Spacewalk for Oracle® Linux

Release Notes for Release 2.4

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About this document

This document contains information about the Spacewalk 2.4 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 2.4 provides details of the Spacewalk 2.4 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 2.4 for Oracle Linux

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

Minor changes include the addition of Oracle Linux 6 and Oracle Linux 7 GPG keys and some branding changes.

Installation

For information about installing or upgrading Spacewalk 2.4 servers and proxies, see *Spacewalk for Oracle® Linux: Installation Guide for Release 2.4*.

For information about installing the Spacewalk Client software, see Section 1.3, "Installing the Spacewalk Client Software and Registering Servers".

Summary of New Features and Changes Since Release 2.2

In addition to numerous fixes and small enhancements, the Spacewalk 2.4 release includes the following new features and changes:

- Support for the installation and configuration of a Spacewalk server or proxy on Oracle Linux 7 (x86_64) in addition to Oracle Linux 6 (x86_64).

- The monitoring component of Spacewalk is no longer available. You must use an alternative monitoring solution.

- Changes to the organization of the menus in the web interface. For example, you can configure an organization by selecting the **Organization** menu under the **Admin** tab.

- Support for external IPA authentication using `spacewalk-setup-ipa-authentication`. For more information, see https://fedorahosted.org/spacewalk/wiki/SpacewalkAndIPA.

- Command enhancements to `spacecmd`, including:

  - `configchannel_sync` command has been added.

  - `softwarechannel_create` now allows you to associate GPG key information with a software channel.

  - `softwarechannel_errata_diff` command has been added.

  - `softwarechannel_errata_sync` command has been added.

  - `softwarechannel_listsyncschedule` command has been added.

  - `softwarechannel_removesyncschedule` command has been added.

  - `softwarechannel_sync` command has been added.

- Command enhancements to `spacewalk-clone-by-date`, including:

  - New `--dry-run` option

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.

Summary of New Features and Changes Since Release 2.2

- Improved dependency resolution

- Command enhancements to `spacewalk-repo-sync`, including:

  - The `--latest` option, which tells the server to synchronize only the latest packages that are available.

  - The `-p` option, which allows you to synchronize a parent channel and all of its children in one operation.

- The `spacewalk-manage-channel-lifecycle` command allows you to manage the life cycle of a software channel from development, through testing to production, as shown in the following examples:

  - Create a development channel `dev-ol6-x86_64-appsvr` based on the latest available packages in `ol6-x86_64-appsvr`.

    ```
    # spacewalk-manage-channel-lifecycle -c ol6-x86_64-appsvr --init
    ```

  - Promote the packages from the development channel to the test channel `test-ol6-x86_64-appsvr`.

    ```
    # spacewalk-manage-channel-lifecycle -c dev-ol6-x86_64-appsvr --promote
    ```

  - Promote the packages from the test channel to the production channel `prod-ol6-x86_64-appsvr`.

    ```
    # spacewalk-manage-channel-lifecycle -c test-ol6-x86_64-appsvr --promote
    ```

You can save the state of a channel by creating an archive channel `archive-date-channel`.

```
# spacewalk-manage-channel-lifecycle -c prod-ol6-x86_64-appsvr --archive
```

If you need to restore the state of a channel, use the `--rollback` option and specify the archived version of the channel that you want to restore, for example:

```
# spacewalk-manage-channel-lifecycle -c archive-20110520-test-ol6-x86_64-appsvr --rollback
```

Use the `-l` option to list the channels:

```
# spacewalk-manage-channel-lifecycle -l
Channel tree:

 1. archive-20160203-ol6-x86_64-appsvr
      \__ archive-20160203-prod-ol6-x86_64-appcmd
      \__ archive-20160203-prod-ol6-x86_64-applib

 2. dev-ol6-x86_64-appsvr
      \__ dev-ol6-x86_64-appcmd
      \__ dev-ol6-x86_64-applib

 3. ol6-x86_64-appsvr
      \__ ol6-x86_64-appcmd
      \__ ol6-x86_64-applib

 4. prod-ol6-x86_64-appsvr
      \__ prod-ol6-x86_64-appcmd
      \__ prod-ol6-x86_64-applib

 5. test-ol6-x86_64-appsvr
      \__ test-ol6-x86_64-appcmd
      \__ test-ol6-x86_64-applib
```

- Passwords are no longer sent as clear text in emails. Instead a one-time URL is sent that allows a user to set his or her password.

