The Digital Transformation Imperative

Innovate or Become Irrelevant

docker

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01. Are You Ready for the Digital Economy?

Digital Transformation is an Imperative for Today's Business

While it may feel like an overused term, digital transformation is one of the top priorities for CIOs and CEOs today. According to a 2018 Gartner survey, 62 percent of CEOs have a management initiative or transformation program to make their business more digital. What's driving this trend?

Customers Expect Digital-First Experiences

Digital-first and online businesses such as Netflix, Uber and Amazon have raised customer expectations dramatically for every business. Whether someone is buying an airline ticket or life insurance, renewing a driver's license, going on a cruise or procuring construction services and materials for new stadium project, they expect to interact digitally. They expect you – the supplier – to know who they are, and have all the right information about them.

Barriers To Competition Have Evaporated

Global competitors have access to world-class talent, technology and processes. Startups can emerge in a matter of a few years and disrupt entire industries. In many cities, Uber and Lyft now dominate markets. You'd be hard pressed to find more than a few taxis at major airports.

Internal Systems Are Increasingly Connected

Internal systems increasingly connect with supply chain or customer-facing services. Core applications are under stress to be more flexible, real-time and drive competitive differentiation.

Meeting customer expectations and remaining competitive means organizations must embrace rapid innovation. It means capitalizing quickly on opportunities to incorporate different data streams, and adding new capabilities to existing products, or creating entirely new digital services.

"In a world where we can't predict the future and new competitors can come from many directions, we will win by being able to embrace change and reconfigure our priorities in real time."

**JAMES MCGLENNON
EVP AND CIO**

Liberty Mutual

Every Company is a Software Company

> **"Our biggest priority has been our transformation from an industrial manufacturing company ... into a software, hardware and firmware design and manufacturing company."**
>
> **BRIAN MAGNUSSON**
> **VP, INNOVATION AND TECHNOLOGY**

To keep up with the pace of change, every company must become a software company. This is the reality today where software has become the foundation for achieving your core business objectives and achieving competitive advantage— it's what enables you to deliver and scale innovation across the business.

From industrial manufacturers to airlines and insurance companies, products and services gain an edge through software. To succeed, even 150-year old banks and traditional manufacturers must become software companies.

Lindsay Corporation makes, among other things, large-scale agricultural irrigation systems – steel pipes for farms. The company now leads with its irrigation management software and is investing heavily in IoT.

Can your organization build software, embrace digital transformation and meet or even exceed customer expectations? And can you do it while maintaining existing technology investments? Or will you continually lose customers to competitors who are delighting customers with new digital services?

An Overwhelming Array of Technology Choices

Agile IT. Hybrid cloud. Application frameworks. Microservices.

New technologies and concepts holds promise, but like the cereal aisle in the grocery store, there are an overwhelming number of options. Which cloud provider? Which Linux distribution? Which application framework? What about databases, big data, and machine learning software?

CIOs are expected to make the right investments and standardize as much as possible to limit costs. At the same time, business units are demanding the flexibility to use the solution that fits best for each use case.

