab file (jetty.keytab) to the Zimbra server. Copy the file created in step 3 to the following Zimbra server location: **/opt/zimbra/data/mailboxd/spnego/jetty.keytab**.

Important: *Do not rename the jetty.keytab file. This file name is referenced from various configuration files.*

Repeat steps 1 to 4 to create an create the keytab file (**jetty.keytab**) for each Zimbra mailstore server.

Configure ZCS

SPNEGO attributes in Global Config and on each Zimbra server are configured and pre-authentication is set up for the domain. Use the zmprov commands to modify the Zimbra server.

Note: *Only one Kerberos REALM is supported per ZCS installation*

1. Modify the following global config attributes, with the **zmprov mcf** command.

zimbraSpnegoAuthEnabled	Set to TRUE.
zimbraSpnegoAuthErrorURL	This is the URL users are redirected to when spnego auth fails. Setting it to **/zimbra/?ignoreLoginURL=1** will redirect user to the regular Zimbra login page, where user will be prompted for their zimbra user name and password.
zimbraSpnegoAuthRealm	The Kerberos realm in the domain controller This is the domain name in the Active Directory. (COMPANY.COM)

To modify the global config attributes, type:

a. `zmprov mcf zimbraSpnegoAuthEnabled TRUE`

b. `zmprov mcf zimbraSpnegoAuthErrorURL '/zimbra/?ignoreLoginURL=1'`

c. `zmprov mcf zimbraSpnegoAuthRealm  <COMPANY.COM>`

2. On each Zimbra server, modify the following global config attributes with the **zmprov ms** command.

zimbraSpnegoAuthTargetName	This is the user logon name from Step 1 B , User Logon Name.
zimbraSpnegoAuthPrincipal	Enter the user logon name set in zimbraSpnegoAuthTargetName and the address set in global config zimbraSpnegoAuthRealm Type as **zimbraSpnegoAuthTargetName@zimbraSpnegoAuthRealm** For example, **HTTP/mail1.example.com@COMPANY.COM**

To modify the server global config attributes, type:

a. `zmprov ms mail1.example.com  zimbraSpnegoAuthTargetName HTTP/mail1.example.com`

b. `zmprov ms mail1.example.com zimbraSpnegoAuthPrincipal HTTP/mail1.example.com@COMPANY.COM`

3. The following is set up on the domain.

- Kerberos Realm
- Virtual host
- Web client login URL and UAs
- Web client logout URL and UAs

a. Set up Kerberos Realm for the domain. This is the same realm set in the global config attribute **zimbraSpnegoAuthRealm** . Type `zmprov md {domain} zimbraAuthKerberos5Realm {kerberosrealm}`

b. Set up the virtual hosts for the domain. Virtual-hostname-* are the hostnames you can browse to for the Zimbra Web Client UI. Type `zmprov md {domain} +zimbraVirtualHostname {virtual-hostname-1} +zimbraVirtualHostname {virtual-hostname-2} ...`

c. Setup the web client log in URL and UAs allowed for the login URL on the domain.

- Set the login URL. The login URL is the URL to redirect users to when the Zimbra auth token is expired. `Zmprov md {domain} zimbraWebClientLoginURL '../service/spnego'`

- Honor only supported platforms and browsers. **zimbraWebClientLoginURLAllowedUA** is a multi-valued attribute, values are regex. If this is not set, all UAs are allowed. If multiple values are set, an UA is allowed as long as it matches any one of the values. **zmprov md {domain} +zimbraWebClientLoginURLAllowedUA {UA-regex-1} +zimbraWebClientLoginURLAllowedUA {UA-regex-2} ...**

For example, to honor zimbraWebClientLoginURL only for Firefox, Internet Explorer, Chrome, and Safari on computers running Windows, and Safari on Apple Mac computers, type the following commands.

