



TRIPLE PLAY INTEGRATED SOLUTION

Implementasi Briker di Mikrotik

Oleh M.Ranu Arifudin
UFOAKSES INDONESIA

mum

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MikroTik



PT. UFOAKSES SUKSES LUARBIASA

Jl. Sultan Hasanudin No. 52 Blok M
Kebayoran Baru, Jakarta Selatan 12160
Telp +62 21 7257577 Fax +62 21 7257578
Email info@ufoakses.co.id
Website <http://www.ufoakses.co.id>
Store : <http://www.ufoakses.net>



Nama : Muhammad Ranu Arifudin

Bekerja di :

PT. Ufoakses Sukses Luarbiasa

PT. Infotech Media Nusantara (ITMN)

CyberAkses.net.id

Majalah BISKOM

Organisasi :

Asosiasi Open Source Indonesia (AOSI)

Asosiasi Pengusaha Komputer Indonesia (APKOMINDO)

Asosiasi Industri Teknologi Informasi Indonesia
(AITI-Indonesia)

Agenda



- Metarouter/KVM
- Briker
- VNC
- Workshop
- Pertanyaan

Agenda

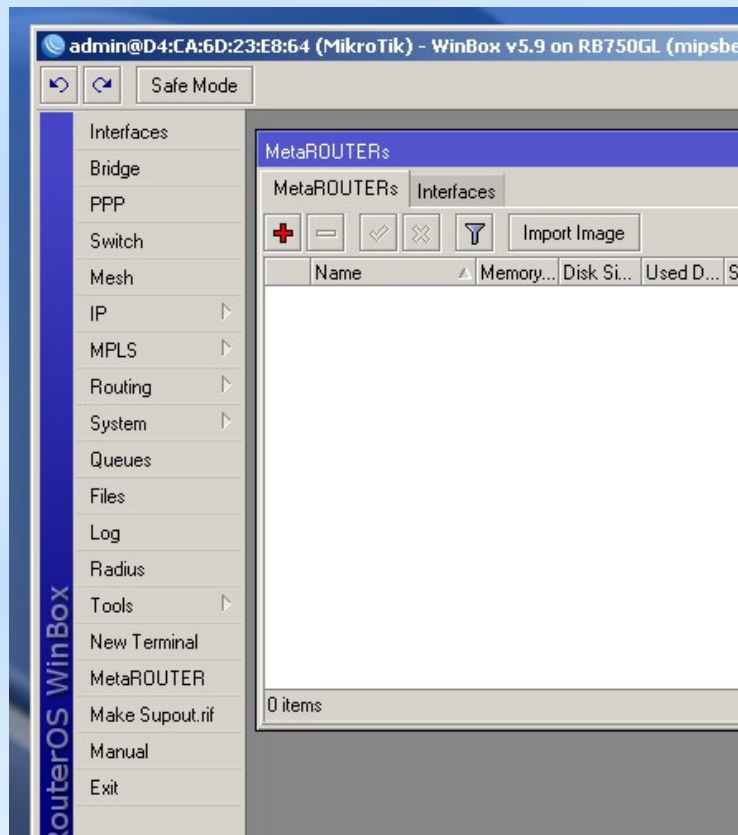


- Metarouter/KVM
- Briker
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- Workshop
- Pertanyaan

