



# Build a modern IT foundation for maximum business efficiency

Your first steps toward IT optimization

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# Optimization—An efficient foundation for modern IT

Today's IT transformation is all about finding smarter ways to do business. Leadership is looking for solutions that accelerate output to meet rapidly changing customer demands.

However, many organizations struggle to deploy modern infrastructure due to the maintenance cost and management complexity of their existing systems.

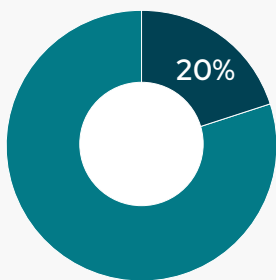
Studies show that **IT spends 71% of its budget on maintenance.**<sup>1</sup>

The process of IT optimization helps you incrementally reclaim that budget. The challenge is knowing where to start. Cloud, hyperconverged solutions, as-a-service delivery models, and more all compete for priority, leading to decision paralysis that keeps organizations from reaching their full potential.

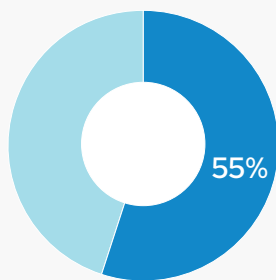
**It is time to make a choice.**

With an optimized IT foundation that supports automation and scales as you grow, you will implement what you want, when you want, without complex processes. By optimizing IT, you can focus your staff and budget on the projects that deliver deeper value to your customers.

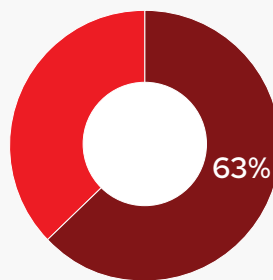
## The demonstrated value of IT optimization:



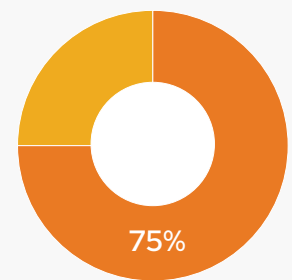
20% cut in IT environment operating costs<sup>2</sup>



55% less staff time spent on workloads compared to non-paid Linux infrastructure<sup>3</sup>



63% less unplanned downtime compared to non-paid Linux infrastructure<sup>3</sup>



75% cut in code change delivery time<sup>4</sup>

1 Futela, Shreya, and Disha Badlani, and Eric Stegman. "IT Key Metrics Data 2019: Executive Summary." Gartner, December 17, 2018, [www.gartner.com/en/documents/3895271/it-key-metrics-data-2019-executive-summary](http://www.gartner.com/en/documents/3895271/it-key-metrics-data-2019-executive-summary).

2 Red Hat case study. "CTOS improves agility for faster business expansion with Red Hat," November 2017, [www.redhat.com/en/resources/ctos-case-study](http://www.redhat.com/en/resources/ctos-case-study).

3 Marden, Matthew, et al. "The Business Value of Red Hat Solutions and Cost Relationship to Unpaid Alternatives," IDC, July 2019, [www.redhat.com/en/resources/idc-business-value-red-hat-solutions-compared-to-unpaid](http://www.redhat.com/en/resources/idc-business-value-red-hat-solutions-compared-to-unpaid).

4 Red Hat case study. "British Army speeds service delivery with Red Hat Ansible Tower," December 2018, [www.redhat.com/en/resources/british-army-case-study](http://www.redhat.com/en/resources/british-army-case-study).

# IT optimization defined

IT optimization is an incremental and methodical set of changes that moves your organization toward a standard infrastructure. This process becomes both a catalyst for change and a means to free up budget to invest in greater innovation.

Optimization doesn't happen all at once, which is good news for your organization. Through strategic optimization, you'll gradually introduce your teams to new levels of agility while improving overall productivity and business performance. With optimized software, platforms, and processes, you achieve faster delivery of software and services to both internal and external customers.

At its core, optimization is the foundation for IT modernization and long-term success.

## Three ways optimization boosts your innovative potential



### Digital transformation

- Incrementally frees up budget
- Provides a documented return on investment (ROI) and lower total cost of ownership (TCO)
- Builds the foundation for innovation required to remain competitive



### Standardization

- Provides a common, consistent framework
- Streamlines security and improves compliance
- Promotes the automation that tames complexity and reduces errors



### Simplified management

- Optimizes, secures, and scales infrastructure across hybrid cloud and multicloud deployments
- Allows for intelligent and systematic management of all elements of infrastructure across both modern and traditional IT environments

Are you ready to get started?

# Are you ready for IT optimization?

Are you unsure that IT optimization is what you need? If you identify with any of the common challenges, IT optimization is your answer.