- Up-to-date API documentation can be found on the **Help** tab of the web interface by selecting the **API** menu option, browsing the URL `https://swksvr_FQDN/rhn/apidoc/index.jsp` on the server, or at: http://www.spacewalkproject.org/documentation/api/2.4.

Detailed information about the changes can be found in the Release Notes for the Spacewalk project at:

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

1.2 Configuring Spacewalk

This section summarizes the configuration needed to enable Spacewalk to synchronize software with Oracle Unbreakable Linux Network (ULN) or the Oracle Linux yum server.

For an introduction to the concepts and features of Spacewalk and best practices for using Spacewalk for managing Oracle Linux systems, see *Spacewalk for Oracle® Linux: Concepts Guide for Release 2.4*.

For more detailed information, see *Spacewalk for Oracle® Linux: Client Life Cycle Management Guide for Release 2.4*.

Other documentation for the Spacewalk project can be found at:

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

1.2.1 Configuring Software Channels Using ULN

Spacewalk contains a ULN plug-in for `spacewalk-repo-sync`, which enables you to synchronize Spacewalk channels directly from ULN channels without requiring the Spacewalk server to be registered with ULN.

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
```

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

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 Using the Oracle Linux Yum Server

1.2.2 Configuring Software Channels 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, Oracle Linux yum server repositories, GPG keys, and activation keys for Oracle Linux.

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

- For Oracle Linux 7 (x86_64 only):

  `oraclelinux7` (base channel)

  `oraclelinux7-addons`

  `oraclelinux7-mysql55`

  `oraclelinux7-mysql56`

  `oraclelinux7-mysql57`

  `oraclelinux7-openstack20`

  `oraclelinux7-optional`

  `oraclelinux7-scl12`

  `oraclelinux7-spacewalk22-client`

  `oraclelinux7-spacewalk24-client`

  `oraclelinux7-spacewalk24-server`

  `oraclelinux7-uek-r3`

  `oraclelinux7-uek-r4`

- For Oracle Linux 6 (i386 and x86_64 unless specified otherwise):

  `oraclelinux6` (base channel)

  `oraclelinux6-addons`

  `oraclelinux6-mysql56`

  `oraclelinux6-mysql57`

  `oraclelinux6-playground` (x86_64 only)

  `oraclelinux6-scl12` (x86_64 only)

  `oraclelinux6-spacewalk22-client`

  `oraclelinux6-spacewalk22-server` (x86_64 only)

  `oraclelinux6-spacewalk24-client`

  `oraclelinux6-spacewalk24-server` (x86_64 only)

`oraclelinux6-uek`

`oraclelinux6-uek-r3`

`oraclelinux6-uek-r4`

- For Oracle Linux 5 (i386 and x86_64):

`oraclelinux5` (base channel)

`oraclelinux5-addons`

`oraclelinux5-oracle-addons`

`oraclelinux5-spacewalk22-client`

`oraclelinux5-spacewalk24-client`

`oraclelinux5-uek`

`oraclelinux5-unsupported`

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 swadmin -p password -a i386,x86_64 -k unlimited 'oraclelinux6*'
```

For full usage information, use the `spacewalk-common-channels -h` command.

1.2.3 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 latest channels daily.

The initial synchronization of the Oracle Linux 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 **Manage 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. If you run the tool in a `cron` job, remember to include the `-q` or `--quiet` option. For more information , see the `spacewalk-repo-sync(8)` manual page.