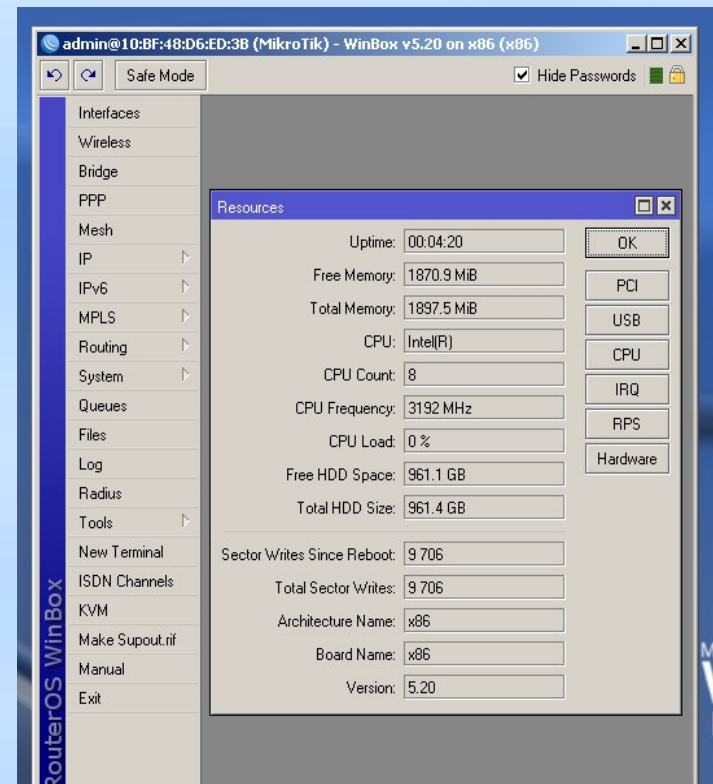
Metarouter / KVM



METAROUTER berjalan di Routerboard/PPC



KVM berjalan di X86



KVM (Kernel-base Virtual Machine)



- KVM (Kernel-based Virtual Machine) adalah sebuah metode atau solusi untuk menjalankan virtualisasi pada hardware tipe x86
- KVM membutuhkan CPU yang support dengan virtualization
 - AMD Virtualization (AMD-V)
 - Intel Virtualization (VT-x)

KVM (Kernel-base Virtual Machine)



- Sejak RouterOS versi 3.26, Mikrotik sudah mendukung solusi KVM
- KVM minimal membutuhkan lisensi level 3 pada Mikrotik RouterOS
- Setiap Guest OS minimal membutuhkan 16 MB RAM

KVM (Kernel-base Virtual Machine)



- Beberapa contoh solusi penggunaan KVM :
 - Data Center (router, VPN ,VoIP, NMS, dll)
 - Hosting Center (webhosting, FTP,mail, dll)
 - Wireless client site, memisahkan control router pada sisi ISP (wlan) dan client (ethernet) secara virtual
 - Perencanaan Network dan testing
 - Berbagai Aplikasi (Briker, Mythtv, dll)

