



Red Hat Subscription Management 1

Using Notifications and Reports with Red Hat Subscription Management

Viewing and responding to system notifications, infrastructure reports, and other subscription information

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Abstract

This guide describes common reports and notifications and tells you how to respond to situations that involve insufficient or expired subscriptions.

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1. SUBSCRIPTION STATUS, NOTIFICATIONS, AND COMPLIANCE

As an IT administrator, you must manage and maintain inventories of the systems that you administer. A system inventory includes both the hardware and the software that is installed on the hardware. Software is frequently installed on a subscription basis. In order to maintain an accurate inventory of the software and associated subscriptions, you need to track key information:

- What is installed
- Where it is installed
- How many copies are active
- When do the subscriptions expire

As an IT administrator, you might be responsible for providing accurate inventories of the software. For example, corporations must maintain and provide accurate information about their software assets in order to comply with the Sarbanes–Oxley regulations in the United States or the Payment Card Industry Data Security Standard (PCI-DSS). Gathering and maintaining all the information about your software assets is often referred to as *software license management*. When you use the Red Hat subscription model, it is called *subscription management*.

Subscription management is a way of identifying and creating relationships between the systems in your IT environment and the software products that you obtain through Red Hat. By effectively managing your subscriptions, you achieve the following goals:

- Maintain regulatory compliance by tracking software subscriptions and expiration dates.
- Simplify IT audits by maintaining up-to-date deployment information.
- Assign subscriptions more effectively by clarifying the relationships between subscriptions, systems, and usage.
- Lower costs by proactively managing under-subscriptions and over-subscriptions.

Subscriptions follow a lifecycle:

- An account buys a *subscription* to a *product*, which gives them access to the Red Hat Content Delivery Network, errata and patches, upgrades, and support.

A subscription is usable or *valid* for a set amount of time and can be used a certain number of times (the *quantity*).

- A server is added, or *registered*, to the *inventory* for the subscription management service. Once the system is added, there is a list of facts defining attributes about the system and a profile which lists the installed products and their versions.
- A subscription is *attached* to a system, so that the system is entitled to support services and content for that product.

Subscriptions can be manually assigned by an administrator or they can be automatically attached by the subscription process based on what subscriptions best match the system attributes and installed products.

- As the validity period of the subscription ends or as new products are added, then new subscriptions must be attached to the system so that it maintains coverage.

1.1. Interactions with subscriptions, products, and systems

Products on a system have relationships, dependencies, and conflicts between each other. Likewise, subscriptions have relationships that parallel the relationships of the software it represents. Some subscriptions allow virtual guests, some require other subscriptions, some conflict with other subscriptions.

Subscriptions define the relationships between installed products and each other, and the systems on which those products are installed. Subscriptions also define relationships between systems and how they interact within an environment. This interaction is apparent with virtual environments where subscriptions can define different relationships for physical hosts and virtual guests. In addition, systems can interact in other ways such as data centers and cloud infrastructures. Subscriptions are part of those meta relationships.

Using subscriptions to define these various relationships introduces flexibility in how products and systems interact:

- Associate a single quantity of a product with a single system, which is the most common relationship.
- Restrict one product so that it cannot be installed on the same system as a specific, different product.
- Keep a system on a consistent service level. Each subscription includes a definition for what service level. Subscription clients first try to assign subscriptions of the same service level, which provides consistent support levels for the system.
- Allow virtual guests to inherit some subscriptions from their host.
- Allow some hosts to have unlimited guests for a data center deployment.
- Allow a single subscription to be broken across multiple systems. This works in something like Red Hat Cloud Infrastructure, where a single purchase actually covers four products: Red Hat Enterprise Linux, Red Hat OpenStack, Red Hat Virtualization, and CloudForms. These products each have their own subscription which can be used on different systems to create the stack.
- Stack or combine subscriptions of the same type to cover a system.

1.2. Counting subscriptions

Part of the subscription service inventory is keeping track of subscriptions for the subscriptions purchased and the subscription availability.

A subscription purchase includes how many times the subscription can be used, or its entitlements. The subscription service looks at whether the system is physical or virtual, as well as how many sockets the system has:

- A physical system usually consumes two entitlements, whereas a virtual system consumes one.
- One entitlement is consumed per two sockets on a system.

Another count can be the number of cores. Whether sockets, cores, or some other system element depends on the specific subscription. Each element of a system or software that is directly covered by a subscription is called an *instance*.

For example, a single subscription for Red Hat Enterprise Linux covers two sockets. The product is Red Hat Enterprise Linux and the system attribute is a physical socket pair. The *socket pair* comprises one instance. It follows that an eight-socket system (four pairs) requires more subscriptions than a single socket pair.

This socket-pair arrangement, does not apply to all subscriptions. Red Hat Subscription Management tracks other types of subscription relationships:

- Multiple products with a single subscription (Red Hat Cloud Infrastructure)
- Inheritable subscriptions
- Data center subscriptions, which allow unlimited virtual guests (and only the host requires a specific subscription)

The same subscription is used for both physical and virtual systems, but the quantity used can be different, depending on whether the subscription is a physical system or a virtual one.

A single subscription quantity is used for each socket pair on a physical system. A virtual guest counts as a single socket, not a socket pair; therefore it is one half of a subscription quantity. When virtual guests are added to the inventory, the total number of available subscriptions is multiplied by two. This allows the subscription count to stay in whole numbers, even with virtual guests taking only a “half” quantity.

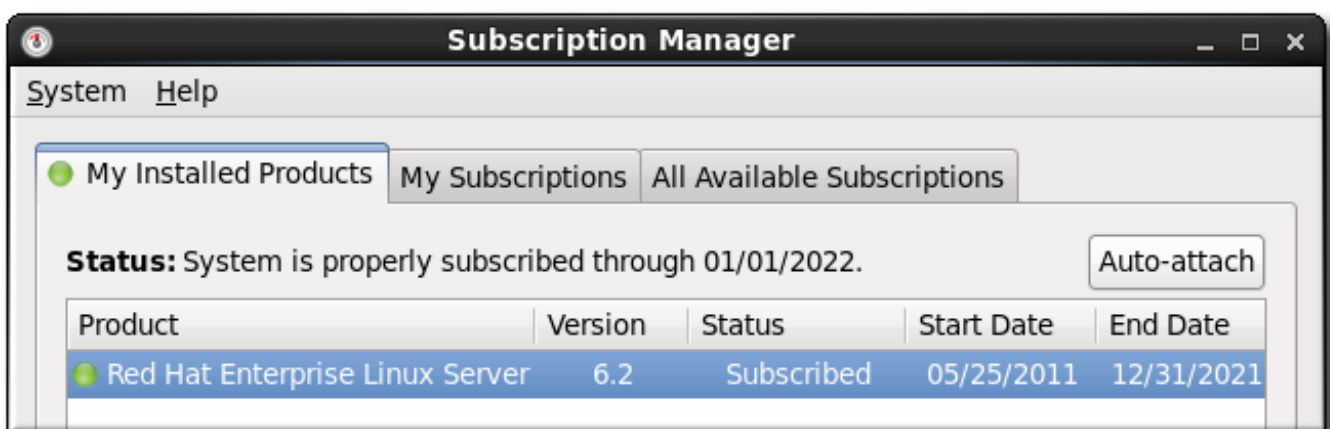
Because of the variations in how subscriptions are counted, the utilization counts shown in the subscription management tools might differ slightly from the actual number of subscriptions purchased.