The `-p` option allows you to synchronize a parent channel and all of its children in one operation:

```
# spacewalk-repo-sync -p parent_channel
```

For example:

```
# spacewalk-repo-sync -p oraclelinux7-x86_64
```

If you additionally specify the `--latest` option, the server synchronizes only the latest packages that are available.

```
 spacewalk-repo-sync -p oraclelinux7-x86_64 --latest
```

To synchronize a single channel to which a repository has been assigned, use the `-c` option to specify the channel:

```
# spacewalk-repo-sync -p channel
```

You can also use the `--latest` option here as well, for example:

```
# spacewalk-repo-sync -p oraclelinux7-x86_64-uek-r4 --latest
```

To synchronize a channel with a specified ULN repository:

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

For example:

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

To synchronize a channel with a specified Oracle Linux yum server repository:

```
# 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/ \
```

1.2.4 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 configure all the base channels, you need five activation keys, two for Oracle Linux 5 (i386 and x86_64), two for Oracle Linux 6 (i386 and x86_64), and one for Oracle Linux 7 (x86_64).

You synchronize software as follows:

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

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Installing the Spacewalk Client Software and Registering Servers

2. Click **Create New Key**.

Oracle recommends that you enter a meaningful label for the activation key in the **Key** field and that you do not use automatic key generation.

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 prefixes the organization ID to the activation key label. For example, if you select `oraclelinux-x86_64` as the label, Spacewalk creates a key named `1-oraclelinux-x86_64`, where the prefix identifies the organization. You can create multiple activation keys for the same base channel, each with different configuration options. The name that you use is presented during Spacewalk client registration. Creating your own key labels helps you to select the correct key.

1.3 Installing the Spacewalk Client Software 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. For Oracle Linux 7, only packages for the x86_64 architecture are provided.

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. You can use the `spacewalk-common-channels` command to configure the Spacewalk Client channel. See Section 1.2.2, "Configuring Software Channels Using the Oracle Linux Yum Server".

> **Note**
>
> Starting with Oracle Linux 7 Update 1, you do not need to install the Spacewalk client software before registering a system with a Spacewalk server. See Section 1.3.2, "Registering a Spacewalk Client Without First Installing the Spacewalk Client Software".

1.3.1 Installing the Spacewalk Client Software and Registering a Spacewalk Client

For an Oracle Linux server that is not yet connected to Spacewalk, install the Spacewalk client software 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_spacewalk24_client` repository.

    Alternatively, you can create a `/etc/yum.repos.d/spacewalk24-client.repo` file with the following content:

    ```
    [ol7_spacewalk24_client]
    name=Spacewalk Client 2.4 for Oracle Linux 7 ($basearch)
    ```

```
baseurl=https://yum.oracle.com/repo/OracleLinux/OL7/spacewalk24/client/$basearch/
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
gpgcheck=1
enabled=1
```

- **Oracle Linux 6:** enable the `ol6_spacewalk24_client` repository.

  Alternatively, you can create a `/etc/yum.repos.d/spacewalk24-client.repo` file with the following content:

  ```
  [ol6_spacewalk24_client]
  name=Spacewalk Client 2.4 for Oracle Linux 6 ($basearch)
  baseurl=https://yum.oracle.com/repo/OracleLinux/OL6/spacewalk24/client/$basearch/
  gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
  gpgcheck=1
  enabled=1
  ```

- **Oracle Linux 5:** enable the `ol5_spacewalk24_client` repository.

  Alternatively, you can create a `/etc/yum.repos.d/spacewalk24-client.repo` file with the following content:

  ```
  [ol5_spacewalk24_client]
  name=Spacewalk Client 2.4 for Oracle Linux 5 ($basearch)
  baseurl=https://yum.oracle.com/repo/OracleLinux/OL5/spacewalk24/client/$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
   ```

   You must exclude these packages to allow the Spacewalk client software to install correctly.

3. Install the Spacewalk client software.

   Use the following command to install the Spacewalk client software 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.

   > **Note**
   >
   > Before you can register a server, you must have already created a client activation key, as described in Section 1.2.4, "Creating Activation Keys for Spacewalk Clients". If enabled, a universal default key can be used. However, using a specific activation key is better.

> The following steps use SSL to encrypt all communication between the client and the Spacewalk server (the recommended configuration).

a. Download the CA certificate file `RHN-ORG-TRUSTED-SSL-CERT` to the server.

