Spacewalk for Oracle® Linux

Release Notes for Release 2.0

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About this document

This document contains information about the Spacewalk 2.0 release available from Oracle. It describes the differences from the upstream version, includes notes on installing and configuring Spacewalk, and provides a statement of what is supported.

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Preface

Spacewalk for Oracle® Linux: Release Notes for Release 2.0 provides details of the Spacewalk 2.0 release available from Oracle.

Audience

This document is written for system administrators who want to use Spacewalk to manage Oracle Linux systems. It is assumed that readers have a general understanding of the Linux operating system.

Related Documents

The documentation for this product is available at:

Spacewalk for Oracle® Linux Documentation

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Chapter 1 Release Notes

1.1 About Spacewalk 2.0 for Oracle Linux

There are no significant changes in the Oracle version of Spacewalk from the upstream project.

Minor changes include:

- Addition of Oracle Linux 6 GPG keys

- Addition of Oracle Linux repositories to the `spacewalk-common-channels` tool

- Addition of an Unbreakable Linux Network (ULN) plug-in for the `spacewalk-repo-sync` tool

- Branding changes

1.2 Installing and Configuring a Spacewalk Server

1.2.1 Oracle Linux Requirements

Oracle supports Spacewalk servers that are running on Oracle Linux 6 (x86_64).

You should install Oracle Linux 6 using the **Minimal** or **Basic Server** software set. If you select additional package groups during installation, you must remove the `jta` package before installing Spacewalk, as this package causes Spacewalk services to fail to start.

Only install Spacewalk using the packages provided by Oracle from the Oracle Linux yum server repository at https://yum.oracle.com.

No third-party package repositories are required to install Spacewalk on Oracle Linux 6. All the required packages are available in the Oracle Linux Spacewalk repository.

As a minimum, a Spacewalk server should have 8GB RAM. If the Spacewalk server also runs the database for the Spacewalk data, this memory requirement is *in addition to* what is required to run the database.

1.2.2 Database Requirements

A database is required to store the Spacewalk data. The database options are:

- Oracle Database

- Oracle Database Express Edition (Oracle Database XE)

- PostgreSQL

Oracle only supports Oracle Database for use with Spacewalk. Oracle Database XE and PostgreSQL are not supported.

Oracle does not provide any tools for migrating from an unsupported database.

Oracle Database Requirements

You must have an Oracle Database server installed and available before you install Spacewalk.

Only Oracle Database 11gR2, release 11.2.0.3 or later, is supported. Oracle Database 12c is not supported. To obtain the correct Oracle Database 11gR2 release, you must download the software from My Oracle Support (MOS) at https://support.oracle.com.

Documentation for Oracle database is available at https://www.oracle.com/pls/db112/homepage.

The database must be configured as follows:

- The database must use the `AL32UTF8` character set.

- The database must have a user named `spacewalk`.

- The `spacewalk` user must have the `CONNECT` and `RESOURCE` roles.

- The `spacewalk` user must have the `ALTER SESSION`, `CREATE SYNONYM`, `CREATE TABLE`, `CREATE TRIGGER`, `CREATE VIEW` and `UNLIMITED TABLESPACE` system privileges.

To create the `spacewalk` user with a password of "password" using SQL, the following SQL*Plus commands can be used:

```
SQL> create user spacewalk identified by password;
SQL> grant connect,resource to spacewalk;
SQL> grant alter session, create synonym, create table, create trigger, create view to spacewalk;
SQL> grant unlimited tablespace to spacewalk;
```

To connect to an Oracle Database, Oracle Instant Client release 11.2.0.3 or later must be installed on the Spacewalk server. The Spacewalk server configuration fails if the Instant Client is missing. Oracle recommends that you install the latest 11gR2 release of the Instant Client. You can find out more about the Instant Client from:

https://www.oracle.com/database/technologies/instant-client.html

The following are the required packages:

- Instant Client Package - Basic

- Instant Client Package - SQL*Plus

Once you have installed the Oracle Instant Client, you must add the library path to `ldconfig` as follows:

```
# echo /usr/lib/oracle/11.2/client64/lib > /etc/ld.so.conf.d/oracle-instantclient11.2.conf
# ldconfig
```

1.2.3 Storage Requirements

To ensure that errata mapping is maintained for all versions of each package, Spacewalk mirrors all available versions of all available packages. As a result, the storage requirements for a Spacewalk server can be significant, based on the number of major versions and architectures you chose to support. As a guide, the Oracle Linux binary repositories require approximately 50GB for each architecture, with an extra 30-40GB required for source packages.