Briker



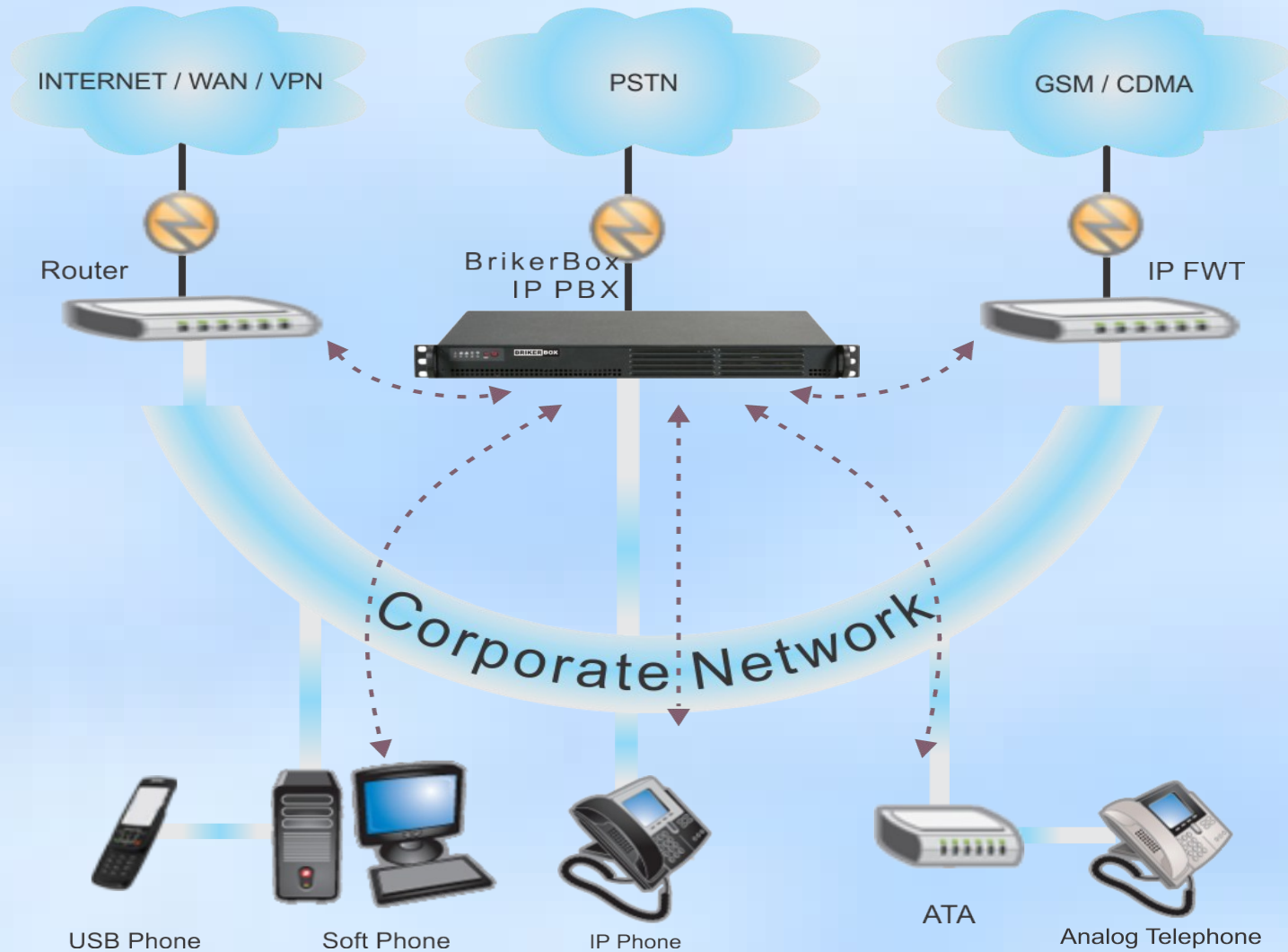
Briker merupakan sistem aplikasi berbasis open source yang dibangun untuk mengakomodir teknologi IPPBX. Sistem ini di develop oleh anak bangsa Indonesia

Www.briker.org

Www.simantap.com

Www.itmn.co.id

Briker



Download file Briker



- Persiapkan file installer Briker IPPBX pada Mikrotik, bisa didownload di <http://briker.org/download/>

The screenshot shows a 'File List' window with a table of files. The file 'briker-1.2.iso' is highlighted with a red box. The table has columns for File Name, Type, Size, and Creation Time.

File Name	Type	Size	Creation Time
IHB4-WCHD.key	.key file	184 B	Jul/31/2012 09:51:55
VidiScript.zip	.zip file	0 B	Aug/09/2012 16:08:09
briker-1.2.iso	.iso file	270.8 MiB	Jul/27/2012 14:54:33
oem.ini	.ini file	430 B	Aug/10/2012 15:25:23
pSense.img	.img file	128.0 MiB	Aug/28/2012 11:03:48
pfSense.iso	.iso file	110.5 MiB	Aug/27/2012 12:06:37
pfsense	file	128.0 MiB	Aug/27/2012 13:25:36
pfsense.img	.img file	128.0 MiB	Aug/27/2012 14:32:51

Create KVM Guest Disk



- KVM > Make RouterOS Image

The screenshot shows the KVMs management interface. A dialog box titled 'Make RouterOS Image' is open in the foreground. The dialog box has a blue title bar and contains the following fields and controls:

- File Name:** A text input field containing 'brikerbox.img', which is highlighted with a red rectangular border.
- File Size:** A text input field containing '2048' followed by a 'MiB' unit label.
- Configuration Script:** A large, empty text area for entering a configuration script.
- Buttons:** Three buttons are located on the right side of the dialog: 'Start', 'Stop', and 'Close'.
- Status:** A label 'Status:' followed by an empty text input field at the bottom of the dialog.