## You are ready to optimize your infrastructure when you:

- Struggle to deploy modern infrastructure due to the cost of maintaining your current one.
- Rely on outdated and proprietary platforms that force one-off management and risk security exposure.
- Require significant training, support, and operational costs to maintain and use multiple architectures.
- Lack the standardization required to automate manual processes.
- Struggle with inconsistent management between infrastructures and environments.
- Lack the necessary configuration standards to reduce risk and downtime.
- Run multiple operating environments across physical, virtual, and cloud systems.

## You are ready for optimized efficiency and consistency when you:

- Struggle to take on bigger projects because your systems take disproportionate amounts of time and energy to maintain.
- Find it challenging to maintain consistency across a hybrid environment.
- Need better self-service and automation to help minimize error-prone, manual tasks.
- Manually manage the system life cycle from provisioning to configuring to patching hosts.
- Manually enforce license usage to stay compliant with subscription agreements.
- Spend a significant number of hours manually patching systems.

## You are ready for optimized processes and governance when you:

- Lack a systematic process for creating, tracking, and reporting end-to-end consumption.
- Have difficulty managing system life cycles, patching, maintenance, and subscriptions across on-premise, virtualized, and cloud-based deployments.
- Can't keep up with complex security policies, audit processes, and compliance with industry standards.
- React to breaches rather than proactively and prescriptively manage vulnerabilities.

# Step 1: Create consistency

IT teams often spend a disproportionate amount of time, energy, and budget managing hybrid environments throughout development cycles. They create custom scripts to deploy and maintain multiple platforms and use proprietary solutions and manual processes. These inconsistent environments hinder growth and demand reactive maintenance. Additionally, supporting multiple platforms increases the need for training, support, and operational budget.

The first step in IT optimization is to create a standard operating environment (SOE) across the entire organization. You will want to focus on choosing a modern solution that supports new technologies and practices, including hybrid and private cloud connectivity, cloud-native development, and containerization.

By choosing a standard platform, you can:



Eliminate error-prone manual tasks through automation and self-service.



Centrally manage the system life cycle, including provisioning, configuration, and patching.



Manage all license usage and stay compliant with subscription agreements.



Significantly reduce the time it takes to install, upgrade, and patch software.



Improve security and decrease shadow IT.



How much can you save per year?<sup>5</sup>

With a consistent infrastructure built on paid, open source technologies, the efficiencies stack up. According to IDC, the average annual benefits per 100 users include:

**IT staff productivity:**

**\$10,365 saved**

through efficiencies to automation, centralization of patching and updating, and ease of provisioning



**Risk mitigation:**

**\$4,200 saved**

by eliminating downtime



**IT infrastructure cost reductions:**

**\$874 saved**

by optimizing licensing and training costs



**Business productivity:**

**\$1,756 saved**

by better addressing business opportunities

<sup>5</sup> Marden, Matthew, et al. "The Business Value of Red Hat Solutions and Cost Relationship to Unpaid Alternatives," IDC, July 2019, [www.redhat.com/en/resources/idc-business-value-red-hat-solutions-compared-to-unpaid](http://www.redhat.com/en/resources/idc-business-value-red-hat-solutions-compared-to-unpaid).

# Step 2: Start with software

You cannot deliver transformation on traditional infrastructure. However, starting with new hardware is not only expensive, but also it might not yield the results you want. And if you migrate your existing operating environment to a new platform, you will recreate the same problems you already have.

By modernizing your software first, you will gain greater efficiency while accelerating your potential to adopt cloud-native and container-based development practices for even greater agility.

## Opportunities for software modernization



### Operating system

Select an operating system that not only builds a foundation for cloud agility and scalability, but also supports your existing development projects.

**\$44,500**

average three-year TCO savings through standardization<sup>6</sup>



### Management tools

Increase control with a single, centralized platform that provides proactive management of your entire infrastructure.

**38%**

more efficient IT infrastructure teams<sup>7</sup>

**20%**

reduced IT environment operating costs<sup>8</sup>



### Development platform

Move toward modernization with virtualized environments that support your current efforts, accelerating deployments and enabling cloud-native and containerized development practices.

**34%**

reduction in time required to deliver new applications<sup>7</sup>

**21%**

average productivity gain for development teams<sup>7</sup>



### Legacy platform migration

Eliminate expensive proprietary virtualization and open up an enterprise-ready pathway to elastic, scalable, and cost-efficient on-site cloud architectures built on open source technologies.

**32%**

lower infrastructure costs<sup>7</sup>

**63%**

less unplanned downtime<sup>9</sup>

**Reduce** IT deployment time from weeks to hours<sup>9</sup>

Ultimately, software modernization results in a 368% three-year return on investment (ROI).<sup>7</sup>

Once you've standardized on a single platform, you can start modernizing hardware and migrating to the cloud.