- `zmprov md {domain} +zimbraWebClientLoginURLAllowedUA '.*Windows.*Firefox/3.*'`
- `zmprov md {domain} +zimbraWebClientLoginURLAllowedUA '.*MSIE.*Windows.*'`
- `zmprov md {domain} +zimbraWebClientLoginURLAllowedUA '.*Windows.*Chrome.*'`
- `zmprov md {domain} +zimbraWebClientLoginURLAllowedUA '.*Windows.*Safari.*'`
- `zmprov md {domain} +zimbraWebClientLoginURLAllowedUA '.*Macintosh.*Safari.*'`

d. Setup the web client logout URL and UAs allowed for the logout URL on the domain.

- Set the logout URL. The logout URL is the URL to redirect users to when users click Logout. `Zmprov md {domain} zimbraWebClientLogoutURL '../?sso=1’`
- Honor only supported platforms and browsers. **zimbraWebClientLogoutURLAllowedUA** is a multi-valued attribute, values are regex. If this is not set, all UAs are allowed. If multiple values are set, an UA is allowed as long as it matches any one of the values. `zmprov md {domain} +zimbraWebClientLogoutURLAllowedUA {UA-regex-1} +zimbraWebClientLogoutURLAllowedUA {UA-regex-2} ...`

For example, to honor zimbraWebClientLogoutURL only for Firefox, Internet Explorer, Chrome, and Safari on computers running Windows, and Safari on Apple Mac computers, type the following commands.

- `zmprov md {domain} +zimbraWebClientLogoutURLAllowedUA '.*Windows.*Firefox/3.*'`
- `zmprov md {domain} +zimbraWebClientLogoutURLAllowedUA '.*MSIE.*Windows.*'`
- `zmprov md {domain} +zimbraWebClientLogoutURLAllowedUA '.*Windows.*Chrome.*'`
- `zmprov md {domain} +zimbraWebClientLogoutURLAllowedUA '.*Windows.*Safari.*'`

Configure Your Browser

When the SPNEGO SSO feature is enabled on your domain, user's browsers must be configured properly. Improperly configured browsers will behave differently depending on the browser.

The following browsers are supported:

- For computers running Windows: Internet Explorer 6.0 or later, Firefox 3.0 or later, Chrome, Safari
- Apple Mac computer: Safari

1. Firefox browser for computers running Windows
   a. In Firefox browse to **about:config**. In the Firefox browser address field, type **about:config**. The warning—**This might void your warrant**y, is now displayed.
   b. Click **I'll be careful, I promise!**
   c. Search in Filters, type **network.n**. Enter a comma-delimited list of trusted domains or URLs.

   Double-click **network.negotiate-auth.delegation-uris**. Enter **http://,https://**

   Double-click **network.negotiate-auth.trusted-uris**. Enter **http://,https://**

   Or, to set specific URLs,

   Double-click **network.negotiate-auth.delegation-uris**. Enter the domain addresses. For example, http://mail1.example.com,https://mail2.example.com

   Double-click **network.negotiate-auth.trusted-uris**. Enter the domain addresses. For example, http://mail1.example.com,https://mail2.example.com

2. Internet Explorer, Chrome, and Safari for computers running Windows
   a. In these browsers, go to **Tools>Internet Options>Security > Local Intranet>Sites**. On the Sites dialog make sure all items are checked.
   b. Select **Advanced**. Add the domain server (hostname) URL, both http:// and https://
   c. Click **OK** to close the file.
   d. Go to **Tools > Options > Advanced > Security**. Locate and check **Enable Integrated Windows Authentication.**
   e. Click **OK** and close the browser.

3. Safari for Apple Mac computers. No configuration is necessary.

Test your setup

1. On a Windows computer or an Apple Mac computer, log in to the computer as a domain user.

Your ticket as a domain user will be saved on the computer. The token will be picked up by the spnego-aware browser and sent in the Authorization header to the Zimbra server.

2. Browse to the Zimbra Web Client log on page. You should be redirected to your ZWC inbox without being prompted for user name and password.

   If spnego auth fails, the user is redirected to an error URL.

Troubleshooting setup

Make sure the following are true.

