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Standardize to improve IT efficiency

Seven considerations for building a standardized operating environment

See what's inside

IT efficiency requires standardization

IT teams must deliver more services at a faster pace than ever before to meet expectations and support digital business.

Even so, most organizations use IT infrastructure that encompasses many operating system vendors and versions, server hardware configurations, and management tools. These complex environments require large, highly skilled IT teams to handle the associated interoperability issues, complicated administration, and convoluted processes. The result is often delayed provisioning, increased downtime, and greater security and compliance risks.

Standardizing your IT environment can help you increase flexibility and efficiency. A **standardized operating environment (SOE)** greatly simplifies your IT infrastructure to overcome many of the challenges of varied, disparate environments. Streamlined management and operations lead to lower operating expenses (OpEx), increased uptime, faster provisioning and deployment, and improved IT and user productivity. And complete visibility into your SOE increases asset control, security, and compliance.

Key benefits of standardized operating environments

An SOE can deliver many benefits for your IT teams, users, and overall business:

- **Automate** error-prone manual tasks.
- **Centralize** and streamline system life-cycle management.
- **Manage** software license use and subscription agreement compliance.
- **Speed** software installation, upgrades, and patching.
- **Improve** security and decrease shadow IT.

This e-book reviews seven key considerations for implementing an effective SOE.

Gain more value by standardizing on Linux

Linux® is one of the world's most dominant operating systems, with widespread adoption across industries and emerging technologies.[1] Building an SOE based on Linux can help your organization experience:

Up to
4.5x
greater IT efficiency and speed.[2]

Up to
20%
lower Linux environment operating costs.[3]

Up to
25%
lower Linux environment support costs.[2]

1 *The Linux Foundation. "**Linux is the most successful open source project in history**." Retrieved August 17, 2020.*

2 *Red Hat case study. "**Sunrise Communications standardizes on cost-effective Red Hat software**," April 2018.*

3 *Red Hat case study. "**CTOS improves agility for faster business expansion with Red Hat**," November 2017.*

Consideration 1

Simplify your IT infrastructure

Simplicity is at the core of all standard operating environments.

Complex IT infrastructure can be difficult to manage and maintain, resulting in increased downtime, reduced efficiency, and higher costs. Standardizing your operating environment helps you reduce complexity and its associated risks. Your SOE should use a defined set of components, interfaces, and processes across your entire infrastructure, including physical, virtualized, and cloud-based resources. This creates a consistent, known foundation for all systems and streamlines both your infrastructure and your operations.

Fewer variations makes it easier to provision systems, scale resources, troubleshoot errors, and remediate issues across your environment. An SOE also allows you to create a single, standard set of operating procedures and processes, speeding operations and allowing your current staff to manage larger infrastructure.

Business demands on IT are growing

Simplifying your infrastructure can help you address many business issues. Key business expectations include:

Delivering consistent and stable IT performance to the business[4]

Improving business processes[4]

Increasing operational efficiencies[4]

Improving cyber security[4]

Saving costs[4]

4 Harvey Nash and KPMG, "CIO Survey 2019: A Changing Perspective," 2019.

Consideration 2

Document your IT assets continuously

Documentation records how your IT infrastructure works.

A good understanding of your infrastructure and operations is needed to support business requirements for stability, reliability, and uptime. A lack of knowledge about components, resources, and processes can result in more outages, delayed repairs, and lower efficiency.

Good documentation can help you avoid these hazards. Documentation creation and maintenance is an integral part of infrastructure management and operation. You should thoroughly document everything in your infrastructure – from components and configurations to governance policies, operational processes, and automated tasks. Once you have a detailed set of documentation, record every change to your environment and version-control each document.

Each role within your IT organization has specific documentation requirements. As a result, you will likely need to document parts of your infrastructure in multiple, different ways to allow all staff to work effectively.

Developers require information about the purpose of application code, usually listed as comments in the source code itself.