> **Caution**
>
> Packages are never removed from Oracle Linux repositories, so the space required for each repository only ever increases. You should actively monitor the available disk space on the Spacewalk server.

The software described in this documentation is either no longer supported or is in extended support.
Oracle recommends that you upgrade to a current supported release.
Network Requirements

1.2.4 Network Requirements

You must configure the Spacewalk server with a fully-qualified domain name (FQDN). Spacewalk does not consider `.local` and `.localdomain` to be valid domain names. Clients must be able to resolve the FQDN in DNS (forward and reverse lookups). If these conditions are not met, PXE booting does not work and clients do not register with the Spacewalk server.

The following table shows the required network ports depending on the configuration of the Spacewalk server.

Port and Protocol	Purpose
69/udp	tftp for PXE provisioning support
80/tcp	Spacewalk web access
443/tcp	Spacewalk web access
5222/tcp	Spacewalk client push support
5269/tcp	Spacewalk proxy push support

If the Spacewalk server needs to connect though a proxy, you can configure the proxy in the following places:

- The `/etc/rhn/rhn.conf` file.

- The Spacewalk web interface.

  Go to **Overview**, then **Configure Spacewalk**, and then **General**.

1.2.5 Setting up a Spacewalk Server

1. Ensure that the `jta` package is not installed and prevent it from being installed when you install Spacewalk.

   To check if the `jta` package is installed:

   ```
   # yum list installed | grep jta
   ```

   To remove the `jta` package:

   ```
   # yum remove jta
   ```

   To prevent the `jta` package from being installed when you install Spacewalk, either disable the Oracle Linux 6 Add ons `[ol6_addons]` channel, or add the `jta` package to the `exclude` directive in the yum configuration file `/etc/yum.conf`, for example:

   ```
   exclude=jta*
   ```

2. Enable access to the Spacewalk Server repository.

   Spacewalk is installed from the Oracle Linux yum server at https://yum.oracle.com.

   Download the latest the yum repository configuration file (https://yum.oracle.com/public-yum-ol6.repo) to the yum repositories directory (by default `/etc/yum.repos.d`) and enable the `ol6_spacewalk20_server` repository in that file.

Alternatively, you can create a yum repository configuration file, for example `/etc/yum.repos.d/spacewalk20.repo`, with the following content:

```
[ol6_spacewalk20_server]
name=Spacewalk Server 2.0 for Oracle Linux 6 ($basearch)
baseurl=https://yum.oracle.com/repo/OracleLinux/OL6/spacewalk20/server/$basearch/
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
gpgcheck=1
enabled=1
```

3. Install Spacewalk.

```
# yum install spacewalk-oracle
```

4. Configure Spacewalk.

If you are using an Oracle database, either on the same server or on a remote server, use the following command:

```
# spacewalk-setup --disconnected --external-db
```