IT leaders are rarely successful in imposing standards that don't meet the needs of the business. But without strict adherence to standards, how can IT support agile development processes and move applications to the cloud?
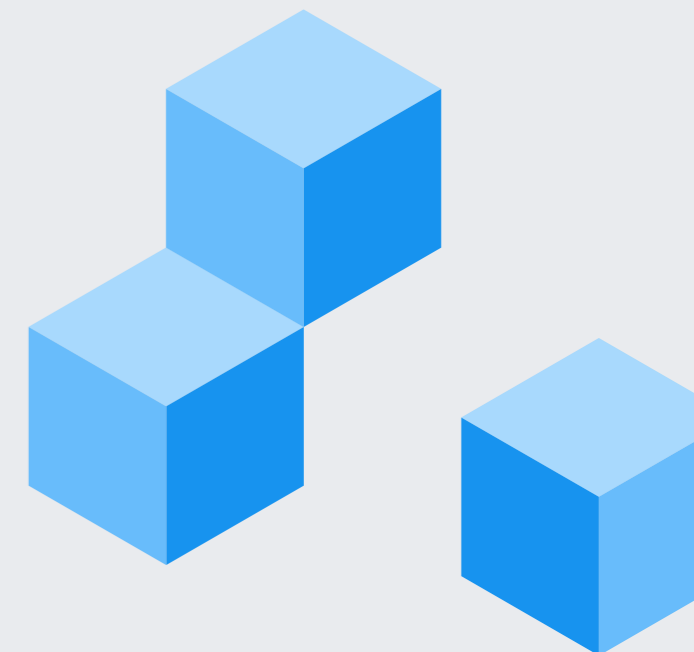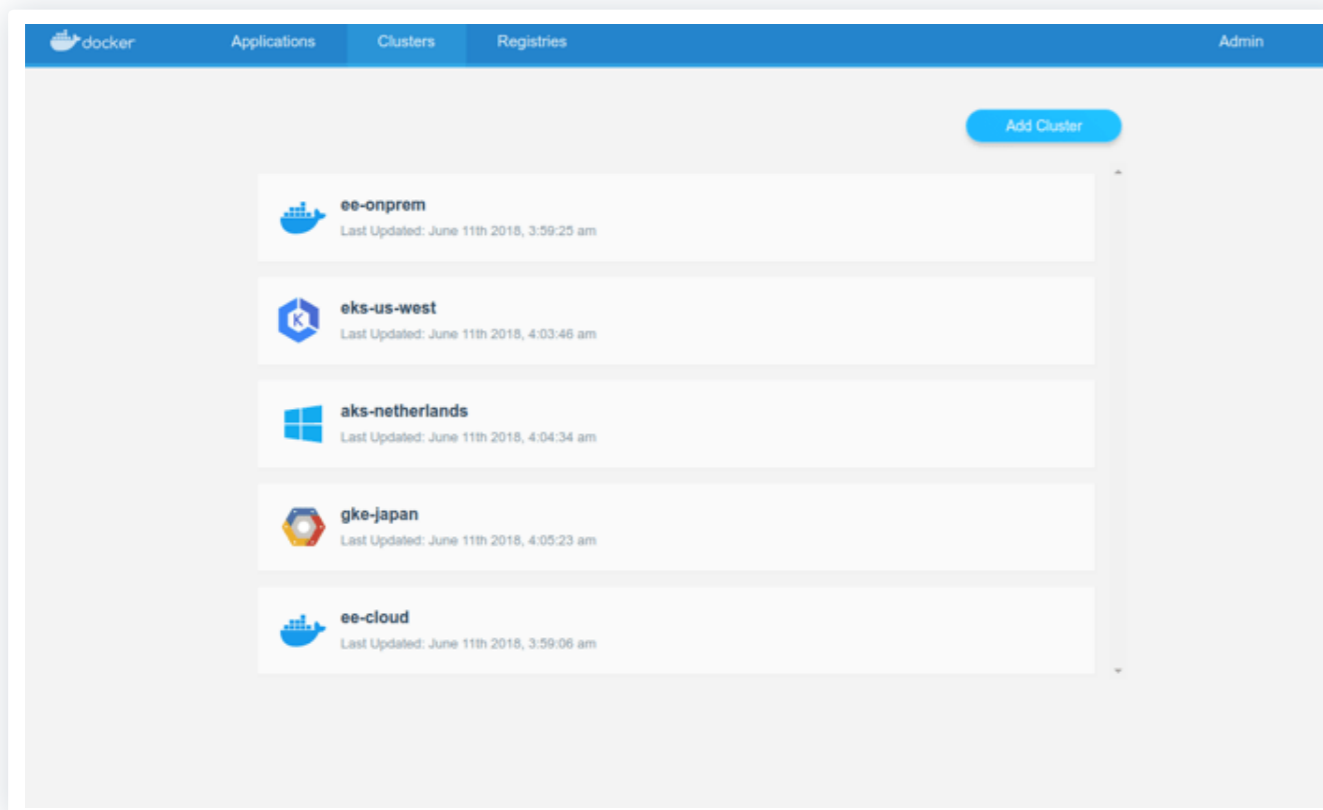
The Weight of Accumulated Technical Debt

Almost every organization has legacy technology – the accumulated debt from decades of investments in different technology platforms. Even tech giants such as Google, Facebook and Amazon have been around for 15 to 20 years.. They have legacy systems that divert resources from innovation, though these massive enterprises can often afford to eliminate unprofitable, unpopular or difficult to maintain services with few consequences.

Most enterprises don't have that luxury. Legacy applications are there for a reason. They serve an important purpose and are critical to the day-to-day operations of the organization.