In the background, the KVMs interface is visible, showing a table with columns: Name, CPU C..., Memor..., Disk Images, Kernel, Kernel Cmdline, and Status. The table lists several KVMs, including 'kvm-7', 'kvm-11', 'kvm1', 'psense-test', 'radius-server', 'ubuntu-proxy', and 'ubuntu-test'. The 'Make RouterOS Image' button is visible in the toolbar above the table.

Create KVM Guest OS



- KVM > New KVM
- Konfigurasi

Name	briker
CPU Count	1
Memory	512
Disk Image : cdrom	briker-1.2.iso
Disk Image : hda	/sata2/brikerbox.img
VNC Server	0.0.0.0
VNC Server Display	2

- Kemudian Klik OK

Create KVM Guest OS



The screenshot displays the KVM configuration interface. A 'New KVM' dialog box is open, showing the following configuration:

- Name: `brikerbox`
- CPU Count: 1
- Memory: 512 MiB
- Disk Images: `cdrom` : `riker-1.2.iso`
- `hda` : `/sata2/brike`
- Kernel: (empty)
- Kernel Cmdline: (empty)
- Initrd: (empty)
- VNC Server: 0.0.0.0
- VNC Server Display: 2

Buttons on the right side of the dialog include: OK, Cancel, Apply, Disable, Comment, Copy, Remove, Console, Start, Shut down, and Reconfigure.

A 'File List' window is open, showing a directory listing of files and folders. The file `sata2/brikerbox.img` is selected. Red arrows indicate the flow of information: one arrow points from the `riker-1.2.iso` field in the 'New KVM' dialog to the `riker-1.2.iso` file in the 'File List' window; another arrow points from the `riker-1.2.iso` file to the `OK` button; a third arrow points from the `OK` button to the `sata2/brikerbox.img` file; and a fourth arrow points from the `sata2/brikerbox.img` file to the `hda` field in the 'New KVM' dialog.

File Name	Type
IHB4-WCHD.key	.key
VidiScript.zip	.zip
briker-1.2.iso	.iso
oem.ini	.ini
pSense.img	.img
pSense.iso	.iso
pfsense	file
pfsense.img	.img
pub	dire
sata2	disk
sata2/a	dire
sata2/brikerbox.img	.img
sata2/lost+found	dire
setup.msi	.msi
skins	dire
squid.img	.img
ubuntu-11.04-server-i386.iso	.iso
ubuntu-radius.img	.img

Create Virtual Ethernet



- Interface > Virtual Ethernet

The screenshot displays the 'Interface List' window in a network configuration tool. The 'Virtual Ethernet' option is selected in the left-hand menu. The 'New Interface' dialog box is open, showing the following configuration:

- Name:** vif4-brikerbox (highlighted with a red box)
- Type:** Virtual Ethernet
- MTU:** 1500
- L2 MTU:** (empty)
- MAC Address:** 02:6C:18:BD:12:19
- ARP:** enabled

Buttons on the right side of the dialog include OK, Cancel, Apply, Disable, Comment, Copy, Remove, and Torch.

