



# Patch Management

Getting Started Guide

January 12, 2023

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## About this Guide

Welcome to Qualys Patch Management! We'll help you get acquainted with the Qualys solutions for patching your systems using the Qualys Cloud Security Platform.

### About Qualys

Qualys, Inc. (NASDAQ: QLYS) is a pioneer and leading provider of cloud-based security and compliance solutions. The Qualys Cloud Platform and its integrated apps help businesses simplify security operations and lower the cost of compliance by delivering critical security intelligence on demand and automating the full spectrum of auditing, compliance and protection for IT systems and web applications.

Founded in 1999, Qualys has established strategic partnerships with leading managed service providers and consulting organizations including Accenture, BT, Cognizant Technology Solutions, Deutsche Telekom, Fujitsu, HCL, HP Enterprise, IBM, Infosys, NTT, Optiv, SecureWorks, Tata Communications, Verizon and Wipro. The company is also founding member of the [Cloud Security Alliance \(CSA\)](#). For more information, please visit [www.qualys.com](http://www.qualys.com)

### Qualys Support

Qualys is committed to providing you with the most thorough support. Through online documentation, telephone help, and direct email support, Qualys ensures that your questions will be answered in the fastest time possible. We support you 7 days a week, 24 hours a day. Access online support information at [www.qualys.com/support/](http://www.qualys.com/support/).

# Patch Management Overview

Qualys Patch Management provides a comprehensive solution to manage vulnerabilities in your system and deploy patches to secure these vulnerabilities as well as keep your assets upgraded. The Qualys Vulnerability Management, Detection, and Response (VM DR) module enables you to discover, assess, prioritize, and identify patches for critical vulnerabilities. The Patch Management module helps you save time and effort by automating patch management on Windows and Linux assets using a single patch management application. It provides instant visibility on patches available for your asset and allows you to automatically deploy new patches as and when they are available.

The Windows Cloud Agent downloads the required patches from external sources. However, patches that require authentication cannot be downloaded by the agent. You can manually download and install such patches on the assets. Qualys Patch Management will then identify these patches as installed. The Linux Cloud Agent access the patches from the YUM repository and deploys the patches to the Linux assets in Patch Management.

**Note:** Qualys Patch Management 1.5 supports Linux assets for Patch Management.

## Qualys Subscription and Modules required

You would require Patch Management (PM) module enabled for your account.

## System support

Patch Management supports installing patches on Windows and \*Linux systems.

**Note:** \* Currently, you can deploy patch jobs only on Linux assets for RHEL version 6, 7, 8, CentOS 6 and 7, Oracle Linux 6, 7, 8, Amazon Linux, and Amazon Linux 2.

## Patch Management Process Workflow

Follow these steps to get started with Patch Management.



## Agent Installation and Configuration

[Installing Cloud Agents on Assets](#)

[Enabling PM in a CA configuration profile](#)

[User Roles and Permissions for Patch Management](#)

## Deploy Patches

[Creating Assessment Profiles for Windows Assets](#)

[Reviewing Missing and Installed Windows Patches](#)

[Deploying Patches Jobs on Windows Assets](#)

[Deploying Patches Jobs on Linux Assets](#)

[Reviewing Job Results](#)

## **Rollback Windows Patches**

[Creating Assessment Profiles for Windows Assets](#)

[Reviewing Missing and Installed Windows Patches](#)

[Rolling Back Patches from Windows Assets](#)

[Reviewing Job Results](#)

## **Patch Management features**

Qualys Patch Management provides a comprehensive solution for patching assets with the following features:

- Deploy patches for Windows and Linux assets
- Schedule run-once or recurring jobs for Windows and Linux assets
- Clone and edit Windows and Linux jobs
- View patches, assets, and job details for Windows and Linux systems
- Review missing and installed patches for Windows assets
- Download Windows patches from the vendor site
- Create custom Assessment Profile for Windows assets
- Use QQL to automate patch selection for Windows deployment job
- Export patch data for Windows assets
- Roll back patches from Window assets
- Create custom dashboards and widgets for Windows assets

## **User Roles and Permissions for Patch Management**

Role-Based Access Control (RBAC) gives you the flexibility to control access to Patch Management features based on the roles of the individual users.

Each user is assigned a pre-defined user role which determines what actions the user can take. These roles are exclusive to the Patch Management module only. The roles defined in other modules have NO correlation with that defined in Patch Management.

We have the following five out-of-the-box (OOTB) roles for PM users. Each role, except Patch Security, is an incremental role to the previous one. Let's understand the user roles and permissions.

Roles	Description
<b>Patch Reader</b>	Default role that allows users to view: <ul style="list-style-type: none"><li>- Assigned jobs</li><li>- Assessment profiles</li><li>- Dashboards</li></ul>
<b>Patch Dashboard Author</b>	<ul style="list-style-type: none"><li>- Includes the Patch Reader permissions</li><li>- Allows a user to develop dashboards</li><li>- Does not allow the user to manage patching jobs</li></ul>
<b>Patch User</b>	<ul style="list-style-type: none"><li>- Includes the Patch Dashboard Author permissions</li><li>- Allows users to manage patching activities</li><li>- Build dashboards for reporting information</li></ul>
<b>Patch Manager</b>	<ul style="list-style-type: none"><li>- Includes all permissions except create job advisory</li></ul>
<b>Patch Security</b>	<ul style="list-style-type: none"><li>- This role is mutually exclusive from the other roles.</li><li>- Meant for Security experts or Security operations (SecOps)</li><li>- Allows the user to select patches and create a partially configured job which needs to be assigned to a Patch User or Patch Manager to add a job owner</li><li>- Cannot edit any job</li></ul>

**Note:** We do not recommend that you create custom roles for the Patch Management users by assigning or removing permissions available through the default roles. Such customization of roles or change of permissions might cause the user roles to not work as per the design.

For Patch Management, we refer to the Global Dashboard Permissions to determine what operations a user can perform on the Unified Dashboard. The Global Dashboard Permissions will only allow the Patch Manager, Patch User, and Patch Dashboard Author to create, edit, and delete their own dashboards. For permissions to edit, delete other users' dashboard and print or download a dashboard, contact SuperUser or Administrator.

