Some content has been intentionally redacted (proprietary information and screenshots).

This documentation, crafted using docs-as-code, leverages a Static Site Generator (SSG) to seamlessly convert Markdown content into HTML. The SSG handles formatting, while shortcodes are employed for callouts and code blocks. Note that links between internal applications and documentation have been intentionally removed.

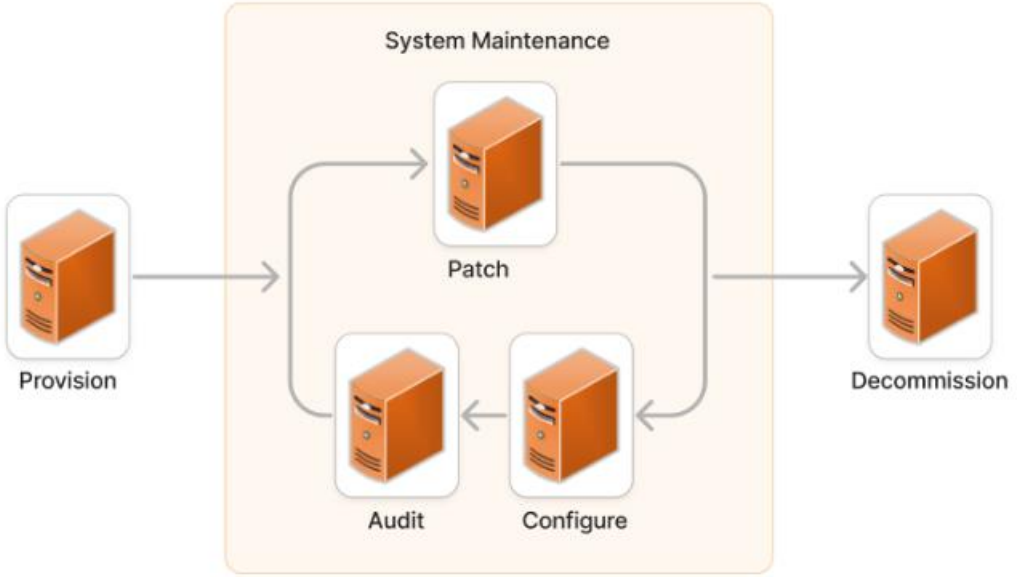
The target audience for this document is engineering teams seeking guidance on utilizing Spacewalk within a specific organization.

Overview

Spacewalk, also known as Oracle Linux Manager, is an open-source systems management solution that provides complete life cycle management for Linux systems. It helps automate provisioning, patching, configuration management, and monitoring across a large fleet of Linux servers.

Chef is used to automate the installation and configuration of packages on Linux servers. Spacewalk manages which Linux packages can be installed and configured by the Chef client. Spacewalk is not designed to support application packages and it is not a repository tool.

The following diagram shows the life cycle of a typical system.



Key Capabilities

System Patch Management
Spacewalk allows administrators to centrally manage and apply software patches, updates, and security fixes to multiple Linux systems. You can create and schedule maintenance windows, monitor patch compliance, and ensure that all systems are up to date with the latest security patches.

Software Package Management
Spacewalk simplifies the management of software packages on Linux servers. You can create and manage custom software channels, repositories, and package groups. This is especially valuable in large-scale environments where consistent software configurations are essential.

Inventory and System Tracking
Spacewalk provides system inventory and tracking capabilities. It allows you to maintain a detailed record of all registered systems, including hardware and software inventory information. This helps in monitoring system configurations and ensuring compliance with organizational standards.

Provisioning and Configuration Management
Spacewalk assists in provisioning new systems by automating the installation process and configuration of Linux servers. You can use it to define system profiles, templates, and kickstart configurations, which makes it easier to deploy and manage new servers consistently.

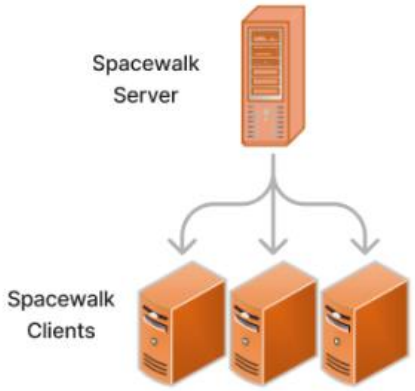
The Spacewalk architecture consists of a central server and agents installed on managed systems.

The Spacewalk server is the central hub that coordinates all management functions. It has a database to store inventory and configuration data. The server also hosts package repositories and makes them available to connected systems.