1.3. Expiration dates and validity ranges

Subscriptions are active for a limited period of time, called the *validity period*. When a subscription is purchased, the start and end dates for the validity period are set.

On a system, there can be multiple subscriptions attached. Each product requires its own subscription. Additionally, some products may require multiple quantities of subscriptions for the product to be fully covered. Coverage is based on whether the system is physical or virtual and how many sockets the system has.

When you use the Subscription Manager application by running the **subscription-manager-gui** command as the **root** user, the **My Installed Products** tab shows subscription status for the entire system. It also shows a date that indicates when your first subscription will expire.



For example, if you have a product subscription that expires on April 17 and all other product subscriptions are valid through October 1, the **Status** summary shows that your subscriptions are valid until April 17, which the closest expiration date.

Subscriptions can string together in a queue. For example, you have a 4-socket system that uses two 2-socket subscriptions to cover the socket count. However, the system actually has three subscriptions attached to it:

- 2-socket subscription A expires April 1, 2012.
- 2-socket subscription B expires July 31, 2013.
- 2-socket subscription C starts March 1, 2012 and expires April 1, 2014.

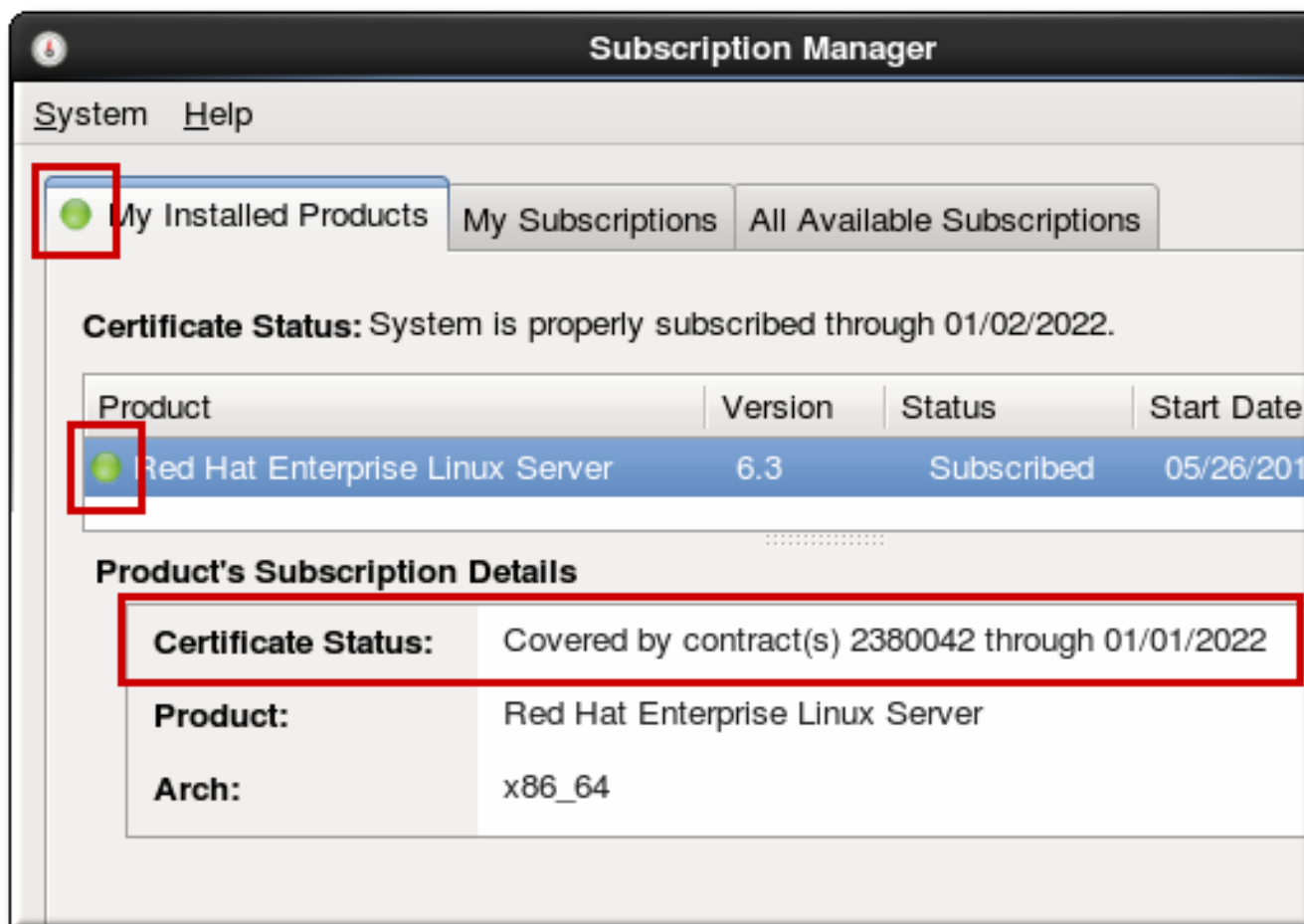
The system is valid through July 31, 2013, because Subscription C is already queued up to replace Subscription A when it expires.

1.4. Subscription states

All of the subscription management tools provide log and UI messages that indicate changes to the valid subscriptions for the installed products on a system.

Product subscription status is color-coded:




- *green* means all subscriptions are valid for all installed products.
- *yellow* means some products need attention, such as not all required subscriptions are valid but updates are still in effect.
- *red* means that subscription updates are disabled and new subscriptions are required.



The command-line tools also indicate that status of the machine. The green, yellow, and red codes translate to text status messages of *subscribed*, *partially subscribed*, and *expired or not subscribed*.

```
[root@localhost ~]# subscription-manager list
+-----+
  Installed Product Status
+-----+
Product Name:  Red Hat Enterprise Linux Server
Product ID:   69
Version:      7.6
Arch:         x86_64
Status:       Subscribed
Status Details:
Starts:       04/24/2013
Ends:         01/01/2022
```

Table 1. Status Labels and Icons

Icon	Message	Description
	<ul style="list-style-type: none"> * Valid * Subscribed * Sufficient 	All installed products have a valid subscription attached and the system is fully covered.
	<ul style="list-style-type: none"> * Insufficient * Partially subscribed 	Some installed products do not have subscriptions or do not have an adequate number of subscriptions attached. Updates and support policies are still in effect.
	<ul style="list-style-type: none"> * Invalid * Not subscribed 	No subscriptions are attached to the system or to the installed product. Updates are disabled and support responses can be affected.

1.5. Notifications and messages

Part of Red Hat Subscription Management on local systems is the **rhsmcertd** service, which interacts with the subscription service to check for new subscriptions, monitors subscription expiration for subscriptions attached to the local system, and tracks installed products for required subscriptions.

