SUSE Manager 4 Brings the Power of DevOps to Your Enterprise Linux Environment

SUSE.

SUSE Manager 4 Brings the Power of DevOps to Your Enterprise Linux Environment

DevOps is an IT management philosophy that requires speed, efficiency, and confidence. A DevOps environment is constantly evolving: containers spin up, new applications appear, tools are tested, and updates happen—all without stoppages or significant downtime.

The professionals who work in the supercharged DevOps space need tools that are powerful, secure, and precise. Decisive actions transform the network, implementing services and adapting configurations to respond to changes. The DevOps environment requires tools that lock down security and promote automation. DevOps engineers keep their focus on:

- *System images: You will need a way to create and manage images for fast and efficient rollout of bare metal, virtual, or container-based Linux systems.*
- *Automated configuration: The DevOps world runs on automation. Why waste valuable time retyping the same few commands to repeat a common task? Automation also helps to prevent errors that could lead to insecurity and downtime.*
- *Patches and updates: Informal and imprecise package policies lead to misconfiguration and insecurity, requiring intervention that could lead to lost productivity.*
- *Security audits: Keep ahead of problems by scanning managed systems and images to discover vulnerabilities and unauthorized software.*

SUSE Manager 4 is a single tool that can manage the complete lifecycle of your Linux systems in a DevOps environment. Use SUSE Manager 4 to manage images, oversee configuration, initiate

audits, lock down software updates, and much more. Read on for more information about SUSE Manager and the DevOps edge.

What Is SUSE Manager 4?

SUSE Manager 4 is a best-in-class open source infrastructure management solution that lowers costs, enhances availability, and reduces complexity for lifecycle management of Linux systems in large, complex, and dynamic IT landscapes. You can use SUSE Manager 4 (Figure 1) to configure, deploy, and administer thousands of Linux systems running on hypervisors, as containers, on bare metal systems, on IoT devices, and on third-party cloud platforms. SUSE Manager 4 also enables you to manage virtual machines, containers, and many of the tools and services that empower your DevOps pipeline.
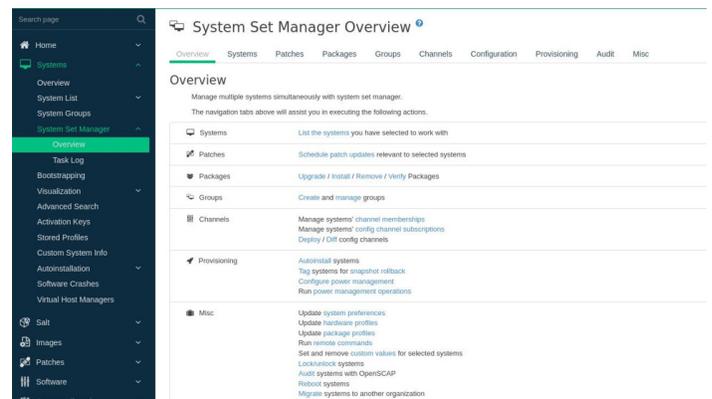

Figure 1. *The SUSE Manager 4 user interface enables you to control a comprehensive collection of essential management tasks from a single user interface.*
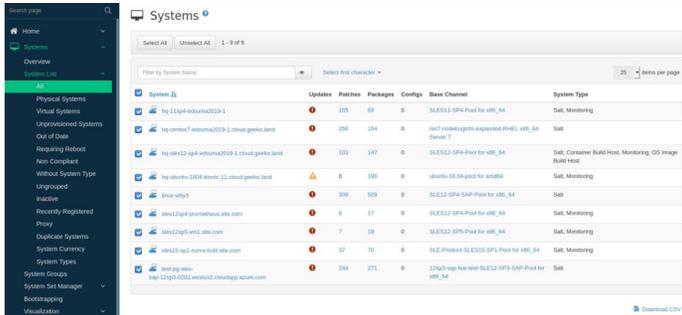
Creating and Managing Images

The DevOps edge depends on flexible automation and granular control of system images. SUSE Manager 4 manages the version-controlled deployment templates at the core of your continuous-integration environment. The KIWI image builder included with SUSE Manager 4 (Figure 2) helps you create system images for easy and seamless deployment. You can create templates for standard image types and customize the templates to adapt to specific needs. SUSE Manager 4 supports easy testing, patching, storing, and rebuilding of system images. You can even run a Common Vulnerabilities and Exposures (CVE) security audit on a system image to ensure that the image meets known security requirements before you install it.

Figure 2. *Building a new image within SUSE Manager 4.*

Salt Configuration

Efficient rollout, deployment, and configuration are at the core of the DevOps vision. The open source Salt configuration framework included with SUSE Manager 4 (Figure 3) enables you to predefine a complete configuration for a system or critical application, allowing for effortless, automated configuration across the network. Salt provides a rich context for remote installation and reconfiguration. As your environment evolves through cycles of development, testing, and deployment, Salt enables you to adapt your systems swiftly and securely through automated, remote configuration.

SUSE Manager 4 eases the management of virtual machines by way of Salt. This new paid-for, add-on feature enables near real-time management of hundreds of servers, all through Salt State

Figure 3. *Choosing a Salt formula from the SUSE Manager 4 Formula Catalog.*

definitions and an efficient UI. For example, you can create a Salt State that always ensures that the same three virtual machines are created and running on all of your retail branch servers.