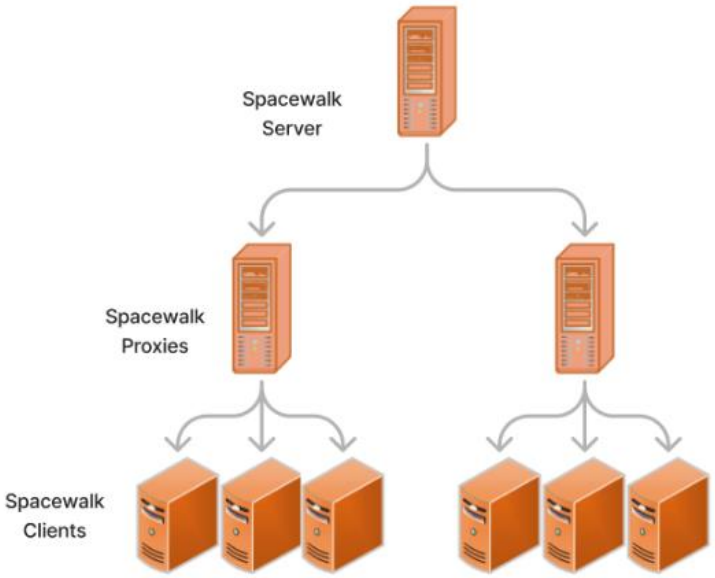
The Spacewalk client (spacewalk-client-setup package) gets installed on your Linux servers. This registers the system to the Spacewalk server. It handles communication for all inventory, configuration, and package actions.

The web UI provides the admin console to manage all systems and access to Spacewalk functionality. As the Spacewalk architecture is flexible and scalable, many deployment configurations are feasible. Here are some possible deployment configurations for Spacewalk.

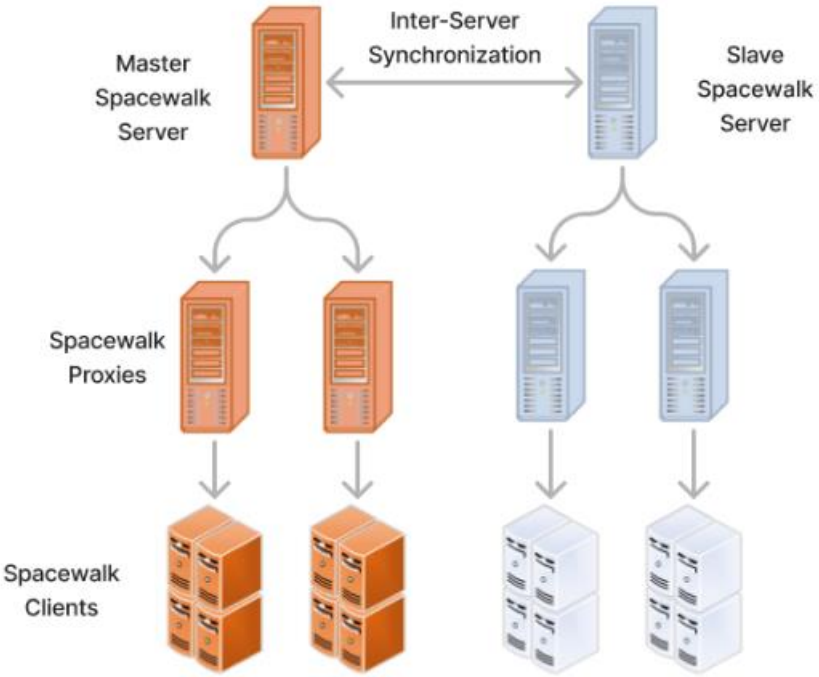
• A **simple deployment** with a single Spacewalk server that has several clients.



• A more **complex deployment** with one Spacewalk server and two Spacewalk proxies, where each proxy has several clients.



• A **deployment with two Spacewalk servers**, each at different sites. The Spacewalk server at one site acts as the master server. The Spacewalk server at the other site acts as a slave server. An Inter-Server Synchronization (ISS) is used to manage channel content, channel permissions, and organizational trust settings between the two servers.



Before You Start

Typical next steps after installing Spacewalk include:

- Register your existing Linux systems by installing the Spacewalk agent and using an activation key.
- Organize your systems into logical groups based on environment, location, and application tier.
- Set up configuration channels that define your desired system state and associate groups.
- Create custom software channels if needed, add your RPM content, and attach groups to subscribe them.
- Use Spacewalk to audit and deploy packages/updates across your systems.
- Configure monitoring checks and set alerts for critical events/metrics.
- Give users access and assign roles to delegate system management tasks.
- Review built-in reporting around inventory, updates, and auditing.