The **rhsmcertd** service can issue warnings for expiring or insufficient subscriptions on the local system. Because the **rhsmcertd** service interacts with the subscription service, subscription management dashboards, such as the Red Hat Subscription Management on the Customer Portal, show the status of all systems registered to your account as well as status of individual systems.

Subscription compliance is managed at the system-level, so Red Hat Subscription Management messages and notifications are invaluable for responding to changes in subscription status on systems. For overall infrastructure tracking, resource planning, and regulatory or standards compliance, the high-level overviews are useful for all subscription compliance activity, such as auditing, purchasing, and planning.

1.6. Subscription states and compliance

When a system has insufficient or expired subscriptions, the way to remediate it is to update the subscriptions for the system. This can be done manually, but the most efficient management is to enable *autoattaching* on the systems so that subscriptions are automatically attached or updated when the subscription status for the system changes.

Autoattaching is part of the **rhsmcertd** service. In its default configuration the **rhsmcertd** service check every four hours for the following:

- Status of the current installed products
- Current attached and active subscriptions
- Available subscriptions

If autoattaching is enabled, the **rhsmcertd** service automatically uses the best-matched subscriptions.

You can also run an asynchronous autoattach operation. On the local system, this can be done with the Red Hat Subscription Management utilities through the command line interface (CLI). Use the **subscription-manager man** command to view the manual page.

2. STATUS AND NOTIFICATIONS

Red Hat Subscription Management provides two main tools for viewing subscription status and notifications.

- The Red Hat Subscription Manager is run from a local system to show system information.
- The Red Hat Customer Portal provides a web-based interface for your registered subscriptions.

2.1. Red Hat Subscription Manager

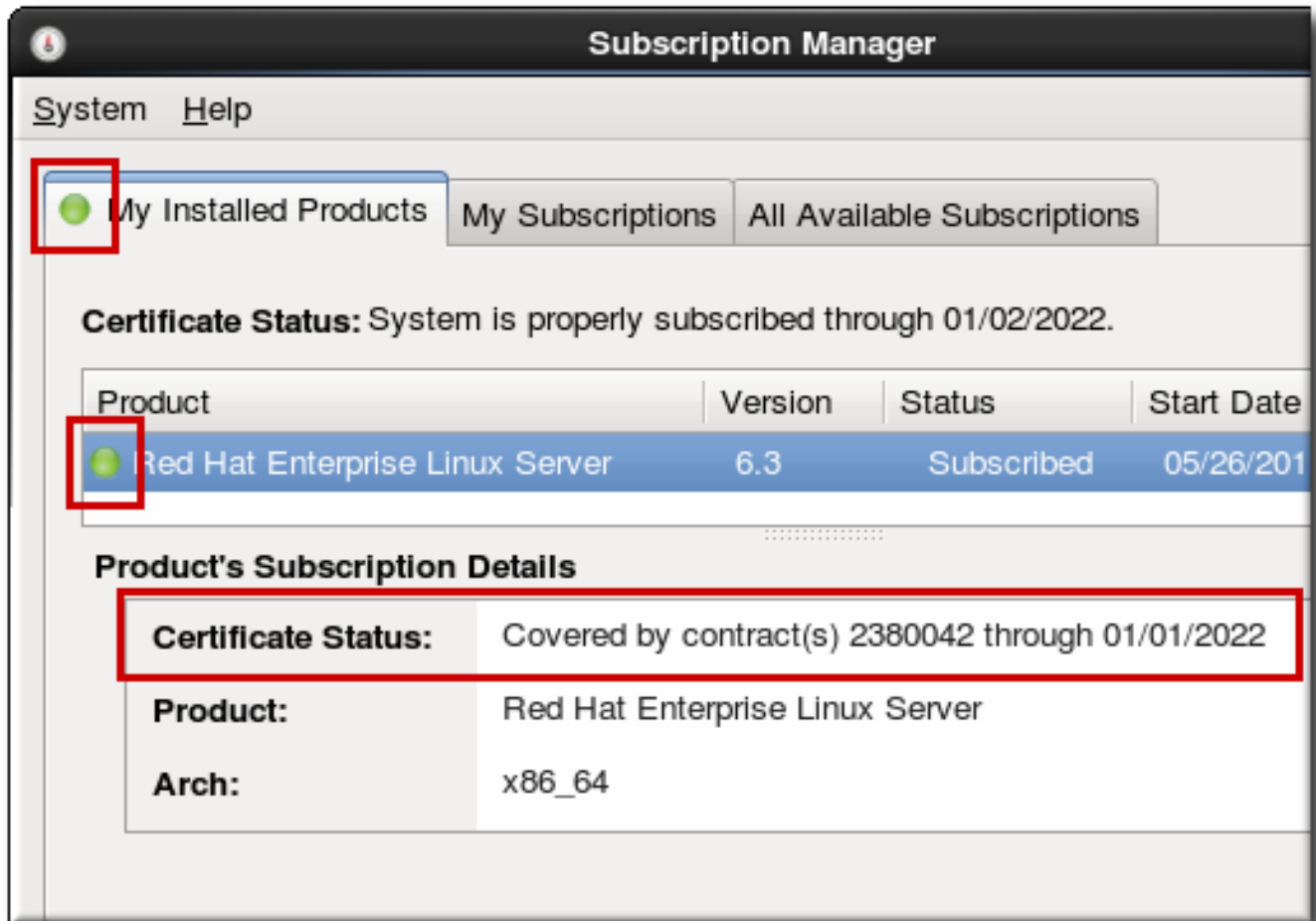
Red Hat Subscription Management provides system-level information about installed products, subscription status of each installed product, and available subscriptions. You can use a CLI to issue Red Hat Subscription Management commands, or you can invoke the Red Hat Subscription Management GUI.

2.1.1. Status

All of the subscription management tools provide log messages and UI messages that indicate changes to the valid subscriptions for the installed products on a system.

Product subscription status is color-coded:

- *green* means all subscriptions are valid for all installed products.
- *yellow* means some products need attention, such as not all required subscriptions are valid but updates are still in effect.
- *red* means that subscription updates are disabled and new subscriptions are required.