## Fallback to free version

Patch Management will revert to the Free version after your Trial or Full subscription expires. Existing scan intervals of less than 24 hours will get converted to intervals of 24 hours. Your existing jobs will be disabled and you can re-enable them once you renew your subscription.

The free version allows you to create assessment profiles with a minimum scan interval of 24 hours and see a list of missing and installed patches on the assets in your environment. It doesn't allow creating deployment/rollback jobs.



# Installing Cloud Agents on Assets

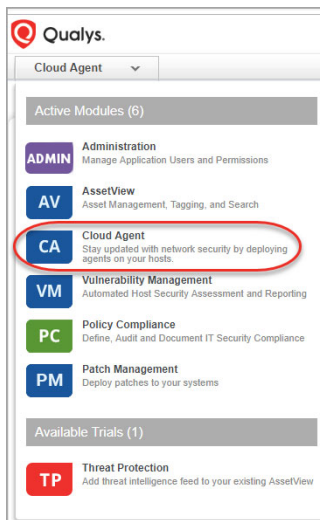
Patch Management allows you to manage your Windows and Linux assets. You must install and configure Cloud Agents to enable Patch Management to deploy patches jobs.

Agent installations are managed on the Cloud Agent (CA) app.

## Let's get started!

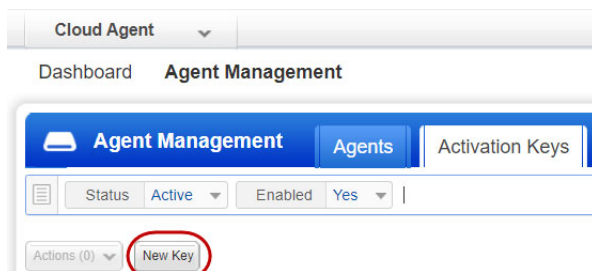
Choose CA (Cloud Agent) from the app picker.

As a first time user, you'll land directly on the Getting Started page.



## What are the steps?

Create an activation key. Go to Activation Keys, click the **New Key** button. Give it a title, provision for the PM application and click **Generate**.



As you can see, you can provision the same key for any of the other applications in your account.

**New Activation Key** Turn help tips: On | Off

Create a new activation key

An activation key is used to install agents. This provides a way to group agents and better manage your account. By default this key is unlimited - it allows you to add any number of agents at any time.

Title:  Select | Create

(no tags selected)

**Provision Key for these applications**

- VM** Vulnerability Management 10 Licenses Remaining
- PC** Policy Compliance 10 Licenses Remaining
- PM** Patch Management 1 Licenses Remaining

**Select the Network**

Set limits

## Downloading Installer

Click **Install instructions** next to **Windows (.exe)** or **Linux (.rpm)**.

**New Activation Key** Turn help tips: On | Off

New activation key generated successfully

**Installation Requirements**

	Windows (.exe)	x86-32/64	Microsoft Windows Client Microsoft Windows Server	<b>Install instructions</b>
	Windows (.exe)	ARM64	Microsoft Windows Client Microsoft Windows Server	Install instructions
	Linux (.rpm)	x64	Red Hat Enterprise Linux CentOS Fedora OpenSUSE SUSE Enterprise Linux Amazon Linux Oracle Enterprise Linux	<b>Install instructions</b>
	Linux (.rpm)	ARM64	Red Hat Enterprise Linux CentOS Amazon Linux	Install instructions
	Linux (.deb)	x64	Debian Ubuntu	Install instructions

Close

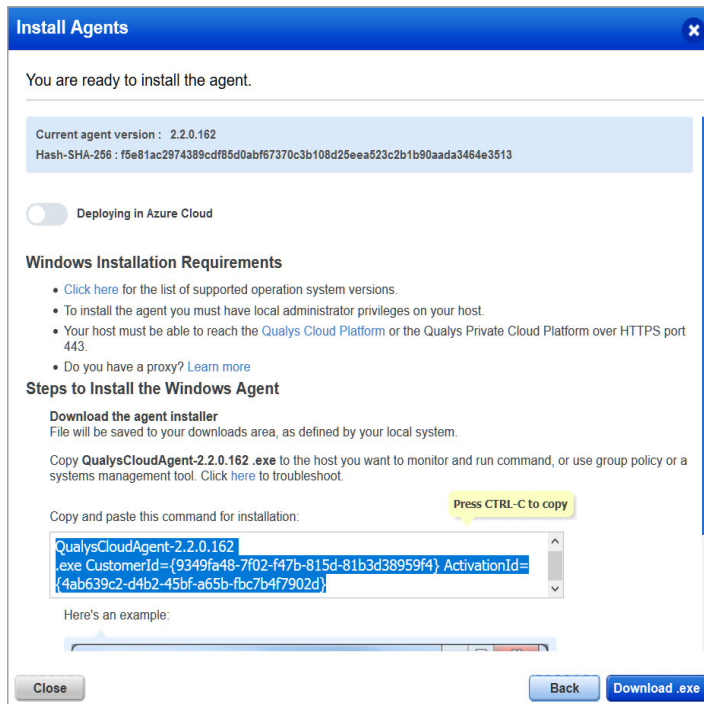
Click here for Windows

Click here for Linux

Review the installation requirements and click **Download**.

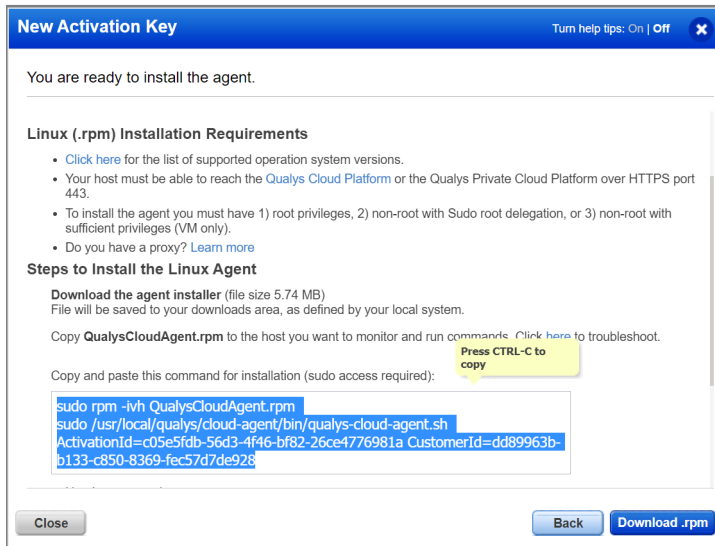
You'll run the installer on each system from an elevated command prompt, or use a systems management tool or Windows group policy. Your agents should start connecting to our cloud platform