Insurance companies and banks that have been in business for 150 years can easily have hundreds of systems of record running on dozens of different platforms – technology debt built up over time through acquisitions, new business lines, or just efforts to modernize infrastructure in the past.

An insurance company often can't retire a platform until after all of the policies managed on it have been terminated. That can mean waiting decades to retire a COBOL or Fortran application and all of its associated components. Rewriting the underlying application is so expensive and time-consuming that the economics rarely work out favorably.

But "keeping the lights on" for legacy applications is also expensive. Business-as-usual systems consume 70 to 80% of the budget, leaving little room for innovation. There's a strong desire to shift budget to innovation, but legacy applications just refuse to die.

20% Innovation

80% Maintenance
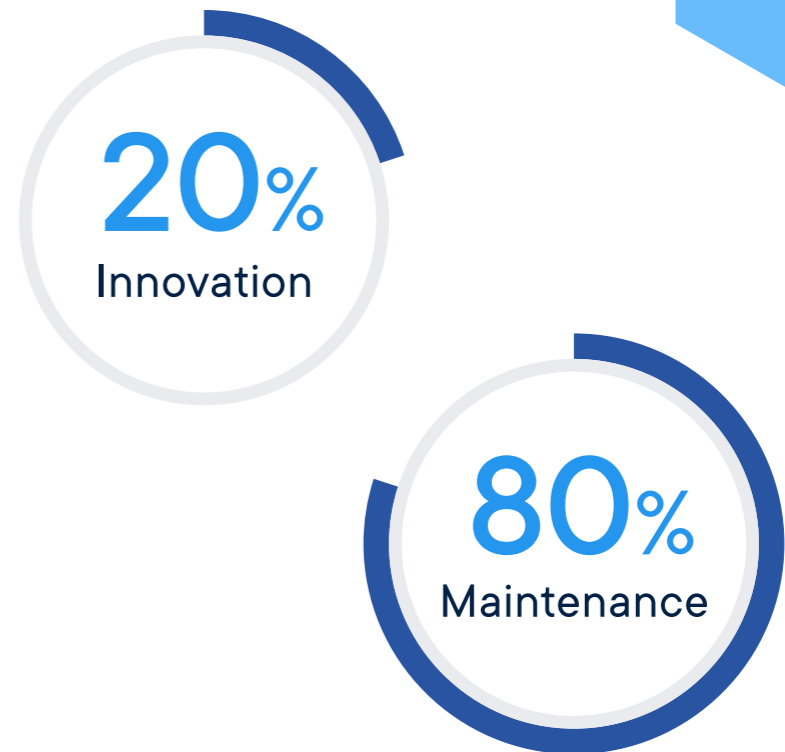
Legacy Applications: Rewrite or Replace?

Organizations may look at their legacy application portfolio and decide that almost every single app should be replaced, but it isn't a realistic endeavor – especially as Windows Server 2008 or other platforms approach end-of-support.

Replacing older applications with cloud-native technologies and microservices architectures may be the preferred option, but most organizations can only tackle a few application refresh projects a year. And focusing only on complete redevelopment will cause organizations to fall behind as they wait for the resources to become available.

The other path is modernizing existing applications. But refactoring and recoding existing applications piece by piece presents different challenges. Existing production applications often have narrow downtime windows, and have dependencies on older operating systems and platforms.

JIREH
SEMICONDUCTOR, INC.

Challenge

The wafer production systems were running on 25 year-old Unix servers. Applications were built on Java 1.3. The company wanted to expand production, but the existing platform couldn't support it. The monolithic application was fragile and expensive to maintain, but taking it offline to update it meant lost revenue.

"We looked at Docker to mitigating some of our security risks with our legacy applications running on Windows 2008 and even 2000 and 2003. Docker addressed our legacy application problem by giving us a platform to easily extract the application from the operating system."

**JASON BROWN
IT PROGRAM MANAGER, HOSTING**

Entergy

Solution

Containerize 230 application components with Docker Enterprise to eliminate hardware and operating system dependencies. The company is continuing to modernize its infrastructure, and has increased production almost 100 percent to 32,000 wafers per month.
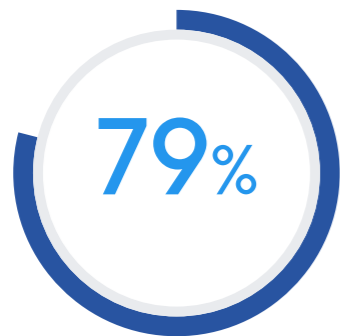
The Core Challenges Facing IT

As traditional businesses transform into application companies, speed, flexibility and security become absolutely essential and yet increasingly complicated given technical debt, vendor stacks and the risks and requirements around protecting data and systems in distributed scenarios, such as hybrid or multi cloud.