The command-line tools also indicate that status of the machine. The green, yellow, and red codes translate to text status messages of *subscribed*, *partially subscribed*, and *expired or not subscribed*.

```
[root@localhost ~]# subscription-manager list
+-----+
  Installed Product Status
+-----+
Product Name:  Red Hat Enterprise Linux Server
Product ID:   69
Version:      7.6
Arch:         x86_64
Status:       Subscribed
Status Details:
Starts:       04/24/2013
Ends:         01/01/2022
```

2.1.2. Notifications for subscription expiration

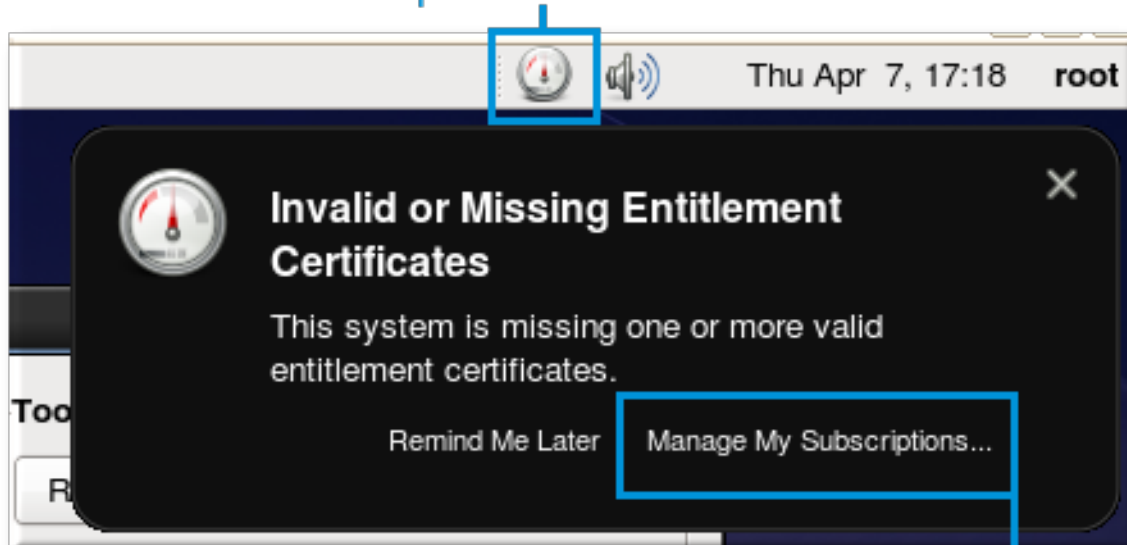
Whenever there is a warning about subscription changes, a notification icon appears in the top menu bar of the Subscription Manager GUI.

subscription notification icon



When an installed product nears its subscription expiration date, the Subscription Manager daemon will display a notification. A similar message is provided when installed products have no a valid subscription certificate, meaning either no subscription is attached that covers the installed product or the installed product is past its subscription expiration date. You can click **Manage My Subscriptions...** in the notification window to open the Red Hat Subscription Manager GUI to view and update subscriptions.

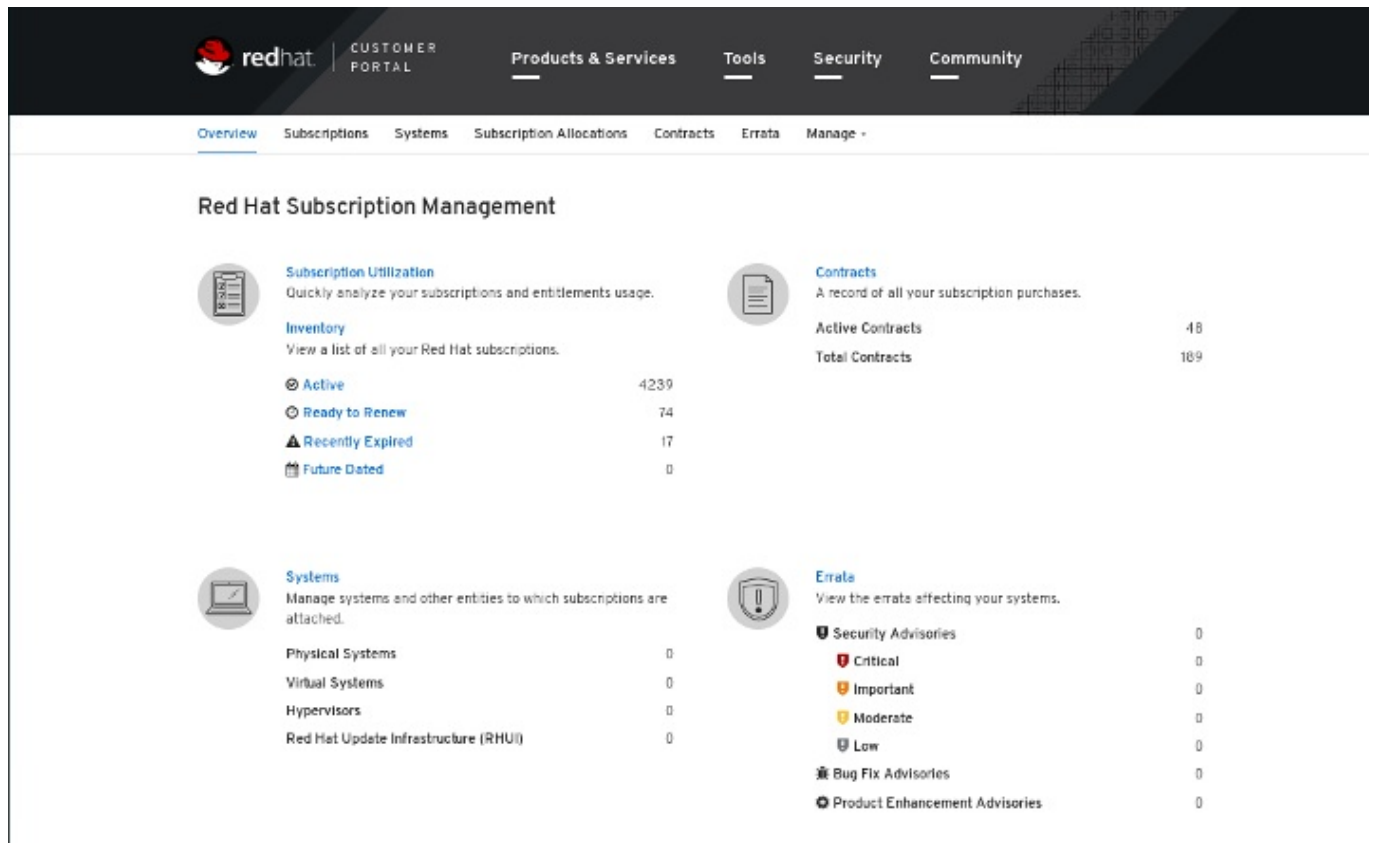
subscription notification icon



launch subscription manager

2.2. Red Hat Customer Portal subscription management

You can view and manage your subscriptions by using the Red Hat Customer Portal and navigating to the **My Subscriptions** link. When you open the My Subscriptions link, you will see the Red Hat Subscription Management page. The **Overview** tab on this page provides a high-level summary of your subscriptions. Additional details are available through the links and tabs on the Red Hat Subscription Management page.



Red Hat Subscription Management

Subscription Utilization
Quickly analyze your subscriptions and entitlements usage.

Inventory
View a list of all your Red Hat subscriptions.

Active	4239
Ready to Renew	74
Recently Expired	17
Future Dated	0

Contracts
A record of all your subscription purchases.

Active Contracts	48
Total Contracts	189

Systems
Manage systems and other entities to which subscriptions are attached.

Physical Systems	0
Virtual Systems	0
Hypervisors	0
Red Hat Update Infrastructure (RHUI)	0

Errata
View the errata affecting your systems.

Security Advisories	0
Critical	0
Important	0
Moderate	0
Low	0
Bug Fix Advisories	0
Product Enhancement Advisories	0

2.2.1. Subscription utilization

The **Subscription Utilization** link on the Red Hat Subscription Management page displays product summary information about all active subscriptions and entitlements usage. You can click on the following subscription status categories to display additional information:

- Active
- Ready to Renew
- Recently Expired
- Future Dated

You can download the information in a CSV spreadsheet format.