For Windows agent:



For Linux agent, to enable patch installation on Linux assets, note the following:

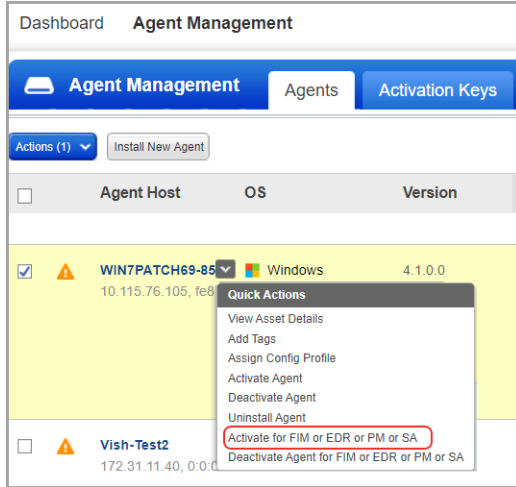
- Supported YUM file version 3.2.29.
- YUM file must be configured with debugloglevel >= 2 Default is 2.
- (Optional) The YUM file is configured with correct proxy settings.
- The endpoint is subscribed for active Red Hat subscriptions.
- The Agent must be running with root user or as sudo user. You can configure users by using the Agent configuration tool.



Your host must be able to reach your Qualys Cloud Platform (or the Qualys Private Cloud Platform) over HTTPS port 443. On the Qualys Cloud Platform, go to Help > About to see the URL your host needs to access. For more information about connectivity requirements/proxy settings refer to the platform specific Cloud Agent Installation Guides available on <https://www.qualys.com/documentation/>.

**Note:** Ensure that you add the required URLs to the allowlist to allow the Cloud Agent to download the Windows patches on your host. [Click here](#) to view the list of URLs.

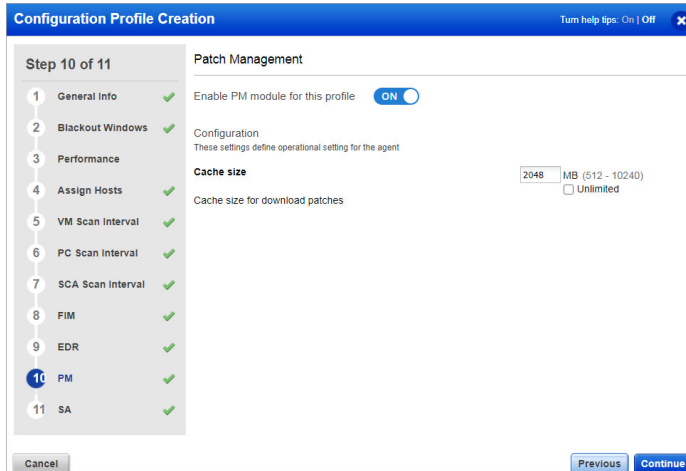
## Activating your agents for PM



Go to the **Agents** tab, and from the **Quick Actions** menu of an agent, click **Activate for FIM or EDR or PM or SA**. (Bulk activation is supported using the **Actions** menu).

## Enabling PM in a CA configuration profile

You can create a new profile or edit an existing one. The PM module is enabled by default.



The **Cache size** setting determines how much space the agent should allocate to store downloaded patches on the asset. The default allocated size is 2048 MB. If you are planning on using the opportunistic download, where an agent downloads patches before deployment, it is recommended to increase the cache size, or to allow for Unlimited Cache size. Note that the agent will clear the cached files after deployment.

## Managing PM Licenses

The Licenses tab, enabled only for paid subscribers, shows the number of licenses consumed by Patch Management (PM). You can include asset tags to allow patch installing and rolling back on the assets contained in those asset tags. The Total Consumption counter may exceed 100% if the number of assets activated for PM are more than the number of PM licenses you have. Assets in the excluded asset tags are not considered for patch management and you cannot deploy patches on those assets.

**Note:** In case the Total Consumption counter exceeds 100%, licenses will be consumed based on the asset activation time stamp in ascending order.

Only admin and super users can manage licenses. Sub-users can only view the license information.

The screenshot shows the 'Patch Management' configuration page, specifically the 'Licenses' tab. The page is titled 'Patch Management' and has a navigation bar with 'DASHBOARD', 'PATCHES', 'ASSETS', 'JOBS', and 'CONFIGURATION'. The 'CONFIGURATION' section is active, with sub-tabs for 'Profile' and 'Licenses'. The main content area is titled 'License Consumption' and includes a 'Patch Management' card with details: Type: FULL, Expiring in: 260 days on 29 Oct, 2020 05:29 AM, Status: Active, and a 'Total Consumption' bar showing 3 of 5 licenses used (100%). Below this is a 'License Details' section showing 5 Licenses Purchased and 3 Licenses Used. The 'Select assets for patch management' section allows including or excluding asset tags. Under 'Include Assets Tags', 'LicensedTag | Depth0' is selected. Under 'Exclude Assets Tags', 'UnlicensedTag' is selected. The page ends with 'Reset' and 'Save' buttons.

You must add tags to include assets that need to be licensed. You can apply patches to the licensed assets only.

### You're ready!

Select PM from the application picker and then create a deployment job to start installing patches on your assets.

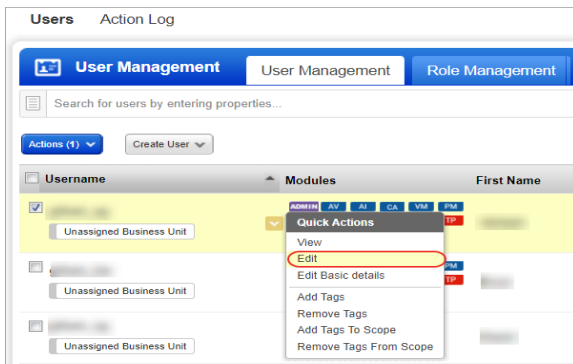
# Using Tags to Grant Access to Assets

An asset tag is a tag assigned to one or more assets. Tag scopes define what assets the user can view when creating a job or when user go to **Assets** tab in patch management.