API Basics

Spacewalk is primarily a server and client application for managing Red Hat-based Linux systems. It has various APIs and scripting interfaces (XML-RPC API, Python API, and so on) for automation and integration purposes.

API Security

Transport security uses HTTPS/SSL to encrypt communication. Configure the Spacewalk server with a valid SSL certificate. API requests should only originate from trusted hosts. A firewall allowing only required hosts is recommended.

The transport between applications and {company name} is secured using TLS/SSL, which means data is encrypted by default when transmitted across networks.

Spacewalk itself does not provide end-to-end payload encryption. Instead, it relies on other security measures, like TLS/SSL encryption for communication between the Spacewalk server and its client systems, to ensure the security of data in transit. You should use TLS/SSL to secure the communication channel between Spacewalk and the systems it manages.

How to Consume Spacewalk

The Spacewalk API is a REST API that can be called from any programming language. API client libraries handle authentication and provide objects/methods for each resource.

Python Spacewalk API Client: The Python client library for Spacewalk is known as `rhnlib`. You can use pip to install it or download it manually.

Perl Spacewalk API Client: The Perl client library for Spacewalk is known as `spacewalk-perl`. You can use CPAN to install it or download it manually.

These are the links to download Spacewalk API client libraries manually:

- GitHub Repository
- Spacewalk Website

Use Cases

Registering a System

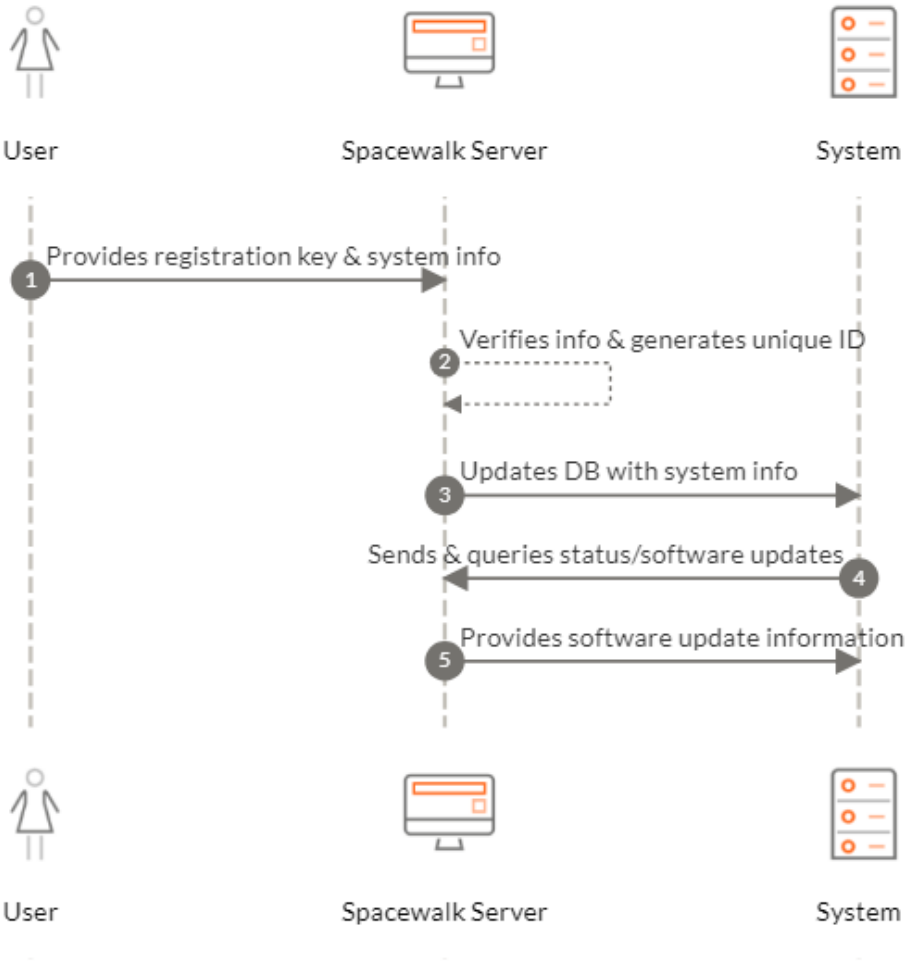
1. **User** - An administrator initiates the system registration process by providing the registration key and system details.