Subscription Utilization

Below is a product summary for all active subscriptions and entitlements usage

[Download CSV](#)



CloudForms

Product	Quantity	Entitlement Usage	Next Renewal
CloudForms Employee Subscription	505	95%	2019-05-23
Red Hat CloudForms for Providers	5	98%	2021-12-31

2.2.2. Inventory

The **Inventory** link on the Red Hat Subscription Management page shows all Red Hat subscriptions associated with your account. Useful information includes the following:

- Subscription Number
- Subscription Name (product name)
- Contract Number
- Quantity
- Start Date, End Date, and Status

You can select an inventory view to provide specific views according to the status of your product.

You can download the information in a CSV spreadsheet format.

Return to Subscription Utilization

Inventory

Filter by Subscription (Number, Name, SKU) or Contract Number

Active Ready to Renew Recently Expired Future Dated All [Download CSV](#)

Subscription Number	Subscription Name	Contract Number	Quantity	Start Date	End Date	Status
6079271	30 Day Red Hat Enterprise Linux Server Self-Supported Evaluation	11893118	1	2019-03-25	2019-04-23	Expiring in < 30 days Renew
6082170	30 Day Self-Supported Red Hat OpenShift Container Platform, 2-Core Evaluation	11893973	1	2019-03-26	2019-04-24	Expiring in < 30 days Renew
6028510	90 Day Supported Red Hat Cloud Suite Evaluation	11879068	50	2019-01-30	2019-04-29	Expiring in < 30 days Renew
6033945	60 Day Supported Red Hat Virtualization (2-socket) Evaluation	11880832	1	2019-03-06	2019-05-04	Expiring in < 30 days Renew
6039778	30 Day Self-Supported Red Hat OpenShift Container Platform, 2-Core Evaluation	11882057	1	2019-04-06	2019-05-05	Expiring in < 30 days Renew

2.2.3. Systems

The **Systems** link on the Red Hat Subscription Management page shows all systems associated with your account. Information is displayed for the following types of systems:

- Physical Systems
- Virtual Systems
- Hypervisors

Systems

Below is a list of systems for this account.

Filter by Name, UUID, or Cloud Provider [More Filters](#) [Reset Filters](#) [New](#) [Download CSV](#)

Name	Type	Last Check in	Errata
There are no systems on this account.			

Show 100 entries Showing 0 to 0 of 0 entries [First](#) [Previous](#) [Next](#) [Last](#)

3. RESPONDING TO NOTIFICATIONS AND CHANGED STATUS

3.1. Subscription autoattaching and updates

The Red Hat Enterprise Linux system runs a service, **rhsmcertd**, that monitors the subscriptions that are attached to a system. The **rhsmcertd** service keeps track of subscriptions for installed products and gathers the information that is provided in the Red Hat Subscription Management reports. For example, when an installed product subscription nears its expiration dates, if it is renewed, or if it is removed.

When an installed product has no valid subscriptions, Red Hat Subscription Management automatically attempts to attach the best-matched subscriptions to cover the installed products on the system. Because the attaching is done automatically, no administrator intervention is required. The mechanism is similar to autoattaching the system when it is registered. This automatic process keeps the subscriptions updated in a dynamic environment, such as the following:

- When new products are installed
- When subscriptions expire
- When subscriptions are renewed
- When a subscription management application replaces its manifest

Autoattaching is enabled by default. You can disable and re-enable autoattaching with the **subscription-manager** command or through the subscription service, such as the online Red Hat Subscription Management or Satellite. The **/etc/rhsm/rhsm.conf** file can be modified to change the interval at which the **rhsmcertd** service performs the autoattaching check.

3.1.1. Service levels and operating system versions

When you use Red Hat Subscription Management for subscription updates and autoattaching, you can configure additional information:

- The service level.
- The minor version (X.Y) of the operating system.

3.1.2. Service levels

Included with your subscription contract for installed products is a *service level*. A service level is associated with an installed product on a system and can be different for each product depending on your support requirements.

Red Hat service levels are defined in the product contract. You can view a summary of production support levels at [Production Support Terms of Service](#).

An account can have multiple levels of support available, even for the same product. You can configure the support level for a system for the appropriate level of support is available. For example, a production system might have Premium Level 1 support, whereas a development system might have Standard support (or even Self-support).



NOTE

By default, the highest available level of support is selected for the subscription and system.

3.1.3. Preferred OS versions

Depending on the RHEL release, product subscriptions and updates might depend on a specific major and minor version (X.Y) of the software. You can set system preferences for specific OS versions.

Table 2. Examples of major and minor versions

Major Version	RHEL 6	RHEL 7
Minor Versions	RHEL 6.1	RHEL 7.1
	RHEL 6.3	RHEL 7.5

Because many production IT environments must be certified for a specific version of software, it is important to set the OS release version for updates so that you can maintain compliance with certifications. This allows you to control which updates or patches are allowed on your systems.

Setting a release version preference limits the system access to content repositories associated with that operating system version rather than automatically using the newest or latest version repositories.

For example, if the preferred operating system version is 7.5, then the 7.5 content repositories will be preferred for all installed products and attached subscriptions for the system. This preference is maintained even when other content repositories become available.