Infrastructure Complexity

Developers gravitate towards solutions that allow them to build and create new applications with the least friction. That leads to platform sprawl, where different applications get deployed across different frameworks, operating systems and clouds – meaning applications often need to be tested multiple times.

Platform Lock-In

Lock-in with both traditional and emerging technology vendors that have proprietary platforms or processes inhibit your ability to move forward with new technology and adopt new strategies quickly. Any platform should provide the flexibility to run across public and private clouds, and support all common operating systems and application frameworks.
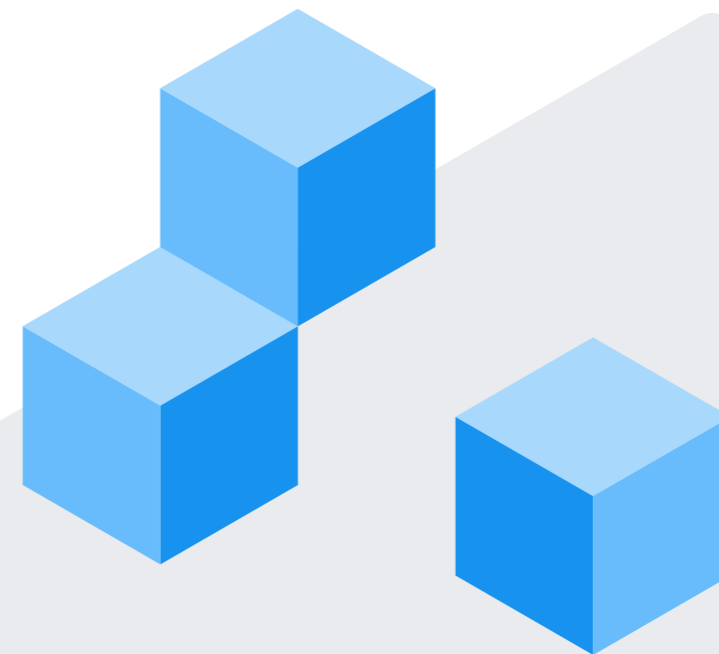
79%

79 percent of enterprise workloads now run in a public or private cloud, but that masks the complexity of the problem. Companies now use an average of 4.9 public and private clouds, with 84 percent of enterprises reporting they are pursuing a multi-cloud strategy.[1]

1. *2019 Rightscale State of the Cloud Report by Flexera*

The Core Challenges Facing IT (Continued)

Friction & Inefficiency

Existing applications, tooling and processes make the development-to-production pipeline slow error prone. Decades of accumulated technical debt make it hard to change.

Even modern platforms such as virtualization have limits. The average data center operates at less than 20% CPU utilization, which leaves money on the table. Improved efficiency alone can reduce your future capex spend and help scale to meet your growth needs.

Infrastructure complexity and inefficiency also means developers spend too much time either building out infrastructure, or waiting for it to be built. Developers are at their best when they are writing code, creating new software or improving existing software. Building infrastructure ranks high on the list of productivity gains for developers.

Increased Security Threats

Security has become more complex and high-stakes. Applications need to be secured across hybrid and multi-cloud environments while still empowering developers to be productive.

There are more stories of major security breaches happening every day. Organizations do not want to hinder innovation, but are also putting themselves at risk if they do not emphasize prevention and compliance.

IT Process & Culture

The way processes and teams are structured exacerbates the technology challenges. Change is hard, especially when organizations are structured around an old way of thinking that focuses as much as 80 percent of time and resources on existing applications and platforms.