2. **Spacewalk Server** - The server verifies the registration key and system details, then generates a unique system ID for the registered system.

3. **Spacewalk Server** - The server updates the Spacewalk database with the system's information and associations.

4. **System** - The registered system sends regular status updates and queries for software updates to the Spacewalk server.

5. **Spacewalk Server** - The server provides software update information to the registered system as needed.



Applying Updates

1. **System** - A registered system sends a request to check for available updates to the Spacewalk server.

2. **Spacewalk Server** - The server receives the request, then queries its database to determine which updates are applicable to the system.

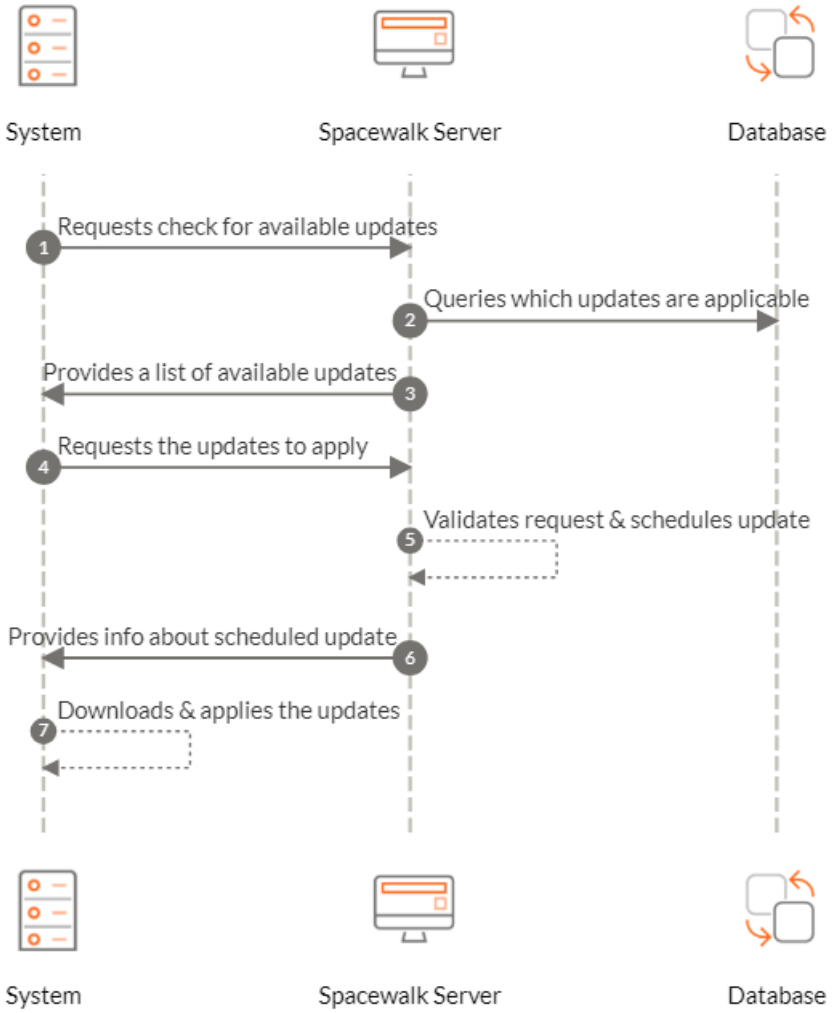
3. **Spacewalk Server** - The server responds to the system with a list of available updates and their details.

4. **System** - The system selects which updates to apply and sends a request to the Spacewalk server to initiate the update process.

5. **Spacewalk Server** - The server receives the update request from the system, then validates the request and schedules the update job.

6. **Spacewalk Server** - The server responds, acknowledging the update request and providing information about the scheduled update job.

7. **System** - The system downloads and applies the updates as per the schedule.



Tutorials and Guides

Spacewalk is an open-source Linux systems management solution that allows you to manage and monitor your Linux infrastructure. Here are step-by-step instructions on how to set up and use Spacewalk. These guides provide a high-level overview. The actual steps may vary depending on your specific environment and requirements.

Setting Up Spacewalk

System Requirements
Ensure you have a server with the necessary hardware resources (CPU, RAM, Disk Space) and a supported operating system (CentOS, Red Hat Enterprise Linux).