<sup>6</sup> "Migrating from UNIX to Linux on an open-standards platform," *redhat.com*, 2018, [www.redhat.com/en/resources/intel-unix-linux-open-standards-platform-partner-solution-overview](http://www.redhat.com/en/resources/intel-unix-linux-open-standards-platform-partner-solution-overview).

<sup>7</sup> Marden, Matthew, et al. "The Business Value of Red Hat Solutions and Cost Relationship to Unpaid Alternatives," IDC, July 2019, [www.redhat.com/en/resources/idc-business-value-red-hat-solutions-compared-to-unpaid](http://www.redhat.com/en/resources/idc-business-value-red-hat-solutions-compared-to-unpaid).

<sup>8</sup> Red Hat case study. "CTOS improves agility for faster business expansion with Red Hat," November 2017, [www.redhat.com/en/resources/ctos-case-study](http://www.redhat.com/en/resources/ctos-case-study).

<sup>9</sup> Red Hat case study. "Red Hat infrastructure migration solution," 2019, [www.redhat.com/en/resources/infrastructure-migration-solution-brief](http://www.redhat.com/en/resources/infrastructure-migration-solution-brief).



# Step 3: Optimize in the cloud

As you start to standardize and optimize your infrastructure, you begin to experience the benefits, including ease of upgrades, updates, and improved security. You will position yourself for the next step—building a cloud-ready platform.

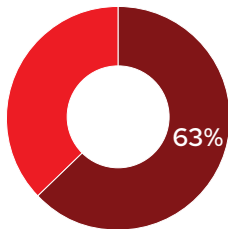
Cloud computing has created a dynamic, powerful alternative to monolithic server purchases and impactful datacenter refreshes. Public cloud allows you to add compute, storage, networking, and services as needed and provides near-instant access to turnkey modern development environments. Private cloud solutions offer compelling benefits from improved security, increased flexibility, and the elimination of complicated server and application management on legacy platforms.

By using the best solutions for your business in an optimized hybrid cloud environment, you can incrementally replace aging infrastructure without downtime to benefit from a flexible, stable, and efficient operating environment. You will also provide automation and self-service for users—an important consideration for developers who benefit from having on-demand IT resources to propel innovation for the business.

## Tame virtualization sprawl with an open, hyperconverged environment

In an effort to simplify and tame virtualization sprawl, many organizations go all-in on one public cloud, resulting in vendor lock-in. Alternately, they adopt high-level services that result in increasing costs. Or worse, they do nothing and continue maintaining costly legacy systems.

Another approach, an open hyperconverged infrastructure (HCI) environment provides a mature software-defined datacenter stack, including a standard operating system, virtualization, and software-defined storage (SDS). This foundation for modernization simplifies management, increases operational efficiency, and provides built-in cloud elasticity that scales on demand. By replacing sprawling legacy virtualization systems with open HCI, you will build a foundation for upstream innovation, including containerized and cloud-native development, while greatly lowering acquisition and operational costs by using an open source subscription model.



**63% of organizations** use two or more IT environments.<sup>10</sup>

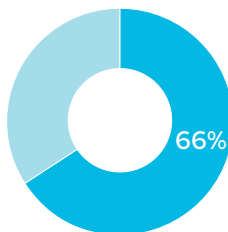
The top two strategies for hybrid cloud are:

**30%**

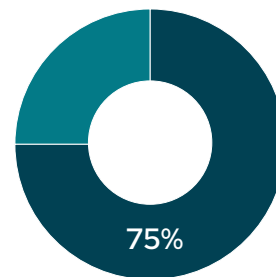
Dynamic movement

**21%**

On-premise for existing, with new apps in the cloud



**66% of organizations** using hybrid cloud are in the planning or implementation stages.



By 2020, **75% of organizations** will have deployed a multicloud or hybrid cloud model.<sup>11</sup>

<sup>10</sup> Cloud Technology Research, May, 2018, Red Hat and Qualtrics.

<sup>11</sup> Nag, Sid, and David Ackerman. "Market Insight: Making Lots of Money in the New World of Hybrid Cloud and Multicloud." Gartner, Sept. 27, 2018, <https://www.gartner.com/en/documents/3889017/market-insight-making-lots-of-money-in-the-new-world-of->



# Step 4: Continue to migrate where it makes sense

IT teams often stick with familiar tools, even when they stop providing the same level of innovation or value. In many cases, the current decision makers are the previous users of those same tools. Optimization is a continual process that challenges decision makers to keep looking toward new solutions that offer greater value to the organization.

## Where to look for migration opportunities in your organization



### Virtualization

Legacy virtualization tools result in both elevated risk and cost, with virtualization lock-in that prevents migration of applications to cloud-native and containerized environments.