The model and the underlying platforms are designed to keep things from breaking by maintaining the status quo. But they also make innovation and transformation difficult.
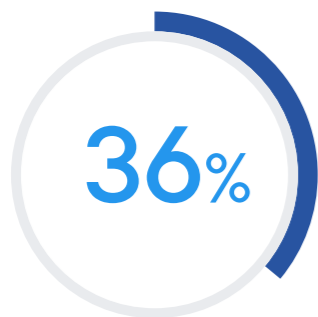
36% 36.5% of developers ranked being "tasked with non-development work" such as building infrastructure as a top productivity drain.[2]

54% 54.1% of developers said that the languages, frameworks, and other technologies they work with are one of the most important job criteria.[3]

2–3. *Stack Overflow 2019 Developer Survey*
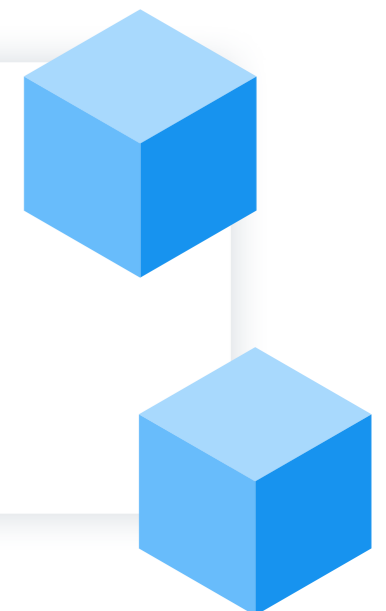
The Path to Digital Transformation

02.

Modernize the Old and Build the New

Organizations don't need to choose one path or the other. If the same platform can support modernizing existing applications – no matter the underlying components – and new application development, both become possible.

Unlock Innovation with Docker Enterprise

Docker is the only platform that provides a seamless end-to-end (desktop to cloud) experience for developing and scaling distributed applications. The Docker Platform is the easiest and fastest way to use containers and Kubernetes at scale, and the fastest time to production for modern applications - from legacy to brownfield to greenfield - and securely run them from hybrid cloud to the edge.

Over 800 enterprise customers across insurance, banking, technology, manufacturing, energy, healthcare, government and other sectors rely on Docker Enterprise to drive their digital transformation initiatives.

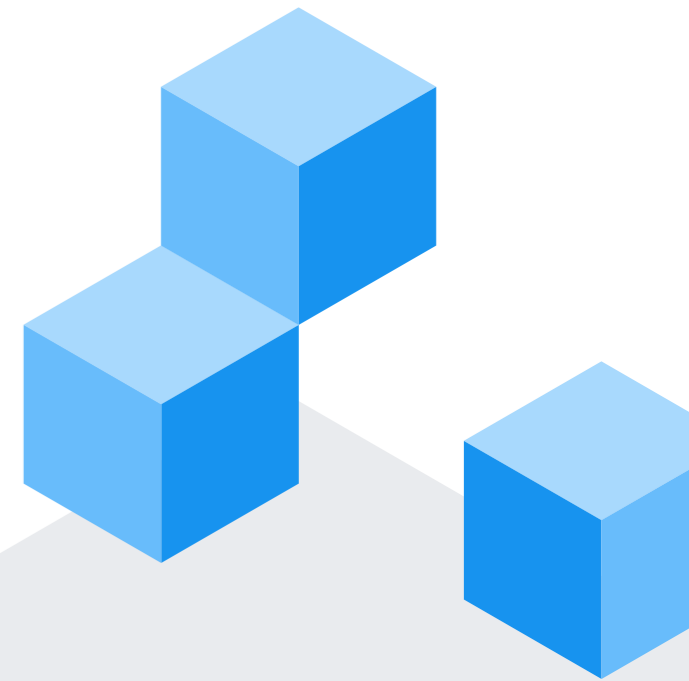**Docker Enterprise supports your organization's digital transformation efforts by giving you:**

1. High-Velocity Innovation

2. Freedom of Choice

3. Intrinsic Security

1. High-Velocity Innovation

Rapidly deliver engaging new customer experiences and transform existing processes. Citizens Bank and Carnival Corporation are among customers that rely on Docker Enterprise to fuel innovation.

Docker Enterprise Capabilities

- Developer productivity tooling
- CI/CD integration
- End-to-end Kubernetes support
- Day 1 and Day 2 automation
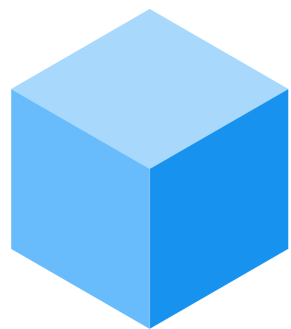
Move Faster

For Developers

Quickly ramp productivity. Deliver apps to production faster.