Install Spacewalk
You can install Spacewalk from the official Spacewalk repositories or by using a package manager like yum. Refer to the Spacewalk Installation Guide for more information on the install procedure.

Spacewalk Configuration
After installation, run the Spacewalk configuration script to set up your database and configure Spacewalk. Follow the prompts to provide information like the database server, passwords, and organization details.

Web UI Access
Once the setup is complete, you can access the Spacewalk web UI using a web browser.

The default URL is usually `https://your-server-name-or-ip/spacewalk`.

Documentation and Community
Refer to the official Spacewalk documentation for detailed information on specific tasks and configurations.

Using Spacewalk

Adding Systems
Log in to the Spacewalk web UI.

Navigate to the Systems tab.

To add systems, you can either manually register them or use automated methods like Kickstart profiles or Activation Keys.

Software Management
Spacewalk allows you to manage software on your registered systems. You can create and manage software channels, schedule package updates, and create custom repositories. You can push packages or updates to individual systems or groups of systems.

Monitoring and Alerts
Spacewalk provides monitoring capabilities for system performance and hardware health. Configure monitoring alerts to notify you of issues or changes in your infrastructure.

Configuration Management
You can use Spacewalk to manage system configuration files and deploy them to multiple systems. Create configuration channels and deploy configuration files to systems.

Reports and Auditing
Generate reports to track the status of your systems, including package updates, hardware inventory, and compliance reports. Perform audits to ensure your systems are compliant with our organization's policies.

User Management
Manage user access and permissions within Spacewalk. Create user roles and assign permissions to control who can perform specific actions.

Custom Scripts and Actions
Spacewalk allows you to run custom scripts and actions on your managed systems. You can schedule scripts or execute them on-demand.

Backup and Restore
Regularly back up your Spacewalk configuration and database to ensure data integrity. Set up automated backup procedures.

Troubleshooting Guide
Some content has been intentionally redacted (proprietary information and screenshots).

Service specific tutorial
Some content has been intentionally redacted (proprietary information and screenshots).

Code and Formats

Error Codes

Here we have some of the common HTTP status codes that you might encounter when interacting with Spacewalk, along with brief descriptions of what they typically indicate.

Error/Reason Code	Description	How to Resolve
200	OK	This status code indicates a successful request.
201	Created	Used to indicate that a new resource has been successfully created.
204	No Content	Often used to indicate successful deletion or when there is no content to return.
400	Bad Request	Indicates that the request was malformed or contained invalid data.
401	Unauthorized	The request requires authentication, and the provided credentials were either missing or invalid.
403	Forbidden	The authenticated user does not have permission to access the requested resource.
404	Not Found	The requested resource does not exist on the server.
500	Internal Server Error	Indicates that an unexpected error occurred on the server.
200	OK	This status code indicates a successful request.
201	Created	Used to indicate that a new resource has been successfully created.
204	No Content	Often used to indicate successful deletion or when there is no content to return.
400	Bad Request	Indicates that the request was malformed or contained invalid data.

Release History

Release Notes

Version	Date	Notes
Spacewalk 2.10	August 2021	Spacewalk 2.10 is the latest stable release. This release included various bug fixes and improvements.
Spacewalk 2.9	October 2020	Spacewalk 2.9 introduced various features and improvements. One notable feature was support for Debian-based systems (in addition to Red Hat-based systems). This release included updated documentation.
Spacewalk 2.8	October 2019	Spacewalk 2.8 brought support for PostgreSQL 10. This release included improvements to system management and monitoring.

Refer to the Oracle Linux Manager - Notices for more detailed information on releases.

Support

FAQ

What is Spacewalk?
Spacewalk, also known as Oracle Linux Manager, is an open-source tool that helps you manage and monitor your Linux servers. It allows you to keep your systems up to date with patches, manage software packages, and perform system inventories.

How do I install Spacewalk on my server?
Installation steps can vary depending on your Linux distribution. Refer to the Spacewalk Installation Guide in a new tab for more information on the install procedure.

How do I add my servers to Spacewalk for management?
You typically need to install the Spacewalk client software on your servers and then register them with your Spacewalk server.

Is there a web interface for Spacewalk, and how do I access it?
Yes, Spacewalk provides a web-based user interface that you can access using a web browser. The URL to access the interface depends on your server's configuration. The default URL is usually https://your-server-name-or-ip/spacewalk.

Can Spacewalk manage systems running different Linux distributions?
While Spacewalk is primarily designed for Red Hat-based systems, it can also manage Debian-based systems. Support for other distributions may vary.