Tired of getting tangled in the details? SUSE Manager for Retail keeps your retail infrastructure safe, up to date and compliant with maximum security and minimum TCO.
Universal Solution for Retail

SUSE Manager for Retail is an open source infrastructure management solution that is optimized and tailored for the retail industry. You can use SUSE Manager for Retail to deploy and manage point-of-service terminals, kiosks, self-service systems and reverse-vending systems, as well as other Linux-based assets within your infrastructure.

SUSE Manager for Retail provides a single user interface for handling tasks such as:

- Creating Linux client images that are optimized for retail applications, including support for secure payment protocols.
- Deploying system images in a wide range of retail scenarios, from remote provisioning to broadband connections.
- Keeping legacy retail hardware in operation even when the system resources are too limited to support other operating systems.
- Automatically updating or patching all retail terminals from one central location.
- Detecting non-compliant systems or unauthorized changes to systems within the retail environment.

SUSE Manager for Retail can reduce costs, streamline operations, increase flexibility, enhance reliability and improve uptime for the complete lifecycle of your retail infrastructure.

The latest SUSE Manager/SUSE Manager for Retail 4 release further extends the power of SUSE Manager, providing better support for offline branch operations and new capabilities for environments with limited network connectivity (see the box entitled “Low Bandwidth?”). The new release also offers system monitoring and alerts, as well as support for deploying SAP HANA. SUSE® has a long history and close working relationship with SAP make SUSE Manager the best infrastructure management solution for retail environments and organizations that rely on SAP.

System Architecture

At the core of the SUSE Manager for Retail environment is Linux—a secure and stable open source operating system used by thousands of large organizations for mission-critical tasks. Linux is designed to keep kernel and user processes strongly separated, which leads to stability and a natural resistance to intrusion and malware.

Linux is also easy to mold and modify for specialized use. SUSE Linux Enterprise Point of Service is a Linux-based, point-of-service system designed to serve as a retail client within the SUSE Manager for Retail environment. SUSE Linux Enterprise Point of Service is engineered to achieve tight security with a minimal footprint and maximum security and performance. SUSE Linux Enterprise Point of Service uses the versatile SUSE Linux Enterprise operating system as a base platform. The default version of SLEPOS integrates several retail-specific services and standards with world-class, open source security tools for VPN, secure shell, firewall and more.

SUSE Linux Enterprise Point of Service supports compliance with the Payment Card Industry Data Security Standard (PCI)

Low Bandwidth?

Many retail environments must contend with slow connections over legacy equipment and cabling. The latest edition of SUSE Manager for Retail is optimized to deliver efficient performance for limited-bandwidth settings.
DSS). Because SUSE Linux Enterprise Point of Service is Linux, you can add additional applications as needed, build custom applications or create a custom system image to automate installation for a large number of devices. You can install SUSE Linux Enterprise Point of Service on a dedicated POS device or on any standard PC. Minimal SLEPOS images require as little as 512 MB of RAM. SUSE Manager for Retail 4 includes new support for building and deploying 32-bit SLEPOS 11 SP3 clients, which helps you extend the lifecycle for legacy POS equipment.

See the architecture of a typical SUSE Manager for Retail landscape shown in Figure 1. The retail devices are organized into branches. Each branch represents a local office or retail outlet at a single location.

The environment consists of:
- SUSE Linux Enterprise Point of Service retail client systems
- A SUSE Manager for Retail branch server operating at each branch location
- A SUSE Manager server to deploy and oversee the complete environment

Also shown in Figure 1 are the SUSE Customer Center, an online service that helps you manage subscriptions and offers an interface with SUSE support resources, and the subscription management tool, a proxy system for the SUSE Customer Center with repository and registration targets.

The complete infrastructure shown in the figure could be as small as a single local shop or could consist of thousands of POS systems in multiple remote locations.

The SUSE Manager server enables an administrator operating from the main office to view the status of any POS system on the network. The administrator can provision new systems, control software updates and monitor all systems for compliance with security standards. All the systems shown in the figure are open source, which means you will never suffer from the vendor lock-in associated with proprietary software systems.

Figure 1. The architecture of a typical SUSE Manager for Retail network.
SUSE Manager Server
The SUSE Manager Server, which usually runs in the main office behind a firewall, is at the center of the SUSE retail management infrastructure. The SUSE Manager Server controls the creation of client images, software distribution to the terminals, update procedures and compliance checks.

The SUSE Manager Server is a component of the main SUSE Manager product used for managing Linux systems in enterprise environments. For the retail edition, SUSE® includes additional functionality needed for managing retail branch servers and clients.