In a browser tab, navigate to **http://*swksvr_FQDN*/pub**, where *swksvr_FQDN* is the fully qualified domain name of the Spacewalk server, and download the CA certificate file `RHN-ORG-TRUSTED-SSL-CERT` to `/usr/share/rhn/`.

Alternatively, you can use `wget` from the command line, for example:

```
# wget -q -O /usr/share/rhn/RHN-ORG-TRUSTED-SSL-CERT \
  http://swksvr_FQDN/pub/RHN-ORG-TRUSTED-SSL-CERT
```

b. Register the system with Spacewalk using the `rhnreg_ks` command, using the `--sslCACert` option to specify the certificate.

```
# rhnreg_ks --sslCACert=/usr/share/rhn/RHN-ORG-TRUSTED-SSL-CERT \
  --serverUrl=https://swksvr_FQDN/XMLRPC --activationkey=activation_key
```

Specify the Spacewalk server or proxy by its fully qualified domain name.

If you need to re-register a Spacewalk client with a Spacewalk server, additionally specify the `--force` option.

5. Disable access to the Spacewalk Client repository in the yum repository configuration file or delete your Spacewalk Client `.repo` file.

1.3.2 Registering a Spacewalk Client Without First Installing the Spacewalk Client Software

> **Note**
>
> This procedure requires that the system to be registered has been installed with Oracle Linux 7 Update 1 or later.

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

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

> **Note**
>
> Before you can register a server, you must have already created a client activation key, as described in Section 1.2.4, "Creating Activation Keys for Spacewalk Clients". If enabled, a universal default key can be used. However, using a specific activation key is better.
>
> The following steps use SSL to encrypt all communication between the client and the Spacewalk server (the recommended configuration).

a. Download the CA certificate file `RHN-ORG-TRUSTED-SSL-CERT` to the server.

In a browser tab, navigate to **http://*swksvr_FQDN*/pub**, where *swksvr_FQDN* is the fully qualified domain name of the Spacewalk server, and download the CA certificate file `RHN-ORG-TRUSTED-SSL-CERT` to `/usr/share/rhn/`.

Alternatively, you can use `wget` from the command line, for example:

```
# wget -q -O /usr/share/rhn/RHN-ORG-TRUSTED-SSL-CERT \
  http://swksvr_FQDN/pub/RHN-ORG-TRUSTED-SSL-CERT
```

b. Register the system with Spacewalk using the `rhnreg_ks` command, using the `--sslCACert` option to specify the certificate.

```
# rhnreg_ks --sslCACert=/usr/share/rhn/RHN-ORG-TRUSTED-SSL-CERT \
  --serverUrl=https://swksvr_FQDN/XMLRPC --activationkey=activation_key
```

Specify the Spacewalk server or proxy by its fully qualified domain name.

If you need to re-register a Spacewalk client with a Spacewalk server, additionally specify the `--force` option.

2. Oracle recommends installing the full Spacewalk client software after registration to support all of the features provided by Spacewalk, which include provisioning and auditing.

To install the Spacewalk Client software after registration, subscribe the server to a Spacewalk Client 2.4 software channel and use `yum` to install the packages:

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

1.4 Known Issues

The following sections describe known issues.

1.4.1 Oracle Linux 6 Update 8 Fails to Run `yum` Commands After Registration

Registration of an Oracle Linux 6 Update 8 server succeeds with the built-in packages, but subsequent `yum` commands fail with the error: "KeyError: 'X-RHN-Auth-Expiration'". Installing the full Spacewalk 2.4 client for Oracle Linux 6 resolves this problem and should be done prior to registration. Follow the steps that are described in *Spacewalk for Oracle® Linux: Client Life Cycle Management Guide for Release 2.4*.

1.4.2 Spacewalk Logging

Spacewalk generates large numbers of log messages, particularly under `/var/log/httpd`. To avoid running out of disk space, you might need to adjust the `logrotate` settings to implement more active rotation, compression, and archival of log files.

For more information, see *Oracle® Linux 6: Administrator's Guide* and *Oracle® Linux 7: Administrator's Guide*.

1.4.3 Spacewalk Fails to Install Due to the 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.

1.4.4 Tomcat Fails to Start After Spacewalk Configuration

If the Tomcat service 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**

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Spacewalk Client Fails to Install on Oracle Linux 5

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.