Otherwise, use the following command:

```
# spacewalk-setup --disconnected
```

The following example shows an interactive configuration:

```
# spacewalk-setup --disconnected --external-db
 * Setting up Oracle environment.
 * Setting up database.
 ** Database: Setting up database connection for Oracle backend.
 Database service name (SID)? <orcl.domain.com>
 Database hostname [localhost]? <spacewalk-db.domain.com>
 Username? <spacewalk-db-user>
 Password? **
 Database: Testing database connection.
 ** Database: Populating database.
 *** Progress: ##########################################################
 * Setting up users and groups.
 ** GPG: Initializing GPG and importing key.
 ** GPG: Creating /root/.gnupg directory
 You must enter an email address.
 Admin Email Address? <your.email@domain.com>
 * Performing initial configuration.
 * Activating Spacewalk.
 ** Loading Spacewalk Certificate.
 ** Verifying certificate locally.
 ** Activating Spacewalk.
 * Enabling Monitoring.
 * Configuring apache SSL virtual host.
 Should setup configure apache's default ssl server for you (saves original ssl.conf) [Y]?
 ** /etc/httpd/conf.d/ssl.conf has been backed up to ssl.conf-swsave
 * Configuring tomcat.
 ** /etc/sysconfig//tomcat6 has been backed up to tomcat6-swsave
 ** /etc/tomcat6//server.xml has been backed up to server.xml-swsave
 ** /etc/tomcat6//web.xml has been backed up to web.xml-swsave
 * Configuring jabberd.
 * Creating SSL certificates.
 CA certificate password?
 Re-enter CA certificate password?
 Organization? <Oracle Demo>
 Organization Unit [spacewalk.domain.com]?
```

The software described in this documentation is either no longer supported or is in extended support.
Oracle recommends that you upgrade to a current supported release.
Configuring Software Channels by Using the Oracle Linux Yum Server

```
Email Address [your.email@domain.com]?
City? <Redwood Shores>
State? <CA>
Country code (Examples: "US", "JP", "IN", or type "?" to see a list)? <US>
** SSL: Generating CA certificate.
** SSL: Deploying CA certificate.
** SSL: Generating server certificate.
** SSL: Storing SSL certificates.
* Deploying configuration files.
* Update configuration in database.
* Setting up Cobbler..
Processing /etc/cobbler/modules.conf
`/etc/cobbler/modules.conf' -> `/etc/cobbler/modules.conf-swsave'
Processing /etc/cobbler/settings `/etc/cobbler/settings' -> `/etc/cobbler/settings-swsave'
cobblerd does not appear to be running/accessible
Cobbler requires tftp and xinetd services be turned on for PXE provisioning functionality.
Enable these services [Y]?
cobblerd does not appear to be running/accessible
* Restarting services.
Installation complete.
Visit https://spacewalk.domain.com to create the Spacewalk administrator account.
```

1.2.6 Configuring Software Channels by Using the Oracle Linux Yum Server

Oracle Linux channels can be configured using the `spacewalk-common-channels` tool provided in the `spacewalk-utils` package. This tool can automatically configure the required software channels, public yum repositories, GPG keys and activation keys for both Oracle Linux 5 and 6.

The following channels can be created using the `spacewalk-common-channels` command:

- **For Oracle Linux 6 (i386 and x86_64):**

   oraclelinux6 (base channel)

   oraclelinux6-addons

   oraclelinux6-uek

   oraclelinux6-mysql

   oraclelinux6-playground

   oraclelinux6-spacewalk20-client

   oraclelinux6-spacewalk20-server

- **For Oracle Linux 5 (i386 and x86_64):**

   oraclelinux5 (base channel)

   oraclelinux5-addons

   oraclelinux5-oracle-addons

   oraclelinux5-unsupported

   oraclelinux5-uek

   oraclelinux5-spacewalk20-client

For example, to create all the 32-bit and 64-bit software channels for Oracle Linux 6, install the `spacewalk-utils` package and then run the `spacewalk-common-channels` tool, as follows:

```
# yum install spacewalk-utils
# spacewalk-common-channels -v -u <admin> -p <password> -a i386,x86_64 -k unlimited 'oraclelinux6*'
```

Use the `spacewalk-common-channels -h` command to see full usage information.

1.2.7 Configuring Software Channels by Using ULN

The Oracle version of Spacewalk contains ULN plug-in for the `spacewalk-repo-sync` tool. The plug-in enables you to synchronize ULN channels directly into Spacewalk channels without requiring the Spacewalk server to be registered with ULN.

> **Note**
>
> The ULN plug-in was not included with the initial release of Spacewalk from Oracle. Depending on the configuration of your Spacewalk server, you might need to update the Spacewalk packages.