Leverage existing skill-sets.

For Operators

Rapidly distribute applications globally to any datacenter or cloud.

Update apps and infrastructure on-demand - with no downtime.

Citizens Bank Customer Spotlight: Innovation in the Mortgage Industry

Challenge

Deliver new applications to modernize the mortgage experience for customers, innovating quickly and scaling to meet growing demand.

Solution

Accelerate application development, modernize key applications and shift to a container-first strategy with 3,200+ containers/1,000+ services on Docker Enterprise and Docker Swarm.

Results

- Take new services from idea to production in hours or days
- Create a culture of innovation and become the bank's fintech arm
- 200+ deployments per day, up from a handful per quarter
- 40% reduction in server costs, 90% reduction in storage costs

> "The Docker platform has definitely helped us innovate. It helped us accelerate some of the ideas that we've had and move from idea to operate in a matter of hours in some instances. Docker has given us a lot of capabilities there that will distinguish us in the mortgage industry.

**MATT RIDER
CIO MORTGAGE DIVISION**

Carnival Customer Spotlight: Creating A Personalized Vacation Experience On Board and On Shore

Challenge

Remain competitive and stand out in the vacation industry by creating a personalized, streamlined experience for Carnival passengers that best suits their individual wants and needs.

Solution

With Docker Enterprise, Carnival builds and deploys the Medallion service, a system that incorporates over 300 onboard services into a single medallion passengers carry to access services.

Results

- New system was rolled out in August of 2018 and is now on 4 ships, with plans to expand to 110 ships and 15 resorts.
- On-board services run on less than 100 containers, streamlining infrastructure.
- New services and updates can be rolled out immediately.

> "With Docker Enterprise, our developers are more productive and can get new capabilities to our guests faster. It also reduces the overall infrastructure footprint on each ship."

**TODD HEARD
VICE PRESIDENT OF TECHNOLOGY**

2. Freedom of Choice

Docker Enterprise provides optimal agility and flexibility to meet your business needs. Easily adapt to the next technologies on your own timeline, while leveraging existing knowledge and processes. Docker Enterprise gives Nationwide Insurance, Halliburton and hundreds of other enterprises the flexibility to choose the operating system, cloud provider, application framework and tools without compromise.

Docker Enterprise is the only independent container platform. We support any programming language, any framework, any OS and any infrastructure. For Nationwide, this means both old and new applications can be easily ported to the cloud.

With Docker, you can easily adapt new technologies on your own timeline, while leveraging existing knowledge and processes. Your developers will have the freedom to choose the best tools, languages and frameworks for each project. And your IT organization can use the OS and infrastructure that makes the most sense for what they're trying to accomplish, without vendor lock-in.

Docker Enterprise Capabilities

- Any programming language

- Any application framework

- Any operating system

- Any infrastructure - bare metal, VM, or public cloud

Flexibility Your Business Requires

For Developers

Freedom to select the best tools, programming languages, and application frameworks for any project.

For Operators

Industry-standard Docker runtime gives the freedom to use the right OS and deployment infrastructure for each project - without vendor lock-in.

Nationwide Customer Spotlight: Cloud-First, Container-First Strategy Drives Digital Transformation

Challenge

Legacy platforms meant rolling out a new application could take 3 years, holding back the company's efforts to transform its business by taking advantage of cloud and other new technologies.

Solution

Docker Enterprise lets Nationwide pursue a cloud-first strategy and transform monolithic legacy applications to modern digital services, and accelerate software innovation.

Results

- Cloud-first, container-first strategy maximizes flexibility
- Claims, Property & Casualty, and Life business units have all containerized apps
- 100x faster software delivery – from 1 week to about an hour
- $2 million saved annually in application TCO

> "Moving from our legacy, monolithic applications to modernized services allows us to meet our members in new ways we never thought were possible."

**ERIC ZIELINSKI
DIRECTOR, CLOUD SOLUTIONS**

Halliburton Customer Spotlight: Application Portability Across Cloud, Datacenter and Edge

Challenge

Needed portability between mobile, edge, cloud, and data center environments, but legacy applications couldn't be moved or upgraded easily.

Solution

Docker Enterprise for centralized management and optimization of workloads — providing support for workload distribution to mobile, edge, cloud, and data centers.