Create Virtual Ethernet



- Bridge virtual ethernet dengan physical ethernet

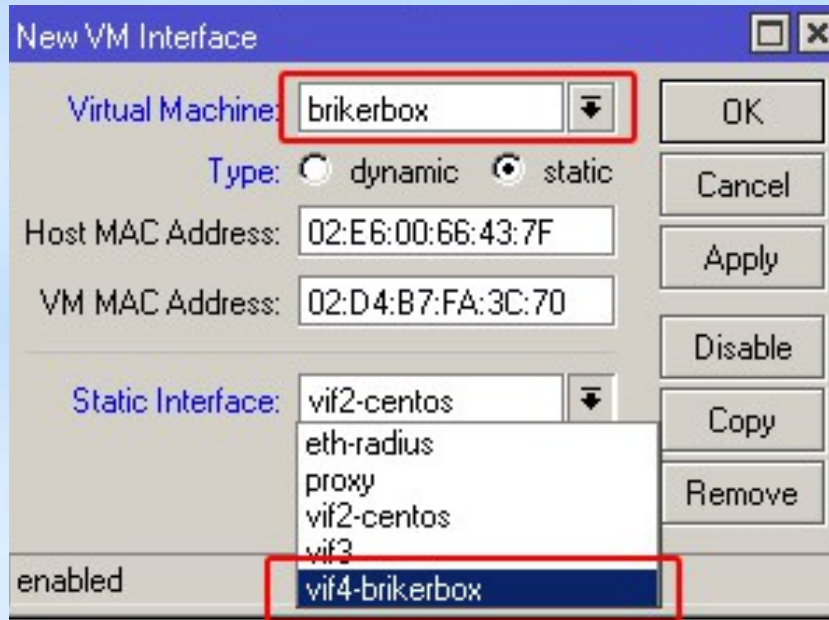
The 'New Bridge Port' dialog box is shown with the 'General' tab selected. The 'Interface' dropdown menu is highlighted with a red box and contains the text 'vif4-brikerbox'. Other fields include 'Bridge' set to 'bridge2', 'Priority' set to '80', 'Path Cost' set to '10', 'Horizon' set to an empty dropdown, 'Edge' set to 'auto', 'Point To Point' set to 'auto', and 'External FDB' set to 'auto'. The 'enabled' radio button is selected at the bottom.

The 'New Bridge Port' dialog box is shown with the 'General' tab selected. The 'Interface' dropdown menu is highlighted with a red box and contains the text 'ether2'. Other fields include 'Bridge' set to 'bridge2', 'Priority' set to '80', 'Path Cost' set to '10', 'Horizon' set to an empty dropdown, 'Edge' set to 'auto', 'Point To Point' set to 'auto', and 'External FDB' set to 'auto'. The 'enabled' radio button is selected at the bottom.

Create Virtual Ethernet



- Tambahkan virtual ethernet pada VM 'Briker'
- KVM > Interfaces



Start Briker (install)



- KVM >brikerbox> Start, untuk memulai instalasi Brikerbox

The screenshot shows the KVM interface with a list of VMs on the left and a configuration window for 'brikerbox' on the right. The 'brikerbox' VM is selected in the list, and its configuration is shown in the right-hand window. The 'Start' button is highlighted with a red box, and the 'Status: running' indicator at the bottom is also highlighted with a red box.

Name	CPU C.	Memor	Disk Images
brikerbox	1	512	cdrom:briker-1.2.iso, h...
kvm-7	1	512	hda:pfSense.iso
kvm-11	1	128	cdrom:pfSense.iso, hd...
kvm1	1	128	hda:pfSense.img
psense-test	1	512	hda:pfSense.img
radius-server	1	512	hda:ubuntu-radius.img
ubuntu-proxy	1	512	hda:squid.img
ubuntu-test	1	512	hda:ubuntu-test-10GB...