To configure the ULN plug-in, edit the `/etc/rhn/spacewalk-repo-sync/uln.conf` file and add login credentials for ULN. By default, this file is read-only by `root`.

```
[main]
username=<ULN SSO username>
password=<ULN SSO password>
```

After you edit the configuration file, ensure that the file permissions are read-only (0400) by `root`. This is an important security step to protect the ULN credentials.

Once the ULN plug-in is configured, you create the Spacewalk software channels and repositories in the normal way using the Spacewalk web interface. When you specify the URL for a ULN repository, use a URL in the following format:

```
uln:///<ULN channel label>
```

> **Note**
>
> The URL must contain three forward slash (`/`) characters. For example:
>
> ```
> uln:///ol6_x86_64_latest
> ```

For example:

```
uln:///ol6_x86_64_latest
```

You can get a list of available ULN channel labels by logging in to ULN (https://linux.oracle.com) and selecting the **Channels** tab.

1.2.8 Synchronizing Software Channels

Once you have configured the software channels, you can synchronize the software either by performing an immediate manual synchronization or by scheduling a recurring synchronization job.

As a minimum, Oracle recommends that you update the Oracle Linux 5 and Oracle Linux 6 latest channels daily.

The initial synchronization of the Oracle Linux 5 and Oracle Linux 6 channels can take several days to complete. Oracle recommends that you perform an initial manual synchronization to populate the channels, and then configure a recurring job to keep them updated.

Synchronizing Software Channels Using the Spacewalk Web Interface

1. Go to **Channels**, then **Software Channels**, and select the required channel.

2. Select **Repositories**, and then **Sync**.

3. Synchronize the software.

   To perform an immediate manual synchronization, click the **Sync Now** button.

   To schedule a recurring synchronization job, select the preferred schedule, and click the **Schedule** button.

Synchronizing Software Channels Using the Command Line

Use the `spacewalk-repo-sync` tool to synchronize software channels. You must be `root` to use this tool. You can run the tool manually or in a `cron` job. See the man page for `spacewalk-repo-sync` for full details of the options. If you run the tool in a `cron` job, remember to include the `-q` or `--quiet` option.

In order to synchronize a channel, the key information is the channel label and the URL of the repository. Use the `spacewalk-repo-sync -l` command to display this information.

To synchronize a channel with a ULN repository, use the following format:

```
# spacewalk-repo-sync -t uln -c <Spacewalk channel label> -u uln:///<ULN channel label>
```

For example:

```
# spacewalk-repo-sync -t uln -c oraclelinux6_x86_64_latest -u uln:///ol6_x86_64_latest
```

To synchronize a channel with an Oracle Linux yum server repository, use the following format:

```
# spacewalk-repo-sync -c <Spacewalk channel label> -u http://<repo URL>
```

For example:

```
# spacewalk-repo-sync -c oraclelinux6_x86_64_latest \
-u https://yum.oracle.com/repo/OracleLinux/OL6/latest/x86_64/
```

1.2.9 Creating Activation Keys for Spacewalk Clients

After you have configured and synchronized the software channels, you must create an activation key so that servers can register to those channels.

Create an activation key for each base channel and architecture you configured. If you configured all the channels, you need four activation keys, two for Oracle Linux 5 (i386 and x86_64) and two for Oracle Linux 6 (i386 and x86_64).

You synchronize software as follows:

1. In the Spacewalk web interface, go to **Systems**, and then **Activation Keys**.

2. Click **Create New Key**.

Oracle recommends that you do not use the generate function to create an activation key. Instead, create a key with a label that is easy to understand, for example based on the version number and architecture (`oraclelinux6-x86_64`), or based on the server type (`webserver` or `appserver`). Spacewalk automatically adds a number to the activation key label. For example, if you select `oraclelinux-x86_64` as the label, the key that is actually created might be called `1-oraclelinux-x86_64`. This enables you to create multiple activation keys for the same base channel, each with different configuration options. The name you use is presented during Spacewalk client registration and creating your own key labels helps you to select the right key.

1.3 Installing the Spacewalk Client and Registering Servers

Oracle supports only Oracle Linux servers as Spacewalk clients. You can use Spacewalk to manage Fedora-based clients and other systems by using upstream client binaries and repositories but Oracle does not provide support for these clients.