- The browser is in the Intranet zone.
- The user is accessing the server using a Hostname rather than IP address.
- Integrated Windows authentication in Internet Explorer is enabled, and the host is trusted in Firefox.
- The server is not local to the browser.
- The client's Kerberos system is authenticated to a domain controller.

■ If the browser display the "401 Unauthorized", it's most likely that the browser either did not send another request with Authorization in response to the 401, or had sent an Authorization which is not using the GSS-API/SPNEGO scheme.

Check your browser settings, and make sure it is one of the supported browsers/platforms

■ If you are redirected to the error URL specified in **zimbraSpnegoAuthErrorURL**, that means The SPNEGO authentication sequence does not work.

Take a network trace, make sure the browser sends Authorization header in response to the 401. Make sure the Negotiate is using GSS-API/ SPNEGO, not NTLM (use a network packet decoder like Wireshark) .

After verifying that the browser is sending the correct Negotiate, if it still does not work, turn on the following debug and check Zimbra logs:

- ADD "-DDEBUG=true -Dsun.security.spnego.debug=all" (note, not replace) to   localconfig key spnego_java_options
- Add log4j.logger.org.mortbay.log=DEBUG in log4j

Then restart the mailbox server.

Browse to the debug snoop page: http://{server}:{port}/spnego/snoop.jsp. See if you can access the snoop.jsp

Check zmmailboxd.out and mailox.log for debug output.

***** One of the errors at this stage could be because of clock skew on the jetty server. If this is the case, it should be shown in zmmailboxd.out. Fix the clock skew and try again.

Configure Kerberos Auth with SPNEGO Auth

Kerberos auth and SPNEGO can co-exists on a domain. Use case is using Kerberos as the mechanism for verifying user principal/password against a KDC, instead of the native Zimbra LDAP, when user cannot get in by SPNEGO.

When SPNEGO auth fails, users are redirected to the Zimbra sign in page if the browser is configured properly. Users can enter their Zimbra username and password on the sign in page to sign in manually. The Domain attribute **zimbraAuthMech** controls the mechanism for verifying passwords. If **zimbraAuthMech** is set to "kerberos5", The user name the user enters is used to first identify a valid Zimbra user (users must be provisioned in the Zimbra LDAP), then from Zimbra user is mapped to a Kerberos principal, the Kerberos principal + password is then validated against a KDC. This KDC could be different from, or the same as, the KDC that the Active Directory domain controller (for SPNEGO auth) is running as.

Note: *Every Microsoft Active Directory domain controller acts as Kerberos KDC. For SPNEGO auth, KDC is not contacted from the mailbox server. The Kerberos token sent from the Authorization http header along with jetty's keytab file can identify/authenticate the user.*

For kerberos auth (**zimbraAuthMech**="kerberos5"), the mailbox server needs to contact KDC to validate principal+password. For the java kerberos client (i.e. Zimbra mailbox server), the default realm and KDC for the realm is specify in a Kerberos config file. The location of this config file can be specified in JVM argument **java.security.krb5.conf**. If it is not specified, the default is **/etc/krb5.conf**. When SPNEGO is enabled in Zimbra, **java.security.krb5.conf** for the mailbox server is set to **/opt/zimbra/jetty/etc/krb5.ini**. Therefore, that is the effective file for configuring kerberos auth.

/opt/zimbra/jetty/etc/krb5.ini is rewritten from **/opt/zimbra/jetty/etc/krb5.ini.in** each time when the mailbox server restarts. To configure, you need to modify the **/opt/zimbra/jetty/etc/krb5.ini.in** file, not **/opt/zimbra/jetty/etc/krb5.ini**.

Under [realms] section, kdc and admin_server are not set for SPNEGO auth, but they are required for kerberos auth.

To configure:

1. Edit **/opt/zimbra/jetty/etc/krb5.ini.in**
2. Change:

```
[realms]
%%zimbraSpnegoAuthRealm%% = {
```

```
             default_domain = %%zimbraSpnegoAuthRealm%%
}
```

to:

```
%%zimbraSpnegoAuthRealm%% = {
             kdc = YOUR-KDC
             admin_server = YOUR-ADMIN-SERVER
             default_domain = %%zimbraSpnegoAuthRealm%%
}
```

3. Replace YOUR-KDC and YOUR-ADMIN-SERVER to the hostname on which the kdc/admin_server for kerberos auth is running.
4. Save the file and restart mailbox server.