KVM <brikerbox>

Name: brikerbox

CPU Count: 1

Memory: 512 MIB

Disk Images: cdrom : briker-1.2.iso
hda : /sata2/brike

Kernel:
Kernel Cmdline:
Initrd:
VNC Server: 0.0.0.0
VNC Server Display: 2

Snapshot

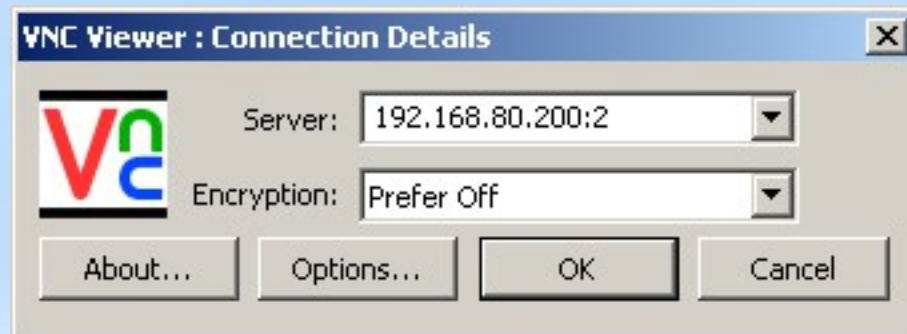
enabled **Status: running**

Display via VNC Viewer



Server : [IP MikroTik : VNC Server Display]

- Server : 192.168.80.200:2
- Encryption : Prefer Off



Display via VNC Viewer



Booting CD-ROM

Proses Instalasi

```
QEMU (brikerbox)
ata0 master: QEMU HARDDISK ATA-7 Hard-Disk (2048 MBytes)
ata1 master: QEMU DUD-ROM ATAPI-4 CD-Rom/DUD-Rom

Press F12 for boot menu.

Booting from CD-Rom...

ISOLINUX 3.63 Debian-2008-07-15 Copyright (C) 1994-2008 H. Peter Anvin

Welcome to Briker 1.2 "Kilat" installer menu.

- Please type 'install' and press Enter for unattended installation
- Please type 'wizard' and press Enter to install Briker with wizards
- Please type 'hd' and press Enter to boot from first disk (default)

Getting started guide, manuals and supports available at http://www.briker.org

WARNING:
When unattended installation selected (menu 'install') this installer will
erase (delete and format) previous data on your disk without confirmation.

boot: _
```

```
QEMU (brikerbox)

Installing the base system
83%
Preparing linux-image-2.6.28-11-generic
```