Results

- Increased productivity on oil rigs with less system maintenance
- Increased hardware utilization and reuse old hardware, lowering I.T. costs
- Containerized legacy applications are portable across datacenters and clouds

> "Portability is really important to us. We have a hybrid with compute in the cloud, in our datacenters and at the edge, so we needed a platform where we could provide centralized management but execute that same type of logic in all three locations."

**TORBEN PEDERSEN
ENTERPRISE ARCHITECT**

3. Intrinsic Security

With Docker Enterprise, enterprises can continuously ensure compliance and risk mitigation without slowing down innovation. Docker is the only platform that can provide trusted and certified end-to-edge security. Companies such as Equifax, ADP, Visa and Bosch have built secure application pipelines with Docker Enterprise.

Docker Enterprise delivers security without compromise. Bosch is able to create a secure developer environment and global software supply chain because Docker Enterprise is designed to continuously ensure compliance and risk mitigation without slowing down innovation. It helps ensure security in any environment, on-prem, hybrid and cloud, without getting in the way of developers and IT's ability to bring applications to market.

This means that developers can securely build and deploy new applications in any operating environment, without impacting productivity. And operators can ensure separation of concerns and duties, easily audit changes and improve mean remediation time for vulnerabilities.

Docker Enterprise Capabilities

- End-to-end, multi-layered security architecture
- Automated app scanning, signing, and policy enforcement
- Automated compliance assessment and reporting

Security Without Compromise

For Developers

Build and deploy secure, portable hybrid cloud apps without impacting productivity.

For Operators

Audit-ready provenance of changes. Secure separation of concerns.

Rapid vulnerability remediation.

Bosch Customer Spotlight: Enabling a Secure Container Platform for 62K Developers in 260 Global Locations

Challenge

Unmanaged software development environments created security risks, as well as implementation and compliance inconsistency between business units.

Solution

Docker Enterprise to deliver a centralized container platform that supports over 1,000 image repos and dozens of globally distributed clusters in a scalable, compliant and standardized manner.

Results

- 99.999% service uptime
- Centralized environment for developers
- Easily add clusters and services while ensuring compliance and best practices

> **"We have 62,000 developers and product teams who rely on the Docker Enterprise registry to provide software distribution system, and that part of the platform that has to be secure."**
>
> **TILL SCHENCK**
> **INFRASTRUCTURE ARCHITECT**   **BOSCH**

Equifax Customer Spotlight: Faster and More Secure Customer-Centric Application Delivery

Challenge

Slow software development process and lack of transparency held up projects and created security risks.

Solution

Docker Enterprise and Docker Registry for a secure software supply chain.

Results

- Developed and launched brand new Lock & Alert web application in three months
- Deeper transparency and metrics helps spot issues quickly
- Routine software deployment tasks cut from hours to under 20 minutes

> **"Docker Enterprise means confidence to deploy software and know exactly what's going out, know it will be stable, secure, and know it will work."**
>
> **JAYA POLUMURU**
> **SENIOR DIRECTOR OF TECHNOLOGY**   **EQUIFAX®**

03. A Foundation for Digital Transformation

Docker Enterprise provides the platform for innovation for today and tomorrow. As you think about your digital transformation strategy, Docker Enterprise is uniquely positioned to deliver innovation across your application portfolio.

In The Forrester New Wave™: Enterprise Container Platform Software Suites, Q4 2018 report, Docker Enterprise received a differentiated rating in 8 out of 10 criteria, the most of any of the vendors evaluated. In fact, they specifically state that Docker Enterprise "**leads the pack with a robust container platform well-suited for the enterprise**."

And in the 2019 Stack Overflow Developer Survey, Docker ranks first as the most wanted platform, is the second most loved platform and the third most used.

And Docker's customers agree.

"**Docker plays a very critical role in our digital transformation by supporting our Medallion Class project. Cruise ships are essentially mobile cities that provide everything that a guest could need or want. And Docker gives us the unique ability to control the entire guest experience by connecting all these elements together.**"

TODD HEARD
VICE PRESIDENT OF TECHNOLOGY
CARNIVAL CORPORATION

CARNIVAL
CORPORATION&PLC.

FORRESTER®
NEW WAVE LEADER 2018
Enterprise Container Platform Software Suites

Read Full Report:

www.docker.com/resources/report/the-forrester-wave-enterprise-container-platform-software-suites–2018

![docker](docker logo)

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sales@docker.com