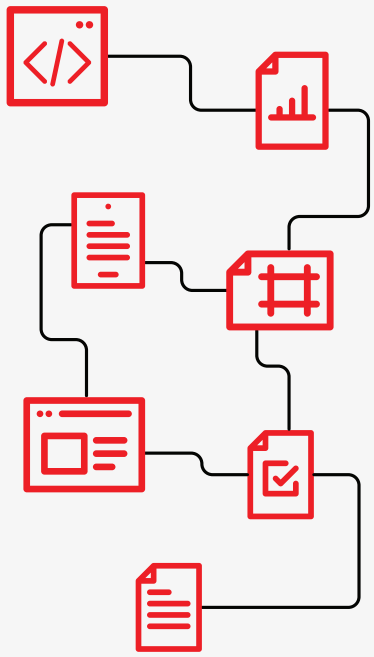
IT operators need administration guides that specify installation, configuration, management, and troubleshooting processes.

End users require manuals that describe how to use applications and resources to accomplish a task.

To avoid infrastructure issues and keep your IT staff and end users informed, document your IT infrastructure in detail at all levels.

Documentation needs differ

A single resource typically requires multiple versions of documentation for different audiences. For example, developers understand source code, while operators consult administration guides, and end users refer to manuals.



Consideration 3

Maintain the right level of flexibility

IT flexibility is essential to keep up with changing demands.

While standardizing your IT infrastructure provides many benefits, it is possible to standardize too much. To be most effective, you need to balance your level of standardization with your organization's needs for flexibility and agility.

SOEs are based on core builds—designated sets of components, interfaces, and processes that form known foundations for applications, virtual machines, and tools. Large enterprises that run hundreds or thousands of servers may need several core builds to ensure that their employees have the right tools to do their jobs effectively. Smaller companies typically need only a few core builds. Careful analysis can help you develop a reasonable number of core configurations for your organization.

Balance standardization with flexibility and agility

Maintain flexibility in your standard operating environment by assessing the needs of your organization. Some organizations need only a few core builds, while others require dozens.

Consideration 4

Automate your infrastructure

Automation can free your IT staff to focus on high-value projects.

Manual operations lack the speed, efficiency, and accuracy needed to succeed in a fast-paced digital world. In fact, 86% of organizations cite too many manual processes as a challenge in managing IT spend.[5]

Automation can accelerate tedious and time-consuming tasks, allowing your IT staff to refocus their time and effort on projects that deliver more business value. Using automation, you can rapidly provision new resources and services, enforce consistency across IT environments, and complete day-to-day infrastructure maintenance tasks with fewer IT staff members. These improvements provide many business benefits for your organization:

Faster delivery of new applications and services

Fewer security and compliance risks

Lower operational costs

More time and budget for IT staff to focus on innovation and strategic initiatives

Automation is not an all-or-nothing proposition. You need a sustainable strategy to guide your automation adoption journey. Document and review all automation assets regularly to be sure that they are understood and working as planned. A human-readable, self-documenting automation framework can greatly simplify these efforts while allowing all staff members to contribute.

Read **The automated enterprise e-book** to learn more about adopting automation across your entire organization.

Take advantage of automation

Automating common infrastructure tasks accelerates deployment of new applications and services, lowers the risk of errors, and reduces OpEx. Organizations that automate their IT experience:

68%
more productive IT infrastructure management teams.[6]

68%
faster deployment of new storage resources.[6]

53%
less unplanned downtime.[6]

41%
more efficient application environment management teams.[6]

25%
more efficient IT security teams.[6]

5 *Flexera, "**2020 Flexera Digital Transformation Planning Report**," February 2020.*

6 *IDC White Paper, sponsored by Red Hat. "**Red Hat Ansible Automation Improves IT Agility and Time to Market**," June 2019. Document #US45090419.*

Consideration 5

Build in dynamic scalability

Change is inevitable, especially in IT.

Over time, the demand or load placed on a given service will fluctuate. Static infrastructure cannot keep up with these changes. Traditional methods of over-provisioning capacity to meet peak demands consumes too much budget while leaving systems idle for long periods of time.