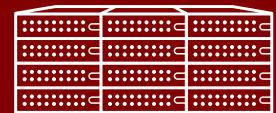
Look for an open source virtualization solution that supports modern development practices, including cloud-native and containerized development.



### Shadow IT

When business units resort to shadow IT, it can mean that internal IT is not delivering innovation quickly enough.

Continued optimization and modernization in targeted areas of the business can eliminate shadow IT while providing teams with the tools they need to deliver innovative solutions.



### On-premise infrastructure

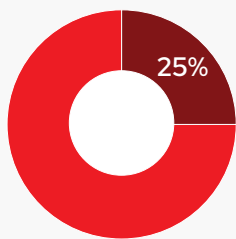
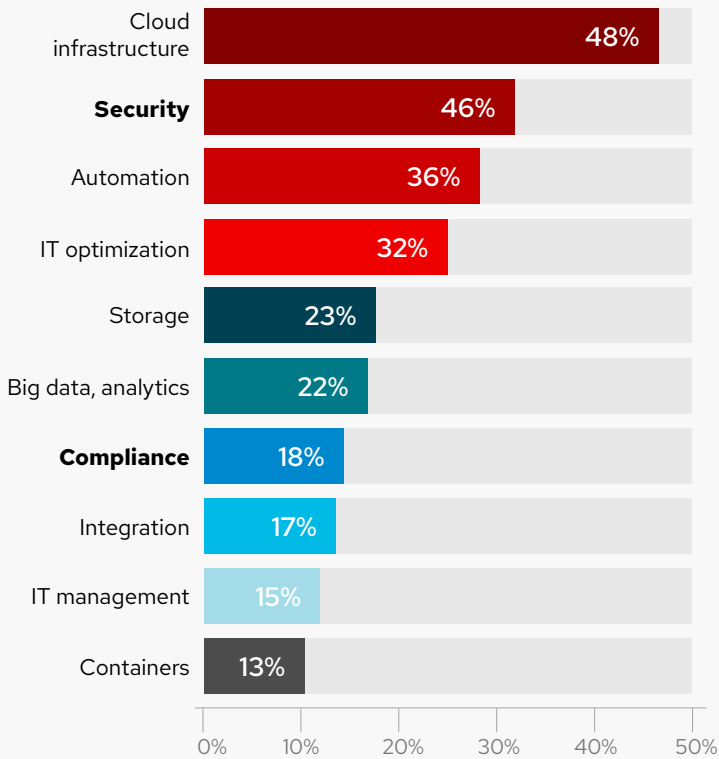
Many organizations look to hyperconverged infrastructure (HCI) to simplify management and increase operational efficiency. However, proprietary HCI offerings are often more costly due to inflexibility than more modern open source options.

An open, hyperconverged solution can solve inflexibility issues while providing simplified management and a mature program stack in a secure and compliant platform.

# Checklist: Top security and compliance concerns

Security and compliance are not a step of their own in the optimization process. They remain a persistent funding priority, and you should address them regularly.

Top 10 funding priorities for 2018:<sup>12</sup>



25% of customers surveyed named **funding and budgets** as a top-three challenge.

## Your optimization solution needs to:



Quickly secure systems and ensure compliance by regularly patching multiple systems at once.



Automatically assess both potential and active risks to your organization.



Automate tasks such as provisioning, patching, and content management, thereby freeing up your time for strategic projects.



Have the ability to automatically remediate known security vulnerabilities to reduce exposure.



Provide in-depth analysis and details of risks affecting every system, along with prescriptive analytics and stepwise remediation guidelines.



Provide rich reporting capabilities to keep stakeholders updated and to ease security compliance audits.



Accurately show how many and which systems in your environment are affected by security, configuration, or performance risks.



Scan and remediate security controls in an automated way for ease of compliance to both regulatory and custom security policies.

<sup>12</sup> "Red Hat Global Customer Tech Outlook 2018: Customers doing more with existing IT investments, expanding the role of cloud initiatives." [redhat.com](http://redhat.com), January 25, 2018, [www.redhat.com/en/blog/red-hat-global-customer-tech-outlook-2018](http://www.redhat.com/en/blog/red-hat-global-customer-tech-outlook-2018).



# Take the first step

**IT optimization is about balancing modernization and budget.**

You can take the first step toward platform modernization with a consistent foundation for the enterprise hybrid cloud—you will have what you need to optimize your virtualization environment, accelerate cloud-native development, improve security and compliance, and modernize your storage solution. With this first step, you will begin to free up budget so you can focus on innovation, carrying you forward on your pathway toward hybrid cloud success.

**Learn more about IT optimization with Red Hat at [red.ht/Optimize!T](https://red.ht/Optimize!T).**