Assigning a tag to an asset enables you to grant users access to that asset by assigning the same tag to the users scope. Want to define tags? It's easy - just go to the **Asset Management (AM)** application.

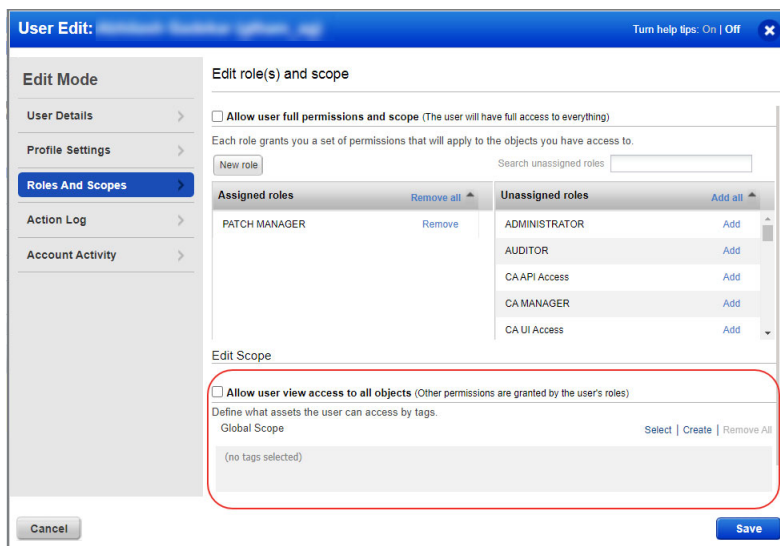
To assign asset tags to the user,

- 1) Go to the **Administration** module and then from the **User Management** tab search or select the user.
- 2) From the **Quick Actions** menu, click **Edit**.



- 3) On the User Edit screen, go to the **Roles and Scopes** tab.

- 4) In the Edit Scope section, select one or more asset tags that you want to assign to the user. Then click **Save**.







# Creating Assessment Profiles for Windows Assets

You can create custom assessment profiles to add assets with specific tags and configure scan interval at which you want the cloud agent to collect patch information from the assets. This is an optional step.

By default, your cloud agents scan for patches (missing and installed) at a specific interval, as defined in the default Assessment Profile.

For Linux jobs, the patch scan is currently not supported and the installed and missing patches information is also not collected. Because of this reason, the assessment profiles are not applicable for Linux assets.

## What is the default assessment profile?

At first, a default assessment profile is applied to all agents, which scans the assets at an interval of 24 hours for free subscription and 4 hours for trial/paid subscription.

## Adding a custom assessment profile

Simply go to **Configuration > Create Profile**, provide a profile name, select asset tags to apply this custom profile to, and then select the scan interval (minimum 24 hours for free subscription and 4 hours for trial/paid subscription). Multiple assessment profiles can be created with different intervals.

**Note:** Only admin users can create/modify/delete the assessment profiles. Non-admin users can only view assessment profiles.

Scan interval of less than 24 hours will be automatically changed to an interval of 24 hours, when a Paid or Trial subscription expires and the app gets converted into a free version.

**Good to Know** - Asset tags once applied to one custom profile, cannot be applied to another custom profile. When you select an asset tag, corresponding child tags are automatically selected. Assets falling under more than one profile because of different tags will be assigned the default assessment profile.

The screenshot shows the 'Create: Assessment Profile' interface in Qualys Express. The 'Assessment Schedule' section is active, with the instruction: 'Define the interval at which you want the cloud agent to collect patch information from the assets associated with this profile. This is synchronized with agent behavior.' The 'Scan every' input field is set to '24' hours. The sidebar on the left shows the progress: 1 Basic Information, 2 Assets, and 3 Schedule. At the bottom, there are 'Cancel', 'Previous', and 'Save' buttons.

# Reviewing Missing and Installed Windows Patches

The patch list under Patch Management patch catalog for Windows assets are the ones missing on the host which were detected using the Patch Management scan. You can view missing and installed patches on the **Patches** and **Assets** tab. The **Patches** tab show a key icon for patches that cannot be downloaded via the Qualys Cloud Agent. A key shaped icon indicates that the patch must be acquired from the vendor.

On the **Patches** tab, we list two types of patches:

- 1) Qualys Patchable
- 2) AcquireFromVendor

## Qualys Patchable

Qualys Patchable are the patches that can be installed using Patch Management. Most of the patches listed on the Patches tab are Qualys Patchable.

## AcquireFromVendor

We have certain patches which are listed under **Patches** tab but cannot be installed using Patch Management. These patch are marked as “AcquireFromVendor” which means you need to manually download the patch from vendor website and install them on the host. See [Downloading Patches from the Vendor Site](#).

Patches which are not marked as “AcquireFromVendor” are defined as “Qualys Patchable” which mean they can be added to a patch job.

PATCH TITLE	ARCHIT	BULLETIN / KB	TYPE	QID	VENDOR SEVERITY	PATCH STATUS	
						MISSING	INSTALLED
<b>Node.JS 10.15.3 (LTS Up...</b> Published on Mar 06, 2019	X86	NOJSLU-007 QNODEJSLU10153	Application	371533	None	0	0
<b>Office 365 Monthly Chann...</b> Published on Mar 05, 2019	X64,X...	MSNS19-0304-0365 KB1132820146	Application	110325 <a href="#">28 more...</a>	None	0	0
<b>Blue Jeans 10.11.249.0</b> Published on Mar 05, 2019	X64,X...	JEANS-014 QB.JN2112490	Application	—	None	0	0
<b>March 5, 2019, update for...</b> Published on Mar 05, 2019	X86	MSNS19-03-4461626 KB4461626	Application	—	Critical	0	0
<b>March 5, 2019, update for...</b> Published on Mar 05, 2019	X86	MSNS19-03-4461439 KB4461439	Application	—	Critical	0	0
<b>March 5, 2019, update for...</b> Published on Mar 05, 2019	X64	MSNS19-03-4461439 KB4461439	Application	—	Critical	0	0

Default or custom assessment profile scans the assets for missing and installed patches at regular intervals. This information is then displayed on the **Patches** tab in the form of missing or installed patches.