Oracle provides Spacewalk client packages for Oracle Linux 5 and 6 for both i386 and x86_64 architectures.

If the Spacewalk Client channel provided by Oracle is mirrored on the Spacewalk server, the Spacewalk client is installed automatically on servers that are provisioned from Spacewalk. The Spacewalk Client channel can be configured using the `spacewalk-common-channels` command, as described in Section 1.2.6, "Configuring Software Channels by Using the Oracle Linux Yum Server".

Starting with Oracle Linux 7 Update 1, you do not need to install the Spacewalk client before registering a system with a Spacewalk server. You can simply register the system using the `rhnreg_ks` command. If you do this, Oracle recommends installing the full Spacewalk Client after registration to support all of the features provided by Spacewalk, which include provisioning and auditing.

For an Oracle Linux server that is not yet connected to Spacewalk, you install the Spacewalk client and register the server, as follows:

1. Enable access to the Spacewalk Client repository.

   Download the latest the yum repository configuration file from https://yum.oracle.com/ and save it to the yum repositories directory (by default `/etc/yum.repos.d`). Edit the configuration file and enable the repository:

   • **Oracle Linux 7:** enable the `ol7_spacewalk22_client` repository.

   > **Note**
   >
   > For Oracle Linux 7, you must use the Spacewalk 2.2 client to connect to a Spacewalk 2.0 server.

   Alternatively, you can create a `/etc/yum.repos.d/spacewalk22-client.repo` file with the following content:

   ```
   [ol7_spacewalk22_client]
   name=Spacewalk Client 2.2 for Oracle Linux 7 ($basearch)
   baseurl=https://yum.oracle.com/repo/OracleLinux/OL7/spacewalk22/client/$basearch/
   gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
   gpgcheck=1
   enabled=1
   ```

   • **Oracle Linux 6:** enable the `ol6_spacewalk20_client` repository.

Alternatively, you can create a `/etc/yum.repos.d/spacewalk20-client.repo` file with the following content:

```
[ol6_spacewalk20_client]
name=Spacewalk Client 2.0 for Oracle Linux 6 ($basearch)
baseurl=https://yum.oracle.com/repo/OracleLinux/OL6/spacewalk20/client/$basearch/
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
gpgcheck=1
enabled=1
```

- **Oracle Linux 5:** enable the `ol5_spacewalk20_client` repository.

  Alternatively, you can create a `/etc/yum.repos.d/spacewalk20-client.repo` file with the following content:

```
[ol5_spacewalk20_client]
name=Spacewalk Client 2.0 for Oracle Linux 5 ($basearch)
baseurl=https://yum.oracle.com/repo/OracleLinux/OL5/spacewalk20/client/$basearch/
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
gpgcheck=1
enabled=1
```

2. **(Oracle Linux 5 only)** Remove the `pirut`, `up2date`, and `up2date-gnome` packages.

   Use the `rpm -e --nodeps` command to remove these packages.

   In your Oracle Linux 5 Kickstart profiles in Spacewalk, exclude these packages from installation by inserting a dash character (-) in front of the package name in the Kickstart profile on the **Software**, **Package Group** screen, for example:

```
@Base
-pirut
-up2date
-up2date-gnome
```

3. Install the Spacewalk client.

   Use the following command to install the Spacewalk client on all platforms:

```
# yum install rhn-client-tools rhn-check rhn-setup rhnsd m2crypto yum-rhn-plugin
```

   This command replaces the existing packages and deletes a registered server from ULN.

4. Register the server with Spacewalk using the `rhnreg_ks` command.

   Before you can register a server, you must have already created a client activation key, as described in Section 1.2.9, "Creating Activation Keys for Spacewalk Clients". If enabled, a universal default key can be used. However, using a specific activation key is better.

```
# rhnreg_ks --serverUrl=http://spacewalk_server/XMLRPC --activationkey=activation_key
```

   For Oracle Linux 7 Update 1 and later systems that do not have the Spacewalk Client installed, you must provide a user name that is authorized to register the system and the user's password in plain text, in addition to the activation key:

```
# rhnreg_ks --serverUrl=http://spacewalk_server/XMLRPC --username=user \
  --password=passwd  --activationkey=activation_key
```

5. Disable access to the Spacewalk Client repository.

Disable Spacewalk Client repository in the yum repository configuration file, or delete your Spacewalk Client `.repo` file.