Salt Formulas are pre-written Salt States that contain generic parameter fields and can be installed from either RPM packages or an external Git repository. With these formulas, SUSE Manager can reproduce a specific configuration over and over, making it even easier to set up SAP HANA nodes and HA cluster configurations and to implement SAP's best practices for installing SAP HANA on SUSE Linux Enterprise Server.

The use of Formulas with Forms has been simplified with an improved content-staging UI and APIs. This revamped content staging makes it even easier to build patch-staging environments for Linux updates without having to create your own custom scripting.

All Your Linux Systems

SUSE Manager 4 looks after all your Linux systems, including SUSE, Red Hat, and Ubuntu systems running on bare metal, in a container, or in a virtual machine (Figure 4). Managing all of your Linux systems from a single tool simplifies the admin experience, leading to fewer errors and a reduced learning curve for new staff. SUSE Manager 4 also offers close integration with OpenStack and Kubernetes for managing Linux in cloud and container environments.

Figure 4. *Managing various Linux systems from within SUSE Manager 4.*

DevOps extends the power of a single admin through centralized administration and fluid, flexible management tools that lock down control. SUSE Manager 4 gives you the tight control over patches and software installation that you will need for rapid integration, without the risk. You can define a software channel for pushing patches, packages, and updates to managed systems.

Use a software channel to update a single system or a group of systems. For instance, you could push out an update to all web servers (Figure 5).
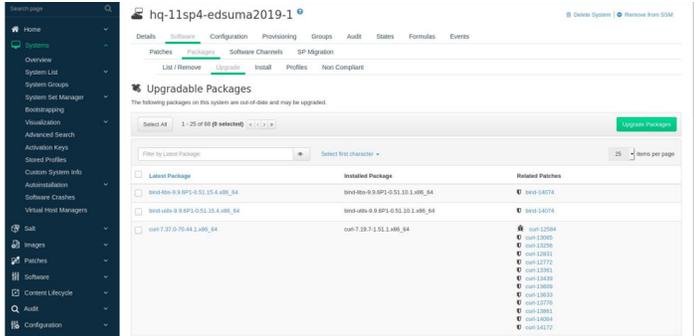
Figure 5. *Pushing software upgrades to servers is simple with SUSE Manager 4.*

Software channels save time and reduce duplicated effort. They also provide an efficient means for imposing uniformity and security. By restricting the system to receive only updates through the channel, you can keep unauthorized packages off the network and maintain a disciplined system for testing and auditing prior to installation.

Software and Security Audits

A major source of errors and downtime is employees configuring Linux systems in a careless or inconsistent manner. The audit features in SUSE Manager 4 enable you to enforce company rules, as well as external standards and licensing policies. Use SUSE Manager 4 to inventory your Linux systems. When the inventory

is complete, it will report on any deviation from the authorized configuration, desired patch levels, and security requirements. You can also use SUSE Manager 4 to check security policies imposed through the Open Security Content Automation Protocol (OpenSCAP) or to search out vulnerabilities defined in the CVE list (Figure 6).
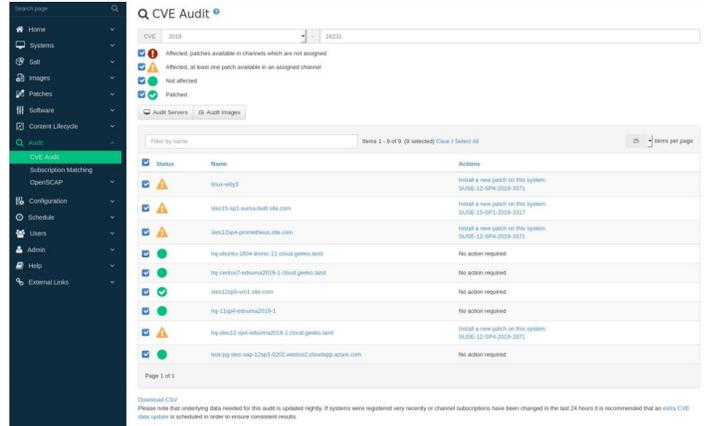

Figure 6. *Running a CVE audit for kernel CVE 16231.*

With the SUSE Manager 4 audit tools, a single admin can do the work that would take hours of labor in a conventional environment, or might even require a full-time security employee.

Automation

The secret to DevOps is automation. The auditing tools and Salt configuration framework are examples of the automation power you get with SUSE Manager 4.

SUSE Manager 4 also supports roll-your-own automation through its API and full-featured scripting interface. The spacecmd command-line tool enables you to build almost any SUSE Manager 4 function into a script.

SUSE Manager 4 also includes an XML-RPC-based API for building SUSE Manager 4 functions into any programming language that offers XML-RPC client support. You can use it to access SUSE Manager 4 features from programs written in Perl, Python, or Ruby.

Conclusion

If you administer Linux systems in a DevOps environment and are looking for a single tool that brings the DevOps edge to image management, deployment, configuration, auditing, and automation, take a closer look at SUSE Manager 4.

www.suse.com