Note that patches are linked to QIDs using CVE IDs. The QID for a patch is not shown if the QID is not linked to a CVE ID. CVE ID is the common point of linking and required to link the patch with the QID.

**Patch Management** | DASHBOARD | **PATCHES** | ASSETS | JOBS | CONFIGURATION

**Patch Catalog** | Windows | Linux

15 Total Patches

agentId: "47a9921f-c0e2-4663-9c31-a109dfaf2bf8" and patchStatus: "Missing"

1 - 15 of 15

PATCH TITLE	ARCHIT	BULLETIN / KB	TYPE	QID	VENDOR SEVERITY	PATCH STATUS	
						MISSING	INSTALLED
<b>The Microsoft Windows ...</b> Published on Feb 12, 2019	X64	MSRT19-02 KB890830	OS	-	Critical	2	1
<b>Security Update for Adob...</b> Published on Feb 12, 2019	X64	MS19-02-AFP-4487038 KB4487038	OS	371320 <a href="#">17 more...</a>	Critical	1	0
<b>Servicing stack update fo...</b> Published on Feb 12, 2019	X64	MS19-02-SSU-4485449 KB4485449	OS	91482	Critical	1	0
<b>Notepad++ 7.6.3</b> Published on Jan 28, 2019	X64	NPPPP-088 QNPPPP763	Application	-	None	4	1
<b>KB4100347: Intel microco...</b> Published on Jan 08, 2019	X64	MSNS19-01-4100347_V4 KB4100347	OS	-	None	1	0
<b>Security update for Adobe...</b> Published on Jan 08, 2019	X64	MS19-01-AFP-4480979 KB4480979	OS	371320 <a href="#">15 more...</a>	None	1	0

Alternatively, you can go to the **Assets** tab to view missing and installed patches on particular assets.

**Patch Management** | DASHBOARD | PATCHES | **ASSETS** | JOBS | CONFIGURATION

**Assets** | Windows | Linux

4 Total Assets

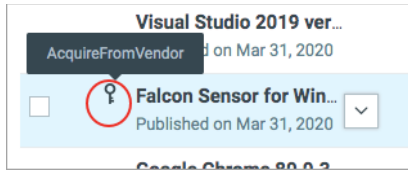
Search for assets...

1 - 4 of 4

STATUS	ASSET NAME	OS	LAST USER	PATCHES		TAGS
				MISSING	INSTALLED	
Pending Apr 15, 2019	<b>FIMTEST111333</b> 10.115.78.231	Microsoft Windows 10 Pro 10...	.Administrat...	0	0	Cloud Agent
Scanned May 16, 2019	<b>WIN12R2-97-150</b> 10.115.97.150	Microsoft Windows Server 201...	Administrator	68	1	Cloud Agent <a href="#">1 more...</a>
Scanned May 16, 2019	<b>WIN7PATCH69-85</b> fe80:0:0:4912:2c20:9e...	Microsoft Windows 7 Professi...	.Administrat...	24	223	Cloud Agent <a href="#">8 more...</a>
Scanned May 16, 2019	<b>WIN12R2-97-149</b> 10.115.97.149	Microsoft Windows Server 201...	Administrator	68	1	Cloud Agent <a href="#">2 more...</a>

## Downloading Patches from the Vendor Site

The Patches tab show a key icon for patches that can not be downloaded via the Qualys Cloud Security Agent. This “key” shaped icon indicates that the patch must be acquired from the vendor.

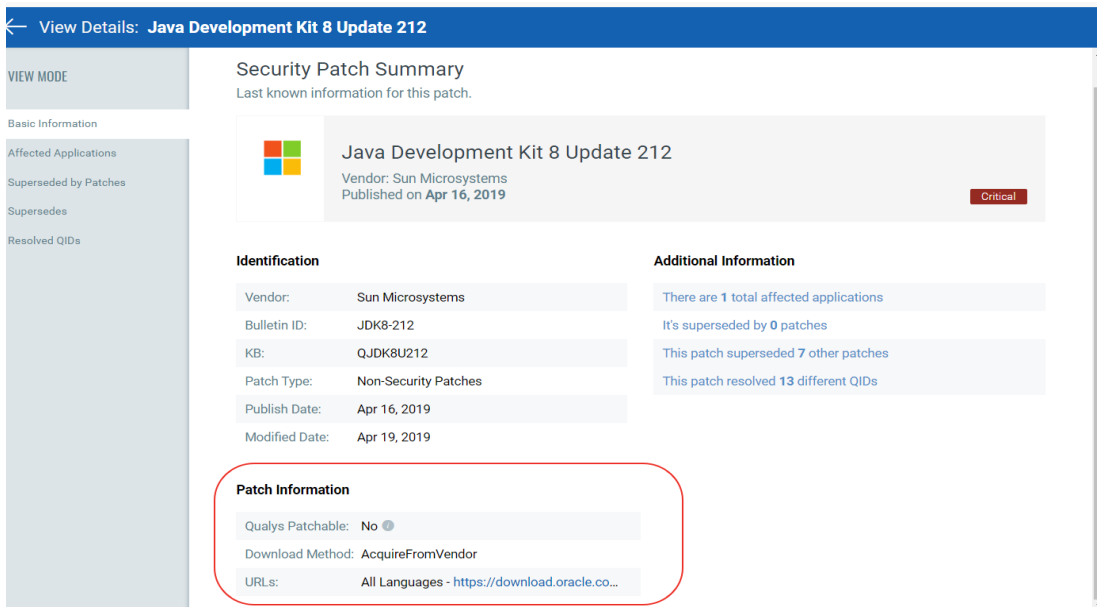


If you try to add such a patch to a patch job, then the system will show a message informing you that these patches will be not be added to said job as they are no longer supported for download via the Cloud Agent.