The upstream project for SUSE Manager, called Uyuni, is publicly developed on GitHub, with frequent releases and solid, automated testing. Although Uyuni is not commercially supported by SUSE and does not receive the same rigid QA and product lifecycle guarantees, it is a full version of the software. Unlike other vendors whose commercial products heavily rely on extra features not available in the basic, open source version, SUSE keeps the full feature set available in the community edition.

Branch Server
The branch server of a SUSE Manager for Retail installation runs inside a store, controlling all the retail terminals within a local environment. The SUSE Manager for Retail branch server is a technical equivalent of the standard SUSE Manager Proxy Server, with enhanced functionality for the retail environment. The branch server acts as a multipurpose server system for the local infrastructure. You can use the branch server to manage PXE remote boot for POS clients, as well as to provide DHCP, DNS, FTP and other services for the branch. The branch server can also act as an image cache, Salt broker and proxy server for remote package updates.

Maintaining a server at the local level lowers the overall bandwidth needs of the retail IT landscape (which might very well be scattered across hundreds or thousands of kilometers), lightens the processing load on the SUSE Manager server and generally speeds up operations.

The branch server:
- Manages the synchronized distribution of terminal system images and software updates to all the retail terminals in the same store environment.

Powerful Image Building for Retail Terminals
Daily operations in modern retail stores might appear to be a pretty small set of standard procedures. However, IT managers of those stores know all too well that reality is often different. Corporate acquisitions or changing hardware suppliers might result in an assortment of different terminals that require different hardware drivers or boot procedures. Suburban stores with poor internet connectivity might need different software update procedures from those in large urban centers. International companies might need different software localizations and different payment systems for different locations.

System administrators of retail chains often have to install many different software images. SUSE Manager for Retail makes it easy to customize and adapt system images.

The SUSE Manager Server sets up an instance of the open source KIWI image builder (Figure 2). You can use KIWI to create software images for POS clients and other Linux systems. KIWI enables you to create as many image templates as you need in order to handle standard configurations and then customize the images as necessary to accommodate local conditions or specific design requirements. SUSE Manager for Retail augments KIWI with an easy-to-use interface for centralized management and administration of POS images. SUSE Manager for Retail also ships with a collection of pre-configured image templates.
**User Interfaces**

The web-based user interface of SUSE Manager for Retail enables users to move easily among all tasks while keeping a clear view of network resources (Figure 3). A sidebar menu provides constant access to all the high-level functions and components of your retail landscape, and it is possible to view clusters of stores grouped and connected as they actually are.

**SUSE Manager for Retail User Interface**

You can also access a context-sensitive legend for the symbols used by SUSE Manager, breadcrumb navigation, buttons to quickly get back to the top of each window and a dedicated search box for the menu sidebar.

Once you have completed the initial configuration, the System Set Manager (SSM) provides an efficient way to administer many systems simultaneously. After you have selected the systems on which you want to work, the main SSM window gives you quick access (through one set of tabs) to all the controls you need in order to apply configuration states, schedule patch updates, group or migrate systems and much more.

For those who prefer to work without the web interface, the server command-line tool “spacecmd” offers access to all of the functions of SUSE Manager through a terminal window and supports scripting.

**Flexible, Scalable and Efficient**

The flexible and efficient SUSE Manager for Retail solution adapts easily to your needs. Whether you manage a small shop with five POS terminals or a large chain with a thousand branches, SUSE Manager for Retail can help you configure, administer and expand your infrastructure as your business grows and changes.

You can manage different departments or companies within the same infrastructure—each with different IT requirements. The main administrator can delegate different tasks to different users; you can subdivide the retail landscape and provide separate administrators for each subgroup. Or, you can give different admins responsibility for different tasks, such as key activation, images, configuration and software channels (Figure 4).

SUSE Manager for Retail enables you to automate rollout for new branch servers or retail clients using the Salt configuration management system (see the box titled “About Salt”). With the SUSE Manager for Retail web interface, administrators without advanced scripting skills can specify complex system configurations using Salt Formulas and Action Chains.

SUSE Manager for Retail also enables you to manage software updates across the infrastructure in a secure and systematic way. You can configure a software channel for each device type or use case and automate updates through the channel, ensuring that no device receives software from an unauthorized source.

SUSE Manager for Retail isn’t limited to managing devices for retail operations. You can use it to manage your entire Linux infrastructure, from point-of-sale terminals, to servers, to Linux workstations.

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**Figure 3. SUSE Manager for Retail user interface.**

**Figure 4. SUSE Manager Server for Retail Setup**
The Power of SAP
SUSE Manager for Retail offers predefined Salt formulas for deploying and configuring SAP HANA nodes.