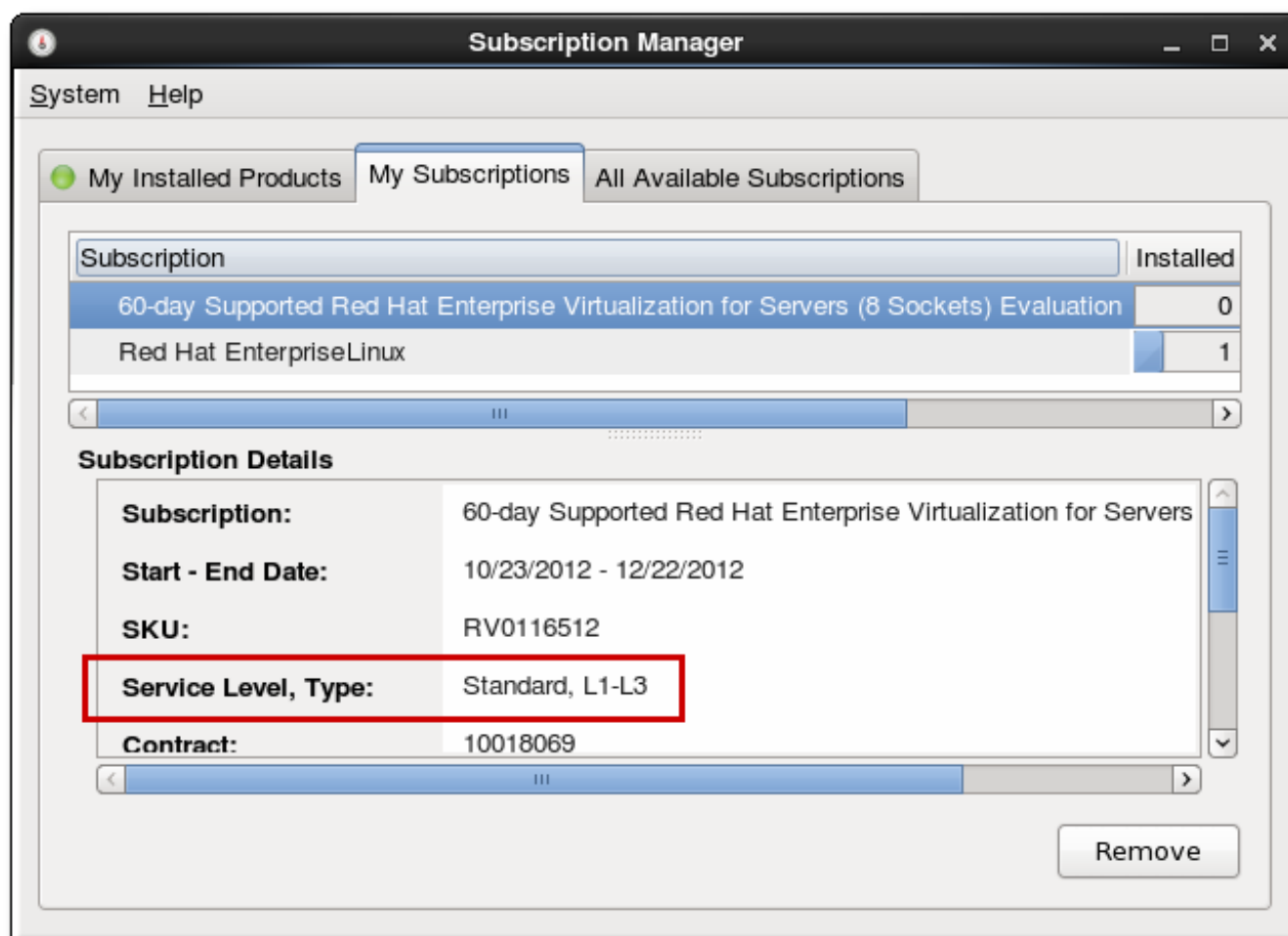
Only packages, updates, and errata for that preferred OS version will be used for the system.

3.1.4. Viewing service levels with Red Hat Subscription Management GUI

When using the Subscription Manager GUI, you can view the service levels for each installed product.

1. Open the Subscription Manager GUI.
2. Click on the **My Subscriptions** tab.
3. Select an installed product from the subscriptions list and click on it.
4. View the subscription details.

Figure 1. Services



3.1.5. Setting service level and OS version preferences with Red Hat Subscription Management GUI

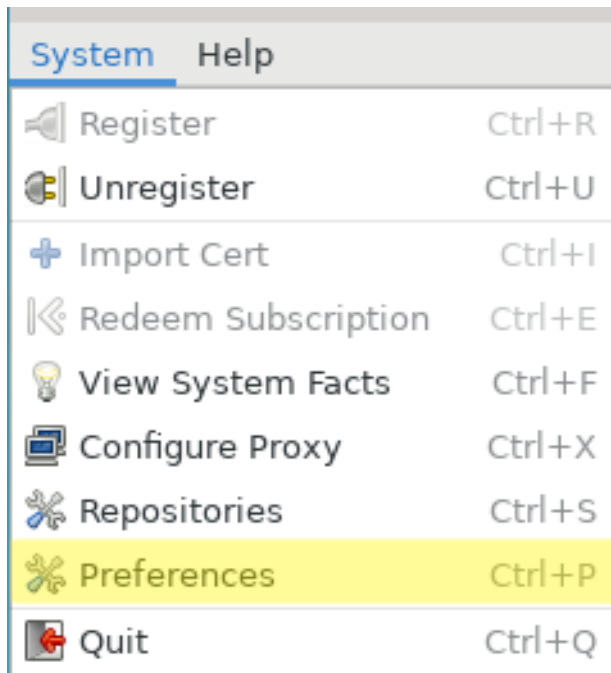
You can set the service level and the OS version for each installed product on a system. This is done through the **System > Preferences** menu in the Subscription Manager.



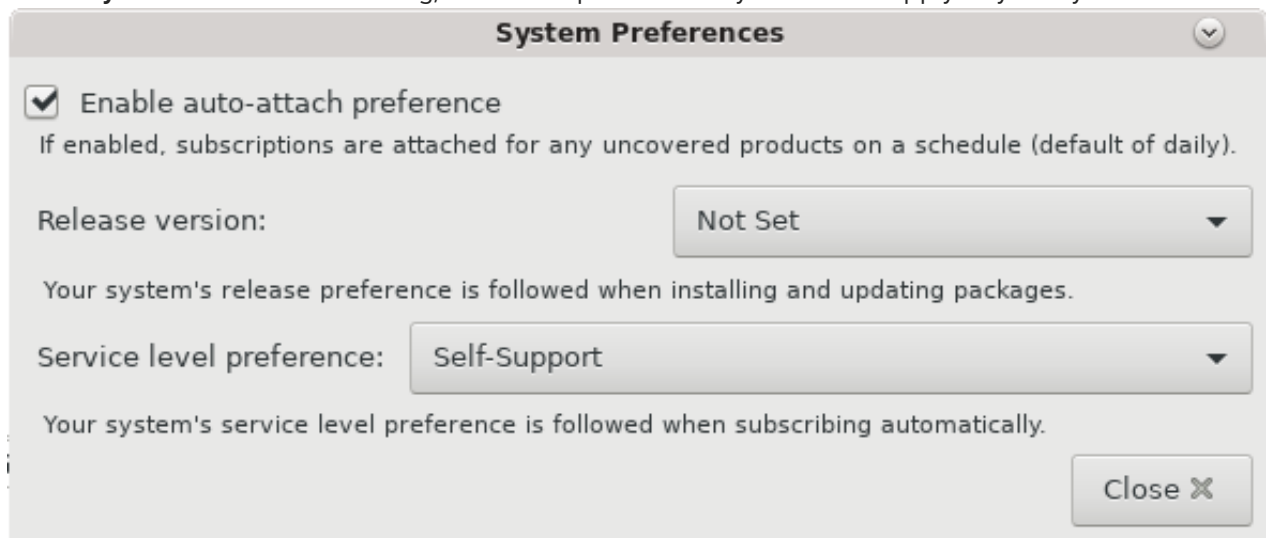
NOTE

When selecting Service Level and OS Release version, the available values are based on your current account and subscription status.