1.4 Known Issues

1.4.1 Spacewalk Fails to Install Due to `slf4j` Package

In some circumstances, the Spacewalk installation can fail if the `slf4j` (Simple Logging Facade for Java) package is installed. The workaround is to remove the `slf4j` package. Be aware that Eclipse depends on this package, so you either have to uninstall Eclipse or remove the package with the `rpm -e --nodeps slf4j` command.

1.4.2 Tomcat Fails to Start After Spacewalk Configuration

If the Tomcat service (`tomcat6`) fails to start after the initial configuration of Spacewalk, check that the `geronimo-jta-1.1-api` package is installed. If you installed Oracle Linux using a software set other than **Minimal** or **Basic Server**, the `jta` package might be installed on the system and the presence of this package prevents the `geronimo-jta-1.1-api` package from being installed. The `geronimo-jta-1.1-api` package is required to ensure that all the Spacewalk services start correctly. If the `geronimo-jta-1.1-api` package is missing from your system, remove the `jta` package, install the `geronimo-jta-1.1-api` package, and then shutdown and reboot the system.

1.4.3 Spacewalk Client Fails to Install on Oracle Linux 5

The Spacewalk client conflicts with the `up2date` client installed by default for connectivity to the Unbreakable Linux Network. Before you install the Spacewalk client for Oracle Linux 5, remove the `up2date` and `up2date-gnome` packages manually using the `rpm -e --nodeps` command.

1.4.4 Oracle Linux 5 Does Not Register with Spacewalk after Kickstart Installation

If Oracle Linux 5 does not register with Spacewalk after Kickstart installation, add `-up2date` and `-up2date-gnome` to the Kickstart profile on the **Software**, **Package Group** screen.

1.4.5 PXE Booting Fails Due to Incorrect Host Name Configuration

If the Spacewalk server was installed without a fully-qualified domain name (FQDN), or a name that cannot be resolved in DNS, Spacewalk creates invalid PXE boot configuration files.

You can validate that Cobbler is configured correctly by checking that the IP address used in the `ks=` parameter in the `/var/lib/tftpboot/pxelinux.cfg/default` file is correct.

To reconfigure a Spacewalk server after installation:

1. Edit the `/etc/cobbler/settings` file and change all instances of incorrect host names, such as `localhost.localdomain`.

2. Restart Spacewalk by running `spacewalk-service restart`.

3. Resynchronise Cobbler by running `cobbler sync`.

1.4.6 Memory Issues With Large Repositories or Data Sets

When building repository metadata, Spacewalk can fail with Out of Memory issues. This is caused by the default Java memory settings for the Taskomatic daemon. The solution is to increase the JVM memory settings in the configuration file for the Taskomatic daemon `/usr/share/rhn/config-defaults/rhn_taskomatic_daemon.conf`.

Similar memory issues can also occur in the web interface if you have big data sets, such as a large number of servers or packages. The solution is to increase the Tomcat memory limits in the `/etc/sysconfig/tomcat6` file. Edit the `JAVA_OPTS` environment variable, and increase the `-Xms` (the start or initial amount of memory) and `-Xmx` (the maximum amount of memory) parameters.

1.4.7 Client Registration Issues

During installation, Spacewalk generates a CA certificate. This certificate is used in the client registration process. If a Spacewalk server does not have a valid fully-qualified domain name (FQDN), Spacewalk does not generate a valid CA certificate. Spacewalk does not consider `.local` and `.localdomain` to be valid domain names.

1.5 Spacewalk Documentation

Release notes for the Spacewalk project can be found at:

https://fedorahosted.org/spacewalk/wiki/ReleaseNotes20

User documentation for the Spacewalk project can be found at:

https://fedorahosted.org/spacewalk/wiki/UserDocs