The restriction is the realm for SPNEGO and Kerberos auth must be the same. For SPNEGO auth, the Kerberos principal in the Authorization header is mapped to a unique Zimbra account. For Kerberos auth, the Zimbra account is mapped to a unique Kerberos principal. The mapping (by domain attribute **zimbraAuthKerberos5Realm**) is the same for both.

Appendix C ZCS Crontab Jobs

The crontab is used to schedule commands to be executed periodically on the Zimbra servers.

How to read the crontab

Each entry in a crontab file consists of six fields, specified in the following order

minute hour day month weekday command

The fields are separated by blank spaces or tabs.

Field	Description
• minute	0 through 59
• hour	0 through 23
• day of month	1 through 31
• month	1 through 12
• day of week	0 through 7 (0 or 7 is Sunday, 1 is Monday, etc., or use names)
• command	This is the complete sequence of commands to be executed for the job

When an asterisk (*) is displayed, it means all possible values for the field. For example, an asterisk in the hour time field would be equivalent to “every hour”

ZCS Cron Jobs

You can view the ZCS crontab by logging on as zimbra and typing **crontab -l**.

The following cron jobs are scheduled to run for ZCS

Log pruning

The log pruning deletes logs from **/opt/zimbra/log** that are over eight days old. The job runs at 2:30 a.m.

Status logging

zmstatuslog calls zmcontrol status and outputs it data into syslog. This is primarily so that logger can read the data and keep the administration

console status up-to-date.
Status logging job runs every 2 minutes.

Jobs for crontab.store

Log pruning

The log pruning deletes logs from **/opt/zimbra/mailboxd/logs** that are over eight days old. The job runs at 2:30 a.m.

Clean up the quarantine dir

Mail identified with a virus or spam are not dropped immediately, but are put in quarantine. Messages older than seven days are deleted at 1:00 a.m daily.

Table maintenance

The ANALYZE TABLE statement is run on all tables in the database to update the statistics for all indexes. This is done to make sure that the MySQL query optimizer picks the correct es when executing SQL statements. This script is run 1:30 a.m.on Sunday.

Report on any database inconsistencies

zmdbintegrityreport is run weekly to check the MySQL database for corruption and will notify the administrator if any corruption is found. When this is run, it may consume a significant amount of I/O. If you find that it is an issue, you may want to change the frequency with which **zmdbintegrityreport** is run by editing the ZCS crontab entry. This report runs at 11:00 p.m. Sundays.
Large sites may opt to disable this by setting **zmlocalconfig -e zmdbintegrityreport_disabled=TRUE**.
If you choose to disable this, it is recommended that the integrity report be run by hand during the normal maintenance windows and prior to running any ZCS upgrades.

Monitor for multiple mysqld tp prevent corruption

A script is executed to see if mysqld process is running to detect cases where corruption is likely to be caused. An email is generated if it finds more than 1 mysqld process running. The script runs every 5 minutes.

Jobs for crontab.logger

process logs

zmlogprocess runs every 10 minutes to parse logs and produce MTA metrics (as/av, volume, count, etc).

Daily reports

When the logger package is installed, a daily mail report is automatically scheduled in the crontab. The report runs every morning at 11:30 and is sent to the administrator’s email address.

Jobs for crontab.mta

Queue logging

The zmqueue report status via the syslog is reviewed. This is logger data. The status is updated every 10 minutes.

Spam training

The **zmtrainsa** script is enabled to feed mail that has been classified as spam or a non-spam to the SpamAssassin application. SpamAssassin learns what signs are likely to mean spam or ham. This job should run only on one Zimbra MTA. The job runs at 11:00 p.m.

Spam training cleanup

zmtrainsa empties the spam and ham mailboxes each day. The job runs at 11:45 p.m.