1. Open the Subscription Manager GUI.
2. Select **System > Preferences** or enter the shortcut **Ctrl+P**



3. In the **System Preferences** dialog, select the preferences you want to apply to your system.

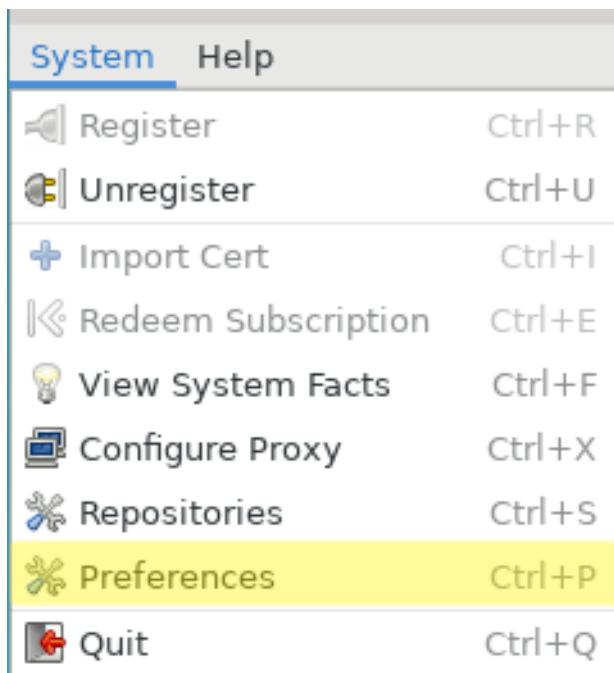


4. Click **Close** to save the preferences.

3.1.6. Removing OS version preferences with Red Hat Subscription Management GUI

You can remove or unset a preference using the Red Hat Subscription Management GUI.

1. Open the Subscription Manager GUI.
2. Select **System > Preferences** or enter the shortcut **Ctrl+P**



3. In the **System Preferences** dialog, choose **Not Set** from the corresponding drop-down menu to remove the preferences for release version or for service level.
4. Click **Close** to save the preferences.

3.1.7. Setting service levels through the command line

When you autoattach a system during registration, you can select a preferred service level for that system. Product subscriptions are selected based on the best match to the preferred service level.

3.1.7.1. Viewing service levels

A system can have multiple service levels available to it. An available level might not be the one in effect for the system or for an installed product on the system. The service level depends on the subscriptions.

You can use the **subscription-manager service-level** command to view the service levels available on your system.

1. You must have root access privilege to use the **subscription-manager service-level** command.
2. Enter the **subscription-manager service-level --list** command to list the available service levels.

```
[root@server ~]# subscription-manager service-level --list
+-----+
      Available Service Levels
+-----+
Standard
None
Premium
Self-Support
```

3. Enter the **subscription-manager service-level --show** command to show the current service level setting for the system.

```
[root#server ~]# subscription-manager service-level --show
Current service level: self-support
```

■

3.1.7.2. Changing the service level

After registration, you can change the preferred service level to another level that is available on the system.

Use the **subscription-manager service-level** command to set the service level preferences for the system. You can select a default service levels for your account and for a local system. The account setting and local system setting need not be the same.

1. You must have root access privilege to use the **subscription-manager service-level** command.
2. Enter the **subscription-manager service-level** command to list the available service levels.

```
[root@server ~]# subscription-manager service-level --list
+-----+
      Available Service Levels
+-----+
Standard
None
Premium
Self-Support
```

3. Enter the **subscription-manager service-level** command to select one of the available service levels. This command sets the service level to **self-support**.

```
[root@server ~]# subscription-manager service-level --set=self-support
Service level set to: self-support
```

4. Confirm the service level.

```
[root#server ~]# subscription-manager service-level --show
Current service level: self-support
```

3.1.7.3. Autoattaching subscriptions with a service level

You can autoattach subscriptions and set the preferred service level with the **subscription-manager attach** command.



NOTE

Refer to the man page entry for the **subscription-manager attach** command for information on using the **--auto** and **--auto-attach** command options.

1. You must have root access privilege to use the **subscription-manager attach** command.
2. To select a service level after registration, enter the **subscription-manager attach --auto** command and select the preferred service level.

```
[root#server ~]# subscription-manager attach --auto --servicelevel Premium
Service level set to: Premium
Installed Product Current Status:
ProductName:      RHEL 6 for Workstations
Status:          Subscribed
```

3.1.7.4. Setting an operating system release during registration

You can set a preference for a release version when the system is registered by using the **--release** option with the **subscription-manager register** command.

1. You must have root access privilege to use the **subscription-manager register** command.
2. When you register a system, apply the release preference to the selected subscriptions that are auto-attached to the system.

```
[root#server ~]# subscription-manager register --auto-attach --release=6.4 --
username=admin@example.com...
```

When you set a release preference you must use the **--auto-attach** option, because it is one of the criteria that selects which subscriptions to autoattach.



NOTE

Unlike setting a service level preference, a release preference can only be used during registration or set as a preference. It cannot be specified with the **attach** command.

3.1.8. Setting an operating system release preference with the command line

You can use the CLI to view, set, and remove the OS version preference.

3.1.8.1. Viewing the OS preferences

Use the **subscription-manager release --list** command to view available OS preferences available on your system.

1. You must have root access privilege to use the **subscription-manager release** commands.
2. Enter the **subscription-manager release --list** command to view available OS version preferences on your system.

```
[root#server ~]# subscription-manager release --list
+-----+
Available Releases
+-----+
7.0
7.1
7.2
7.3
7.4
7.5
7.6
7Server
```

3.1.8.2. Setting the OS preference

Use the **subscription-manager release --set** command to set the preferred OS version on your system.

1. You must have root access privilege to use the **subscription-manager release** commands.

2. Enter the **subscription-manager release --set** command to set the preference to one of the available release versions.

```
[root#server ~]# subscription-manager release --set=7.3
Release version set to: 7.3
```

3.1.8.3. Removing the OS preference with the command line

Use the **subscription-manager release --unset** command to unset the preferred OS version on your system.

1. You must have root access privilege to use the **subscription-manager release** commands.
2. Enter the **subscription-manager release --unset** command to unset the preference of the release version.

```
[root#server ~]# subscription-manager release --unset
Release version set to:
```

3.1.9. Autoattaching in response to Subscription Manager notifications

You can use the Subscription Manager GUI to autoattach subscriptions.

1. Open the Subscription Manager UI.
2. Select the installed product that has an expired subscription.
3. Click **Auto-attach**.

3.1.10. Autoattaching at system registration

You can use the **subscription-manager register** command to register the system to the subscription service and autoattach the installed product subscriptions. This action is typically performed when you register your systems.

1. You must have root access privilege to use the **subscription-manager** command.
2. Enter the **subscription-manager register** command to autoattach the system:

```
[root@server1 ~]# subscription-manager register --username admin-example --password secret -
-auto-attach
```

3.1.11. Autoattaching after registration

You can configure your subscriptions for autoattaching after the initial system registration. Autoattaching after initial registration is useful when you install additional products not included in a default system configuration. Autoattaching after they are installed can make it easier to attach the correct subscriptions.

1. You must have root access privilege to use the **subscription-manager** command.
2. Enter the **subscription-manager** command:

```
[root@server1 ~]# subscription-manager attach --auto
```


3.2. Red Hat Subscription Management Customer Portal subscription updates

The Red Hat Customer Portal provides tools for managing and updating your subscriptions. You can view and manage your subscriptions by using the Red Hat Customer Portal and navigating to the **My Subscriptions** link. When you open the My Subscriptions link, you will see the Red Hat Subscription Management page. The **Overview** tab on this page provides a high-level summary of your subscriptions. Additional details are available through the links and tabs on the Red Hat Subscription Management page.