1.4.5 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.

1.4.6 Upgrading Spacewalk Packages on Oracle Linux 7

Before upgrading Spacewalk packages on an Oracle Linux 7 system, use the following commands to force `cglib` and `python-debian` to stay at `cglib-2.1.3-4.jpp5.*` and `python-debian-0.1.21-10.el7.*`:

```
# yum install yum-versionlock
# yum versionlock cglib-2.1.3-4.jpp5.*
# yum versionlock python-debian-0.1.21-10.el7.*
```

This entry is required because the versions of `cglib` and `python-debian` in Oracle Linux 7 are more recent than the versions in Spacewalk 2.4. Otherwise, you see dependency errors such as the following:

```
Error: Package: spacewalk-java-2.4.79-1.0.2.el7.noarch (@ol7_spacewalk24_server)
          Requires: cglib < 2.2
Error: Package: spacewalk-taskomatic-2.4.79-1.0.2.el7.noarch (@ol7_spacewalk24_server)
          Requires: cglib < 2.2
```

1.4.7 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.

1.4.8 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`.

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Out of Memory Issues With Large Repositories or Data Sets

1.4.9 Out of Memory Issues With Large Repositories or Data Sets

When building repository metadata, Spacewalk can fail with Out of Memory issues. This issue is caused by the default Java memory settings for the Taskomatic daemon. The solution is to increase the JVM memory settings in the global Spacewalk configuration file (`/etc/rhn/rhn.conf`).

The suggested maximum value range for the JVM memory settings is 4096 MB to 8192 MB, depending on the size of the repositories that must be synchronized.

By default, Taskomatic is configured to use a minimum of 512 MB of RAM and a maximum of 1024 MB. You can increase the maximum value to 4096 MB by adding the `taskomatic.java.maxmemory=4096` property, as follows:

`wrapper.java.maxmemory=4096`

However, to achieve a greater value, such as 8192 MB, you must disable the automatic memory setting and manually add the minimum and maximum Java memory values by setting the `taskomatic.java.additional.1` and `taskomatic.java.additional.2` properties, as shown in the following example:

```
taskomatic.java.initmemory=0
taskomatic.java.maxmemory=0
taskomatic.java.additional.1=-Xms1024m
taskomatic.java.additional.2=-Xmx8192m
```

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` (Oracle Linux 6) or `/etc/sysconfig/tomcat` (Oracle Linux 7) 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.

1.4.10 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.

1.4.11 Clients Might Have to Re-register After an Upgrade

After a Spacewalk server is upgraded, Spacewalk clients might have to re-register with the Spacewalk server. The web interface shows the clients as registered, but when you run the `rhncfg-client` command on the client, errors such as `Authentication failed: Invalid digital server certificate` are displayed.

If this happens, use either the `rhn_register` or the `rhnreg_ks --force` command to re-register the client.

1.4.12 Spacewalk Does Not Work if root Has a Restrictive umask

If the `root` user's `umask` is too restrictive (for example, 0077 or similar instead of 0022), Apache, Tomcat, and Java processes cannot read some files written during Spacewalk installation or written by commands such as `spacewalk-repo-sync` or `spacecmd`. Clients might also stop working because Spacewalk cannot serve yum metadata or package files.

1.4.13 yum Command Displays HTML

To prevent the yum command from displaying many lines of HTML when run on a Spacewalk client, do *either* of the following:

- Edit /etc/yum/pluginconf.d/ulninfo.confset and set the value of enable to 0.

- Remove the yum-plugin-ulninfo package.

1.4.14 Issues With Kickstart After an Upgrade

After a Spacewalk server is upgraded, using existing kickstart profiles and distributions might result in errors. The web interface might show error messages such as:

```
This kickstart profile uses a different type of encryption by default than the
root password is currently using. You must reset the root password to encrypt
it with the new method.
```

The solution is:

1. Reset the root password.

2. Restart the Spacewalk service.

   ```
   # /usr/sbin/spacewalk-service restart
   ```

3. Remount your distribution trees and ISO images.