With the deployment of your SAP infrastructure supported through the SUSE Manager for Retail environment, you can:

- Track inventory in real time
- Optimize the store layout
- Study buying patterns of customers
- Carry out simulations to test promotions or retail scenarios

SUSE has a 20-year history of working with SAP, and SAP HANA was developed using SUSE Enterprise Linux. SUSE Manager for Retail is the ideal platform for deploying SAP in a retail setting.

Content Lifecycle Management
The DevOps revolution is bringing new efficiency and security to the retail environment. The Content Lifecycle Management tool included with SUSE Manager for Retail helps you encourage and support DevOps-based development techniques. Content Lifecycle Management enables you to promote software channels through a lifecycle of different environments (see Figures 5.a through 5.c). For instance, suppose your production pipeline consists of Development, QA and Production phases (as shown in the figures). Each of these phases is served by software channels tuned and carefully selected for the environment. When a package is promoted (say from Development to QA), what that really means is that the software channels that used to feed the Development environment are now assigned to the QA environment. Content Lifecycle Management enables you to clone the software channels that point toward Development to direct them to QA (Figure 5.b.). When it is time to promote the package to Production, you can clone the channels directed at QA to the production environment.

Content Lifecycle Management is a powerful tool for managing the package development process, offering tight control and convenience and reducing the need for custom scripts and repetitive procedures.

Monitoring
A downed retail system can result in long lines and lost opportunities for sales. SUSE Manager for Retail comes with continuous monitoring for managed systems, using the open source Prometheus monitoring stack. You receive alerts when a system goes offline or when resource usage exceeds predetermined limits. The system monitoring feature is built directly into the user interface for convenient access and easy integration with other SUSE Manager for Retail features.
Compliance
SUSE Manager for Retail includes tools for managing compliance with internal company policies, as well as external regulations. Use SUSE Manager for Retail to create an inventory of all the systems you want to manage. Once that inventory is available, SUSE Manager for Retail continuously monitors all its clients and reports on any deviation from current patch level or any other compliance requirement (Figure 6).

SUSE Manager for Retail also supports automatic, system-wide configuration of vulnerability scans, using either Common Vulnerabilities and Exposures (CVE) lists or the OpenSCAP framework. You can search for CVE numbers in all patches released by SUSE or generate custom reports of all the machines affected by a specific CVE. You can view the status of all of your Linux-based POS systems and other assets at any time and quickly identify the ones that need attention. This feature makes it possible to quickly detect “shadow IT” systems installed or reconfigured without central authorization.

Figure 5b. When the software is promoted to a higher phase, the Content Lifecycle Management feature enables you to clone the software channels to follow the package, rather than manually rebuilding the channel system at the new level.

Figure 5c. After the promotion, the Development environment starts again with new software sources, and subsequent cloning steps mean that the package progresses through higher phases with minimal need for channel reconfiguration.

Figure 6. SUSE Manager for Retail system currency report
**Conclusion**

SUSE Manager for Retail 4 is a fully open source solution, optimized and tailored for controlling the whole lifecycle of retail clients from one interface. Administrators can automatically provision, configure, update and monitor every Linux client from centrally managed software sources. SUSE Manager for Retail also enables you to create pre-configured client configurations and customize them as necessary for flexible and efficient rollout of new systems. Comprehensive support and strong affinity for the SAP environment make it easy to deploy SAP’s powerful S/4HANA for Retail toolkit for analytics and transaction processing.

SUSE Manager for Retail will help to improve the uptime, compliance and quality of service levels for your retail infrastructure, while preventing lock-in and reducing total cost of ownership.

And, SUSE Manager for Retail isn’t limited to point-of-service retail environments: you can manage your other Linux assets within the same convenient user interface.

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**System Requirements**

**Supported Processor Platforms:** Multi-core 64-bit CPU (x86-64; IBM z Systems and LinuxONE; IBM POWER8 or POWER9 processor-based server in Little Endian mode)

**RAM:** Minimum 4GB for test, 16GB for base installation, 32GB for a production server

**Disk Space:** Minimum 100GB for root partition; Minimum 50GB for /var/lib/pgsql; Minimum 50GB per SUSE product and 200GB per Red Hat product for /var/spacewalk

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**To Learn More About SUSE Manager for Retail**

For detailed product specifications and system requirements, please visit [suse.com/products/suse-manager-retail/](suse.com/products/suse-manager-retail/).

For Uyuni details and development, visit [uyuni-project.org](uyuni-project.org).

For additional contact information and office locations, visit suse.com.