For such patches, the patch details page displays the Download Method as “AcquireFromVendor” and known patch URL in the Patch Information section. Use the URL to download the patch.

Download methods for patch are:

- Automatic - Patch downloadable using the Cloud Agent (Qualys Patchable: Yes)
- AcquireFromVendor - Patch must be acquired from the vendor and installed manually (Qualys Patchable: No)
- Unavailable - Patch download information is not available (Qualys Patchable: No)



# Deploying Patches Jobs on Windows Assets

You can create a deployment job to install missing patches on assets. You have three options to create the deployment job from the following tabs:

- 1) **Jobs**
- 2) **Assets**
- 3) **Patches**

Refer to the Managing Patch Jobs for Windows Assets topic in the online help.

You can check the workflow to deploy jobs on Windows assets.

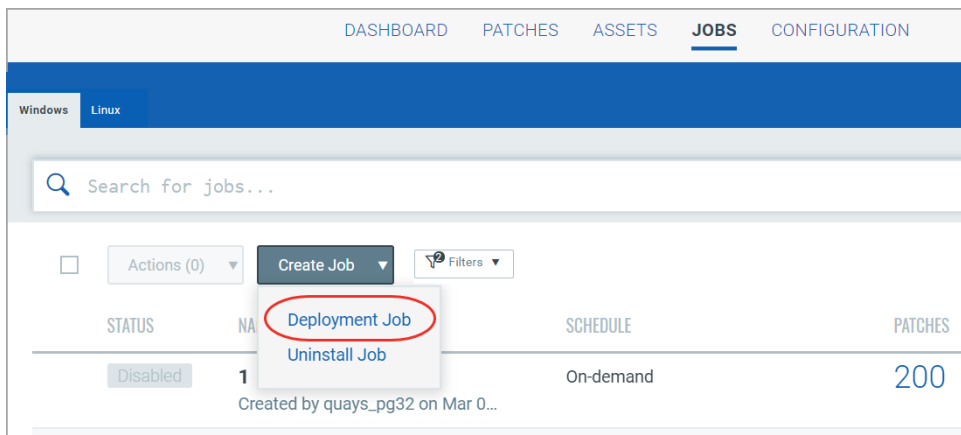


## User Scenario: Deploying security patch jobs for Microsoft

Microsoft releases crucial security patches on a regular basis. To automate the job deployment for these patches, you can create a job to run on the 2nd Tuesday of every month.

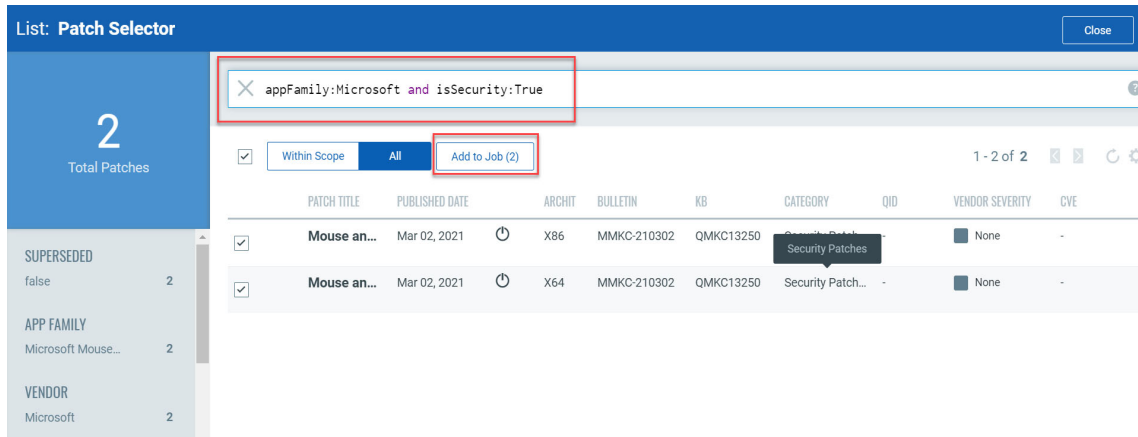
To automate the patch installation, create a monthly recurring deployment job with the following parameters:

1. Navigate to **Jobs > Windows > Create Job**, and click **Deployment Job**.



2. Enter the job title as **Microsoft Security Patches** and click **Next**.
3. Select assets or asset tags on which you want to apply the patches.
4. (Optional) Select **Add Exclusion Asset Tags** to exclude the assets from the deployment job that have **All/Any** of the selected asset tags.

- To select patches to apply to the assets, choose the **Select Patch** option, and then click the **Take me to patch selector** link to select patches.
- On the Patch Selector page, in the search query, enter **appfamily:windows and isSecurity: True** and select the patches from the search results.



Note: You can add maximum 2000 patches to a single job.

- Click **Add to Job** and then click **Close**.
- On the Select Patches page, click **Next**.
- On the Schedule Deployment page, click **Schedule**.
- Select the start date and time, and select the **Recurring Job**.
- Set **Repeats** as **Monthly**, select **day of a week**, and **2nd Tuesday** of the month at **9:00 PM**.

### Schedule Deployment

Schedule the deployment job to run on demand or in the future.

On Demand  **Schedule** **Schedule:** Schedule the deployment job to run at a set time.

START DATE:  START TIME:   Recurring Job

REPEATS \*

ON \*  
 date of the month  day of the week

RECURRENCE DAY \*  WEEKDAY \*  of the month at START TIME

- (Optional) Set the Patching window if you want to restrict the agent to start the job within the specified patch window (e.g., start time + 6 hours). The job gets timed out if it does not start within this window.

13. Based on your preference, configure how to notify the users about the patch deployment. Configure the pre-deployment messages, deferring the patch deployment certain number of times.

← Create: Deployment Job

STEPS 5/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Deployment and Reboot Communication Options

Define user (recipient) patch deployment communication and reboot warning messages to encourage and educate user about patch installment and the reboot cycle.

#### Deployment messages

**Pre-Deployment**  OFF  
Display message to users before patch deployment starts.  
(If no user is logged in, deployment process starts per job schedule)

**Deployment in Progress**  OFF  
Display message to users while patch Deployment is in progress.

**Deployment Complete**  OFF  
Display message to users when patch Deployment is complete.  
(If reboot is required, Reboot Request message will be displayed instead)

We recommend that you fill out both the message and description fields for these options.