Spam Bayes auto-expiry

Spam bayes auto-expiry maintains the spam-assassin Bayes database. This keeps the database to manageable size ensuring spam processing remains as quick as possible. This runs every day at 11:20 p.m.

Clean up amavisd/tmp

This job is used to clean up the amavisd temp files. It runs at 5:15 a.m. and at 8:15 p.m.

Single Server Crontab -l Example

```
[zimbra@example ~]$ crontab -l
# ZIMBRASTART -- DO NOT EDIT ANYTHING BETWEEN THIS LINE AND ZIMBRAEND
#
# Log pruning
#
30 2 * * * find /opt/zimbra/log/ -type f -name \*.log\* -mtime +8 -exec rm {} \;
> /dev/null 2>&1
35 2 * * * find /opt/zimbra/log/ -type f -name \*.out.???????????? -mtime +8 -ex
ec rm {} \; > /dev/null 2>&1
#
# Status logging
#
*/2 * * * * /opt/zimbra/libexec/zmstatuslog
#
# Backups
#
# BACKUP BEGIN
0 1 * * 6 /opt/zimbra/bin/zmbackup -f   -a all
0 1 * * 0-5 /opt/zimbra/bin/zmbackup -i
0 0 * * * /opt/zimbra/bin/zmbackup -del 1m
# BACKUP END
#
# crontab.ldap
#
#
#
# crontab.store
#
# Log pruning
#
30 2 * * * find /opt/zimbra/mailboxd/logs/ -type f -name \*log\* -mtime +8 -exec
rm {} \; > /dev/null 2>&1
30 2 * * * find /opt/zimbra/log/ -type f -name stacktrace.\* -mtime +8 -exec rm
{} \; > /dev/null 2>&1
#
# Table maintenance
#
30 1 * * 7 /opt/zimbra/libexec/zmmaintaintables >> /dev/null 2>&1
#

# # Report on any database inconsistencies
#
0 23 * * 7 /opt/zimbra/libexec/zmdbintegrityreport -m
#
# Monitor for multiple mysqld to prevent corruption
#
*/5 * * * * /opt/zimbra/libexec/zmcheckduplicatemysqld -e > /dev/null 2>&1
#
```

```
# crontab.logger
#
# process logs
#
00,10,20,30,40,50 * * * * /opt/zimbra/libexec/zmlogprocess > /tmp/logprocess.out
2>&1
#
# Graph generation
#
10 * * * * /opt/zimbra/libexec/zmgengraphs >> /tmp/gengraphs.out 2>&1
```

```
#
# Daily reports
#
10 1 * * * /opt/zimbra/libexec/zmdailyreport -m
#

#
crontab.mta
#
#
# Queue logging
#
0,10,20,30,40,50 * * * * /opt/zimbra/libexec/zmqueuelog
#
# Spam training
#
0 23 * * * /opt/zimbra/bin/zmtrainsa >> /opt/zimbra/log/spamtrain.log 2>&1
#
# Spam training cleanup
#
45 23 * * * /opt/zimbra/bin/zmtrainsa --cleanup >> /opt/zimbra/log/spamtrain.log
2>&1
#
# Dspam cleanup
#
0 1 * * * [ -d /opt/zimbra/data/dspam/data/z/i/zimbra/zimbra.sig ] && find /opt/
zimbra/dspam/var/dspam/data/z/i/zimbra/zimbra.sig/ -type f -name \*sig -mtime +7
-exec rm {} \; > /dev/null 2>&1
8 4 * * * [ -f /opt/zimbra/data/dspam/system.log ] && /opt/zimbra/dspam/bin/dspa
m_logrotate -a 60 -l /opt/zimbra/data/dspam/system.log
8 8 * * * [ -f /opt/zimbra/data/dspam/data/z/i/zimbra/zimbra.log ] && /opt/zimbra
a/dspam/bin/dspam_logrotate -a 60 -l /opt/zimbra/data/dspam/data/z/i/zimbra/zimb
ra.log
#
# Spam Bayes auto-expiry
#
20 23 * * * /opt/zimbra/libexec/sa-learn -p /opt/zimbra/conf/salocal.cf --dbpath
/opt/zimbra/data/amavisd/.spamassassin --siteconfigpath /opt/zimbra/conf/spamas
sassin --force-expire --sync > /dev/null 2>&1
#
# Clean up amavisd/tmp
#
15 5,20 * * * find /opt/zimbra/data/amavisd/tmp -maxdepth 1 -type d -name 'amavi
s-*' -mtime +1 -exec rm -rf {} \; > /dev/null 2>&1
#
# Clean up the quarantine dir
#
0 1 * * * find /opt/zimbra/data/amavisd/quarantine -type f -mtime +7 -exec rm -f
{} \; > /dev/null 2>&1

# ZIMBRAEND -- DO NOT EDIT ANYTHING BETWEEN THIS LINE AND ZIMBRASTART
[zimbra@example ~]$
```