Proses Instalasi selesai

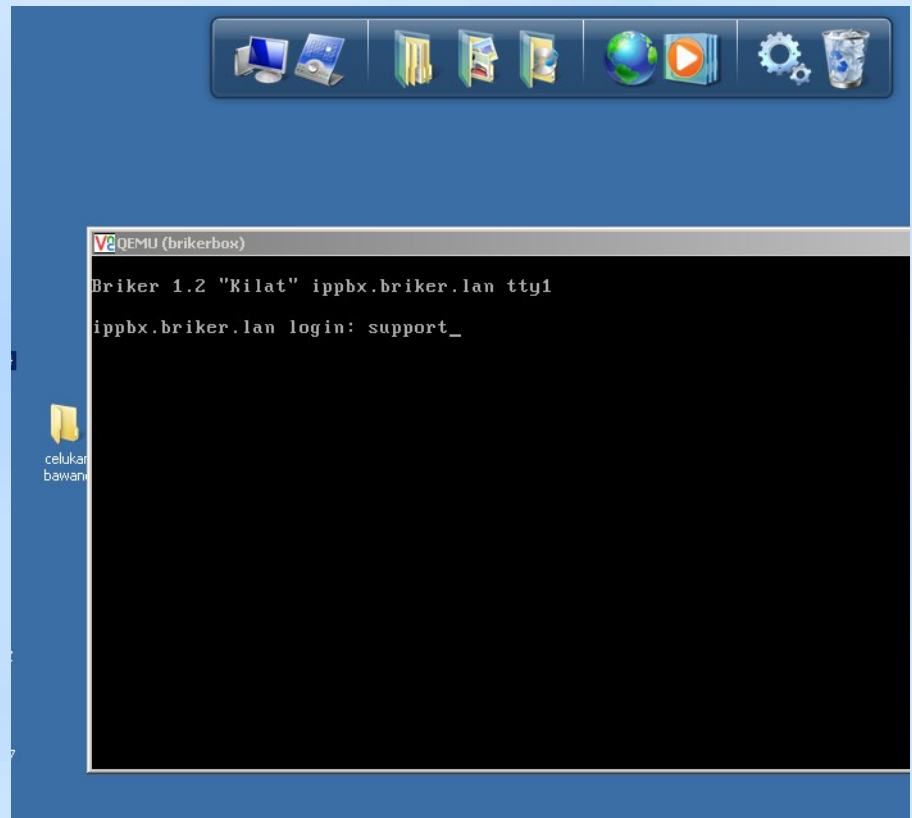
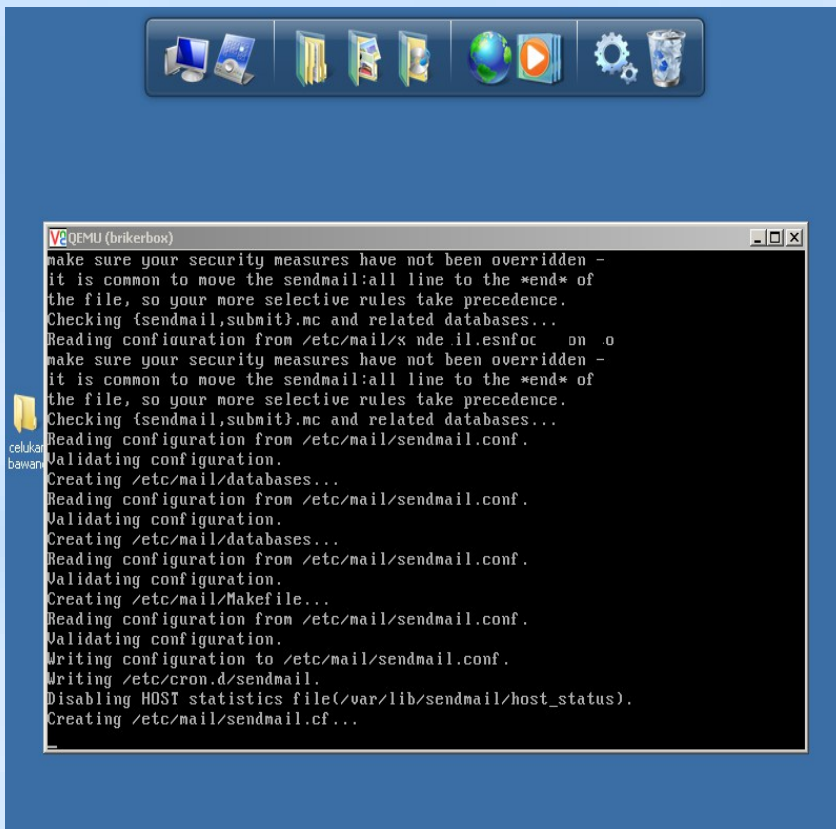
```
Sending SIGKILL to all processes
Requesting system reboot
[ 135.393431] md: stopping all md devices.
[ 136.492136] Restarting system.
[ 136.500503] machine restart
```

VNC KVM Briker



Booting Briker

Login Briker



Setting Briker



- Konfigurasi IP Address
- “sudo vi /etc/network/interfaces”

```
QEMU (brikerbox)
# This file described the network interfaces available on your system
# and how to activate them.

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto eth0
iface eth0 inet static
    address 192.168.80.212
    netmask 255.255.255.0
    network 192.168.80.0
    broadcast 192.168.80.255
    gateway 192.168.80.1

:wg_
```

Login Brikerbox



A screenshot of a web browser window. The address bar shows the URL '192.168.80.212'. The browser's toolbar includes a search engine (Google) and several bookmarks. The page title is 'Briker 1.2 "Kilat"'. The navigation menu includes 'Home', 'IPPBX Administration', 'Billing', 'CDR', 'ACD Statistics', and 'User Portal'. On the right side, there are links for 'Operator Panel' and 'Server Manager', and a copyright notice: 'Briker Core © 2008 PT. Infotech Media Nusantara'. The main content area features a central 'IPPBX Login' form with a user icon. The form contains two input fields: 'Username' with the value 'administrator' and 'Password' with masked characters. A blue 'Login' button is located below the password field.