← Create: Deployment Job

STEPS 5/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Reboot messages

**Suppress Reboot**  OFF  
Asset reboot is suppressed and users are not prompted for reboot post patch installation.

**Reboot Request**  OFF  
Show a message to users indicating that a reboot is required.  
(If no user is logged in, the reboot will start immediately after patch deployment)

**Reboot Countdown**  OFF  
Show countdown message to users after deferment limit is reached.

### Additional Job Settings

**Enable opportunistic patch download**  OFF  
The agent attempts to download patches before a scheduled job runs.

**Minimize job progress window**  OFF  
Allow end-users to minimize message windows.

Cancel Previous Next

14. Finally based on the permissions assigned to other users, choose Co-Authors who can edit this job.

← Create: Deployment Job

STEPS 6/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Job Access

Select the Co-Author users who can edit this job.

Add these users (1) as Co-Authors to this job Add Users

FIRST NAME	LAST NAME	USERNAME	EMAIL	Remove All
Bruce	Wayne	gtham_bw		✕

15. Next, review the configuration.

Job can either be created in ENABLED state by using the **Save & Enable** option or in DISABLED state by using the default **Save** button.

← Create: Deployment Job

STEPS 7/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Additional Job Settings Edit

Enable opportunistic patch download: Yes

Minimize job progress window: Yes

### Selected Users Edit

Co-Author users (1) who can edit this job.

FIRST NAME	LAST NAME	USERNAME	EMAIL

Cancel Previous Save ▼

Save & Enable  
Save

**Note:** The Patch Manager user can change the job status (enable/disable), delete and edit the job.



# Using QQL to Automate Patch Selection for Windows Jobs

You can use Qualys Query Language (QQL) to provide the criteria that associates selective patches to a deployment job. QQL ensures that all the latest patches that qualify based on the criteria are automatically associated to a job without a manual intervention. This saves time and ensures that the critical patch updates are installed regularly.

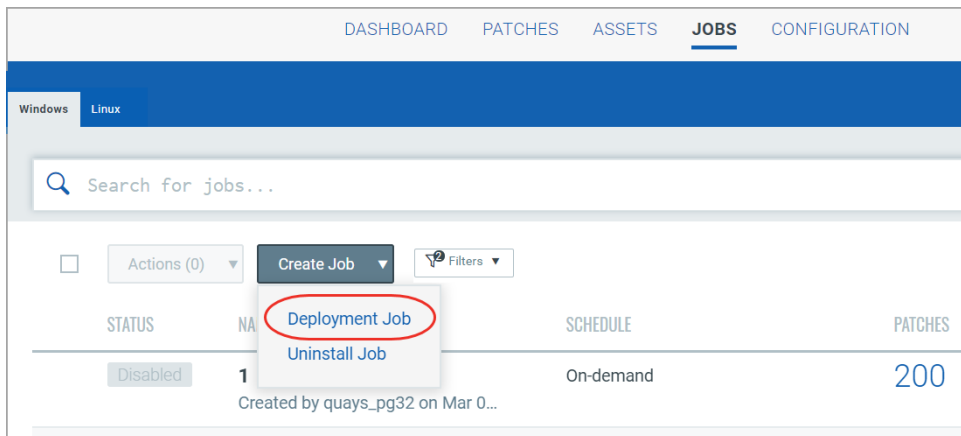
Although, you can use QQL for a run-once job, QQL is optimally utilized for recurring jobs.

QQL is available only for the deployment jobs and not for the rollback jobs. Since rollback patch jobs are executed for selective patches and rarely used, the QQL option is not provided for the rollback job.

## User scenario: Installing critical patches for Chrome and Internet Explorer

To ensure that the browsers receive the critical updates, you can create a daily recurring job to ensure critical patches are deployed.

1. Navigate to **Jobs > Windows > Create Job**, and click **Deployment Job**.



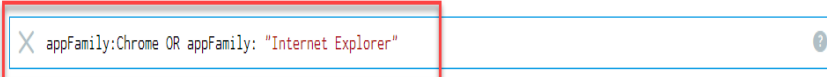
2. Enter the job title as **Browser Security Patches** and click **Next**.
3. Select assets or asset tags on which you want to apply the patches.
4. (Optional) Select **Add Exclusion Asset Tags** to exclude the assets from the deployment job that have ALL/ANY of the selected asset tags.

5. To select patches to apply to the assets, choose **Create a Query for Patches**. Enter **appFamily:Chrome** or **appFamily:"Internet Explorer"**.

### Select Patches

Choose the patches you want to install for the selected assets or create a query for the job.

Select Patches  Create a Query for Patches

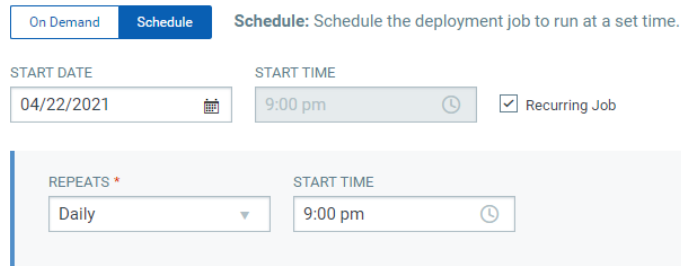


**Note:** For optimum performance, only missing and non-superseded patches that match the QQL criteria will be added to the job.