Appendix D Glossary

The Glossary lists terms and acronyms used in this document, and includes both industry terms and application-specific terms. If a general industry concept or practice has been implemented in a specific way within the product, that is noted as well.

A record

A (Address) records map the hostname to the numeric IP address. For zimbra, the A record is the IP address for the zimbra server.

Account Policy

Class of Service as exposed in Zimbra administration console.

AD

Microsoft Active Directory Server. Used in Zimbra Collaboration as an optional choice for authentication and GAL, along with OpenLDAP for all other Zimbra Collaboration functions.

Alias

An “also known as” email address, which should be routed to a user at a different email address.

Attribute

Contains object-related data for directory server entries. Attributes store information such as a server host name or email forwarding address.

Authentication

Process by which user-supplied login information is used to validate that user’s authority to enter a system.

Blacklist

Anti-spam term, indicates a known bad IP address. This could be one that has been hijacked by spammers, or also one from a poorly maintained but legitimate site that allows mail relaying from unauthorized parties.

BLOB

Binary Large Object.

Class of Service (COS)

Describes an object in the Zimbra Collaboration LDAP data schema, which contains settings for things like user mail quotas. Each Zimbra Collaboration account includes a COS, and the account inherits all the settings from the selected COS.

CLI

Command-Line Interface. Used to refer to the collective set of Zimbra Collaboration command-line tools, such as `zmprov`.

Cluster

A type of network configuration for high availability, using clusters of servers (nodes). If one server fails or drops off the network, a spare takes over.

Contacts

Within Zimbra Collaboration, Contacts are a user-interface feature listing that user’s personal collection of address and contact information.

Conversation

Within Zimbra Collaboration, Conversations are a user-interface feature that presents email threads (emails sharing the same subject line) as a single Conversation listing. Users can expand the Conversation to view all emails within it.

DHTML

Dynamic HTML. A technology employed in the Zimbra Web Client.

DNS

Domain Name System is an Internet directory service. DNS is how domain names are translated into IP addresses and DNS also controls email delivery. Correctly configured DNS is required for Postfix to route messages to remote destinations

Edge MTA

Generic term used to refer to any mail transfer agent that is the first line of defense in handling incoming email traffic. Functions that may occur on the Edge MTA include spam filtering.

Entry

An item in the directory server, such as an account or mail host.

Failover

Takeover process where a spare server machine detects that a main server is unavailable, and the spare takes over processing for that server.

FQDN

Fully qualified domain name. The hostname and the path to the host. For example, www.Zimbra.com is a fully qualified domain name. www is the host, Zimbra is the second-level domain, and .com is the top level domain.

GAL

Global Address List, the Outlook version of a company directory. Lists contact information, including email addresses, for all employees within an organization.

Global Configuration

A Zimbra Collaboration object containing default settings for servers and Class of Service.

High Availability

Abbreviated as HA, high availability refers to the availability of resources in a computer system in the wake of component failures in the system.

HTTP

HyperText Transfer Protocol, used along with SOAP for UI integration.

IMAP

Internet Message Access Protocol is a method of accessing mail from a remote message store as if the users were local.