Login Brikerbox



The screenshot shows the web interface of Briker 1.2 "Kilat" accessed via a Firefox browser. The browser's address bar shows the URL: `192.168.2.2/?mit=ffe55a6c81b7c71d8ddd6209bd47e2c2&miu=administrator&mm=`. The page title is "Briker 1.2 'Kilat'" and the breadcrumb navigation includes "Home | IPPBX Administration | Billing | CDR | ACD Statistics | User Portal".

The interface is divided into several sections:

- Left Navigation Menu:** Contains tabs for "Setup" and "Tools", and a list of administrative options including "Admin", "IPPBX Status", "Basic", "Bulk Extensions", "Custom Contexts", "Device Auto Provisioning", "Extensions", "Feature Codes", "General Settings", "Outbound Routes", "Trunks", "Inbound Call Control", "Inbound Routes", "Zap Channel DIDs", "Announcements", "Blacklist", "CallerID Lookup Sources", "Day/Night Control", "Follow Me", "IVR", "Queues / ACD", "Ring Groups", "Time Conditions", and "Internal Options & Configuration".
- IPPBX Status Section:**
 - IPPBX Notices:** A box indicating "No new notifications" with a "show all" link.
 - IPPBX Statistics:** A table showing call and channel metrics:

Total active calls	0
Internal calls	0
External calls	0
Total active channels	0
IPPBX Connections	
IP Phones Online	3
 - Uptime:** A box showing system and Asterisk uptime (41 minutes) and last reload time (0 minutes).
- System Statistics Section:** A table showing resource usage:

Processor	
Load Average	0.00
CPU	1%
Memory	
App Memory	8%
Swap	0%
Disks	
[Disk]	42%
/lib/init/rw	0%
/var/run	0%
/var/lock	0%
/dev	0%
/dev/shm	0%
/lib/modules/2.6.28-11-..	0%
var	19%
Networks	
eth0 receive	0.17 KB/s
eth0 transmit	0.83 KB/s
- Server Status Section:** A table showing the status of various services:

Asterisk	OK
MySQL	OK

The Windows taskbar at the bottom shows the system clock as 13:08 on 20/10/2012.

Testing - Workshop



- Setting VoIP ext
- Testing
Ip Phone
Softphone
Video Phone



Sumber



- <http://wiki.mikrotik.com/wiki/Manual:KVM>
- <http://forum.mikrotik.com/viewforum.php?f=15>
- <http://briker.org>
- <http://google.com>

■ Commerce

- PT. Astra Internasional
- PT. Toyota Astra Finance
- PT. Cyber Network Indonesia
- PT. Tri Wahana Universal
- PT. PLN Pusat
- PT. Tiga Pilar Sejahtera
- PT. Setia Guna Sejati
- PT. Redtree Indonesia
- PT. Indofarma Global Medika (IGM)
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- PT. Cipta Srigati Lestari
- PT. Perdana Telekomindo
- PT. Industri Gula Nusantara (IGN)
- PT. Telkom (Bandung)

■ Government

- Kabupaten Malinau
- Bulog (Badan Urusan Logistik)
- Badan Karantina (Deptan)
- Puspiptek
- PT. KAI Commuter JABODETABEK
- Komisi Pemberantasan Korupsi (KPK)
- Kemenkes
- Kemenkoinfo
- Others..

■ Comunity

- Voip Rakyat
- ICT Centre Jakarta
- PKPU
- Others...

Terima kasih



- Pertanyaan ...?

-

Why Mikrotik that runs on x86 only support a maximum of 2 gigabytes of memory?

Can be increased to more than that, even unlimited?