Adopting an SOE can help you build dynamic scalability into your infrastructure. With a common, shared foundation across your environment, each system can deliver a variety of services instead of being dedicated to a single application. You can allocate the same resource to multiple services at different times to adapt to changing demand without over-provisioning. As a result, you can maintain a smaller, more efficient infrastructure, reducing capital expenses (CapEx) and power, cooling, and floor space costs.

This approach also prepares you to take advantage of cloud technologies. You can operate a small on-site IT infrastructure to meet average daily needs and deploy cloud resources to meet additional demand during peak times.

Keep up with changing demands

Demands on IT are constantly changing. Your infrastructure needs to scale dynamically and elastically to keep up. Using a common foundation for your systems lets you scale up and down faster while maintaining a more efficient infrastructure.

Consideration 6

Implement a layered security approach

Security is a top concern for organizations.[7]

Effective security strategies go well beyond simple authorization checks using a centralized identity management system. A layered security approach can reduce your risk of breaches and help you find and stop intrusions faster.

SOEs are ideal for layering security throughout your infrastructure. Consistency across systems allows you to integrate security measures over multiple layers of your infrastructure stack. Increased control lets you keep systems up to date and in compliance with security policies more easily.

Even so, each layer of security places an additional burden on authorized users. Deploying too many security measures can prevent employees from effectively accessing the applications and data they need, while deploying too few measures increases the risks of intrusions and breaches. Risk management is a key part of effective security strategies. Assess the value of each application and piece of data, identify who needs to use the application or data, and evaluate the potential effects of unauthorized access or use. Using this information, you can define your security policies to appropriately balance risk with accessibility to protect your business without unnecessarily impeding employee productivity.

Ineffective security can be costly

Security threats continue to grow and breaches are expensive.

$3.86 million
average cost (USD) of a data breach in 2020.[8]

280 days
average time to identify and contain a data breach in 2020.[8]

76%
share of organizations that believe that remote work due to COVID-19 will increase the time to identify and contain a breach.[8]

$1.12 million
savings in costs (USD) if a breach can be identified and containers in

200 days
or less.[8]

7 *Flexera, "2020 Flexera Digital Transformation Planning Report," February 2020.*

8 *IBM Security. "Cost of a Data Breach Report 2020," 2020.*

Consideration 7

Ensure consistency across hybrid clouds

Cloud adoption is inevitable.

Organizations deploy cloud infrastructure to reduce costs, improve flexibility, and access the latest technologies. In fact, 87% of organizations have a hybrid cloud strategy in place today.[9]

Cloud infrastructure is designed to scale dynamically and elastically. Servers are treated as single-workload devices that are deployed quickly, configured automatically, and easily replaced. This approach deconstructs systems into layers and components that can be combined easily, released independently, and maintained as collections.

Hybrid cloud architectures combine on-site infrastructure and private or public cloud infrastructure into a single environment. Consistency is critical for effective hybrid cloud operation. SOEs offer an ideal deployment strategy for hybrid clouds. Because SOEs provide consistency across physical, **virtual**, **container**, and cloud environments, they work the same wherever they are deployed, allowing you to place and move applications and workloads as needs change.

Centralize SOE management for more efficiency

Organizing your SOE core builds under a centralized management platform lets you deliver fully provisioned systems in minutes, regardless of the underlying infrastructure.

of organizations have a hybrid cloud strategy[9]

of organizations currently use cloud technologies[10]

of all corporate workloads run in a public cloud[9]

of corporate data is stored in a public cloud[9]

9 *Flexera. "2020 Flexera State of the Cloud Report," April 2020.*

10 *Harvey Nash and KPMG, "CIO Survey 2019: A Changing Perspective," 2019.*

Are you ready to standardize?

About **DLT Solutions**

As the premier Government Solutions Aggregator, DLT accelerates public sector growth for technology companies by providing a broad network of partners, contract vehicles, and channel and enablement services – combining the scale of Tech Data with our proven specialization in the public sector. Learn more at dlt.com/redhat.

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