Store

Within Zimbra Collaboration, a directory area that stores all the indexing information for mail messages on a particular mailbox server.

Indexing

The process of parsing incoming email messages for search words.

Java

Java is an industry standard object-oriented programming language. Used for the core Zimbra Collaboration application server.

JavaScript

Scripting largely developed by Netscape that can interact with HTML source code. Technology used in the Zimbra Web Client.

LDAP

Lightweight Directory Access Protocol, an industry standard protocol used for authentication.

Zimbra administration console

The Zimbra Collaboration administrator interface.

Zimbra Web Client

The Zimbra Collaboration end-user interface.

LMTP

Local Mail Transfer Protocol, used for transferring messages from Postfix MTA to the Zimbra Collaboration server for final delivery.

Mailbox Server

Alternative term for Zimbra Collaboration server.

MAPI

Messaging Application Programming Interface. A system built into Microsoft Windows to enable different email applications to work together.

Message Store

Within Zimbra Collaboration, a directory area that stores the mail messages on a particular mailbox server.

MDA

Mail Delivery Agent, sometimes known as a mail host. The Zimbra Collaboration server functions as an MDA.

Metadata

Data that describes other data, rather than actual content. Within Zimbra Collaboration, metadata consists of user folders, threads, message titles and tags, and pointers.

MIME

Multipurpose Internet Mail Extensions, a specification for formatting non-ASCII Internet message content such as image files. Format used to store messages in Message Store.

MTA

Message Transfer Agent. MTA is a program that delivers mail and transports it between machines. A Zimbra Collaboration deployment assumes both the Postfix MTA and an edge MTA.

MX Record

Mail eXchange. An MX record is an entry in a domain name database that identifies the mail server that is responsible for handling emails for that domain name. The email system relies on DNS MX records to transmit emails between domains. When mail is processed, the MX record is checked before the A record for the destination address.

OOTO

Common shorthand for “out of the office”, used when sending vacation messages.

Open Source

Refers to software created by groups of users for non-commercial distribution, where source code is published rather than proprietary.

OS

Operating system, such as Linux, UNIX, or Microsoft Windows.

POP

Post Office Protocol is used to retrieve email from a remote server over TCP/IP and save it to the local computer.

Provisioning

The process of creating accounts or other data, usually in batch or automated fashion.

RBH

Real-time black hole. Usually refers to web sites that, as a public service, provide lists of known bad IP addresses from which mail should be blocked, because the servers are either known to be spammers, or are unsecured and exploited by spammers.

Redo Logs

Detailed transaction log for the . server, used for replay and replication.

SAN

Storage Array Network. A high-availability data storage area.

Schema

Describes the data structures in use for by directory services at a particular organizational site.

SMTP

Simple Mail Transfer Protocol. Used in Zimbra Collaboration deployments between the Edge MTA and the Postfix MTA.

SNMP

Simple Network Monitoring Protocol. Used by monitoring software to pick up critical errors from system logs.

SOAP

Simple Object Access Protocol, an XML-based messaging protocol used for sending requests for Web services. The Zimbra Collaboration servers use SOAP for receiving and processing requests, which can come from Zimbra Collaboration command-line tools or Zimbra Collaboration user interfaces.

Spam

Unsolicited commercial email. Spammers refer to their output as “bulk business email”.

SQL

Structured Query Language, used to look up messages in the Message Store.

SSL

Secure Sockets Layer.

Tags

A Zimbra Web Client feature. Users can define tags and apply them to mail messages for searching.

TCO

Total Cost of Ownership. Zimbra Collaboration reduces total cost of ownership (TCO) by reducing requirements for server hardware, OS licensing fees, supporting application license fees, disk storage requirements, and personnel (IT, help desk, consulting).

TLS

Transport Layer Security.

UCE

Unsolicited commercial email, also known as spam.

Virtual Alias

A type of mail alias recognized in the Postfix MTA.

Whitelist

Anti-spam term for a known good mail or IP address. Mail coming from such an address may be “automatically trusted”.

XML

eXtended Markup Language.

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