3.2.1. Preferred service level support

Included with your subscription contract for installed products is a *service level*. A service level is associated with an installed product on a system and can be different for each product depending on your support requirements.

Red Hat service levels are defined in the product contract. You can view a summary of production support levels at [Production Support Terms of Service](#).

An account can have multiple levels of support available, even for the same product. You can configure the support level for a system for the appropriate level of support is available. For example, a production system might have Premium Level 1 support, whereas a development system might have Standard support (or even Self-support).



NOTE

By default, the highest available level of support is selected for the subscription and system.

When you register your system, you can assign a preferred service level. When subscriptions are autoattached to the system and the preferred service level is available, the subscription matching that preferred service level is used.



NOTE

You must initially set the service-level preferences locally on the client system when it is registered, by autoattaching, or by updating the preferences. This action is done through the CLI. The example shows a Premium service level:

```
[root#server ~]# subscription-manager attach --auto --servicelevel Premium
```

After you set the service-level preference for the system, that preference can be viewed and edited through Red Hat Subscription Management on the Customer Portal.

After performing the initial system configuration, you can view service-level preferences on the System details page of the [Red Hat Subscription Management Customer Portal](#).

3.2.2. Viewing the operating system release preference

Because many production IT environments must be certified for a specific version of software, it is important to set the OS release version for updates so that you can maintain compliance with certifications. This allows you to control which updates or patches are allowed on your systems.

Setting a release version preference limits the system access to content repositories associated with that operating system version rather than automatically using the newest or latest version repositories.

For example, if the preferred operating system version is 7.5, then the 7.5 content repositories will be preferred for all installed products and attached subscriptions for the system. This preference is maintained even when other content repositories become available.

Only packages, updates, and errata for that preferred OS version will be used for the system.

You can specify a release-version preference using the Red Hat Subscription Management tools on the Customer Portal, the subscription manager GUI or the **subscription-manager** CLI. After you set a release preference on the local system, you can view that preference in the Red Hat Subscription Management Customer Portal.

3.2.3. Autoattaching subscriptions

The subscription service can monitor the subscriptions that are attached to a system and track when they near their expiration dates. Within 24 hours of when the subscription expires, the Subscription Manager automatically re-attaches the system to a new, matching subscription so that the subscription status remains valid.

Autoattaching prevents a system from having expired products as long as any active, compatible subscription is available for it.


3.2.4. Enabling autoattach on a system

Autoattaching is enabled by default on systems to ensure that they maintain their subscription status. Autoattaching can be disabled and re-enabled by toggling **Disable/Enable** on the system details page.

Figure 2. Toggling autoattaching

Details
Subscriptions
Errata
Enabled Modules

Basic Information

Name	localhost.localdomain	
Type	Virtual System	
UUID	d6c764ed-bb3a-4c55-a4eb-3093d644a1d4	

Subscriptions

Subscription Management	● Properly Subscribed <p>All installed products are covered by attached subscriptions. Updates can be received through April 09, 2020 00:00.</p>
Subscriptions Attached	1
Auto-Attach	<input type="text" value="Enabled"/>
Operating System Release Preference	Not Set

3.2.5. Subscriptions and over-allocations

When you use Red Hat Subscription Management through the Customer Portal, you can view information about subscriptions, subscription entitlement, and attached or allocated subscriptions for your purchases. It is your responsibility to manage the subscriptions and how they are attached.



WARNING

Compliance with industry standards often requires appropriate licenses for all software that is installed in an IT infrastructure. If more subscriptions are in use than are entitled, this situation can potentially violate your service contract and cause your installation to be out of compliance.

3.2.6. Viewing subscription utilization

You can review your subscription utilization from the Red Hat Customer Portal.

1. Log in to your account on [Red Hat Customer Portal](#).
2. Click on **My Subscriptions**, which will take you to the Red Hat Subscription Management page.
3. Click on **Subscription Utilization**. A summary of all products and subscriptions is displayed.
4. Click on a specific product name to display additional details about the subscription status and entitlement utilization.

3.2.7. Viewing system utilization

There is no automatic remediation for oversubscriptions and Red Hat does offer guidance about which systems or subscriptions you should change in order to remediate an oversubscription.

You can view system utilization of subscriptions Red Hat Customer Portal.

1. Log in to your account on [Red Hat Customer Portal](#).
2. Click on **My Subscriptions**, which will take you to the Red Hat Subscription Management page.
3. Click on **Systems**, which will list all the systems that you can view from your account login.
4. Click on a system name in the **Name** list to display details about that system and its subscription utilization.

Clicking the name of any system opens up its details page, so that you can change the subscriptions for it.



NOTE

You must have the appropriate permissions to view information on the **Systems** page. You can only view systems to which you have access, which might not include all systems associated with the account.

4. MANAGING ERRATA NOTIFICATIONS

4.1. Red Hat Subscription Management Errata notifications for registered systems

Errata notifications are issued when there is a bug fix or a software update. Through your Red Hat portal profile, you can select notifications at the system level or at the subscription level. The recommended notification is for all systems on your account, which is the system-level notification.

At the system level, errata notification emails are sent to the user accounts for all registered systems that have attached subscriptions for installed products. Systems that have attached subscriptions for a product, but do not have that product installed, do not receive a notification.

For subscription-level notifications, you receive notifications only for subscriptions registered to your account. The individual systems are not listed in the errata notification, even though all registered systems are checked.

4.2. Configuring errata notifications

You can configure errata notifications through your account details on the Red Hat Customer Portal. The details information is where you set up contact information for the logged in account.

1. Login to your Red Hat account at <https://access.redhat.com/>
2. In the upper right corner of the Customer Portal, click your account name to expand the account information for the logged in user.
3. Click **Account Details**.
4. Click **Errata Notifications**.
5. Under **RED HAT SUBSCRIPTION MANAGEMENT**, make your selections. Remember that systems notification is the recommended setting.
6. Click **Save**.

4.3. Red Hat Subscription Management package profiles for the local system

A *package profile* is the list of installed packages on a system, regardless of its subscription status. Once a system is registered, the **rhsmcertd** service polls the system to determine what products are installed. That information is forwarded to the subscription service. The package profile is an integral part of managing updates, system notifications, and errata notifications.

Red Hat Subscription Management maintains a local list of installed packages to track the subscription status of the system. The package profile contains some general information about each installed product, such as the product name, ID, and version.

All information about currently installed packages is collected by the **rhsmcertd** service and sent to the registering subscription service, along with the user account information.

See [Subscription utilization](#) for information on how to show profile package and subscription information.

A. REVISION HISTORY

Table A.1. Revision History

Revision	Date	Changes Made	Author
Revision 1.4-0	June 2019	Content updated for RHEL 7. Subscription Asset Manager (SAM) and Red Hat Network (RHN) information removed.	Spank McCoy
Revision 1.3-7	April 13, 2014	Updated the instance-based and virtual setup sections.	Ella Deon Ballard
Revision 1.3-4	October 1, 2013	New content and reorganization for the SAM 1.3 release	Deon Ballard