6. Create the following job schedule:

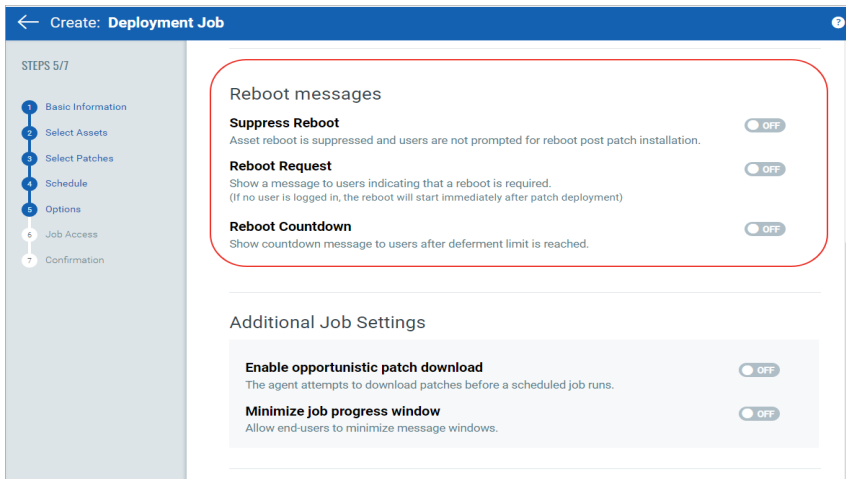
### Schedule Deployment

Schedule the deployment job to run on demand or in the future.



7. (Optional) Set the Patching window if you want to restrict the agent to start the job within the specified patch window (e.g., start time + 6 hours). The job will time out if it does not start within this window.

8. Based on your preference, configure how to notify the users about the patch deployment. Configure the pre-deployment messages, deferring the patch deployment certain number of times.



9. Finally based on the permissions assigned to other users, choose Co-Authors who can edit this job.

← Create: Deployment Job

STEPS 6/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Job Access

Select the Co-Author users who can edit this job.

Add these users (1) as Co-Authors to this job Add Users

FIRST NAME	LAST NAME	USERNAME	EMAIL	Remove All
Bruce	Wayne	gtham_bw		<input type="checkbox"/>

10. Next, review the configuration.

Job can either be created in ENABLED state by using the **Save & Enable** option or in DISABLED state by using the default **Save** button.

← Create: Deployment Job

STEPS 7/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Additional Job Settings [Edit](#)

Enable opportunistic patch download: Yes

Minimize job progress window: Yes

### Selected Users [Edit](#)

Co-Author users (1) who can edit this job.

FIRST NAME	LAST NAME	USERNAME	EMAIL

Cancel Previous Save Save & Enable Save

**Note:** The Patch Manager super user can change the job status (enable/disable), delete and edit the job.

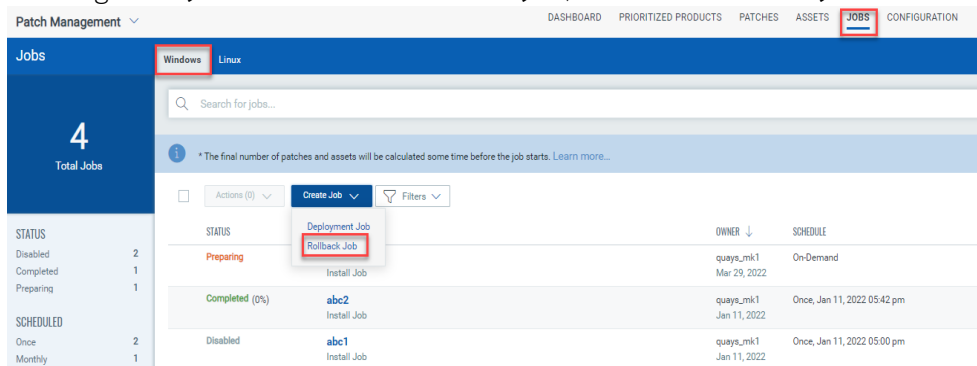
# Rolling Back Patches from Windows Assets

You can create a patch rollback job to roll back patches from Windows assets. Rollback job is rare and should be used with caution because it can roll back patches that you might not have wanted to roll back. We recommend that you use the run-once option for the rollback Windows job. We don't roll back software applications by default, however if a patch is rolled back, sometimes the software application might get rolled back. Be extremely precise while selecting the patches that you want to roll back.

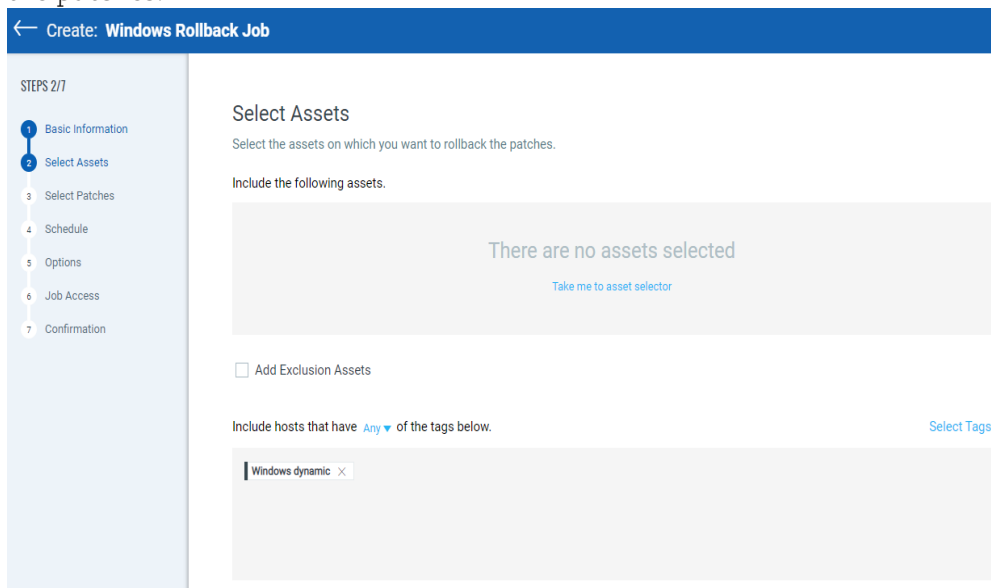
## User Scenario: Rolling back an older version of Internet Explorer browser

Using an older version of the web browser can cause security issues. You can roll back an older version of Internet Explorer browser that might have released before 2016.

1. Navigate to **Jobs > Windows > Create Job**, and click **Rollback Job**.



2. Provide a job title, and then select assets or asset tags from which you want to roll back the patches.



3. Select patches to roll back from the assets. Use the patch selector link to select patches.
4. On the Patches available for Rollback page, in the search query, enter **appfamily: Internet Explorer and publishedDate: [2015-12-31]**.

PATCH TITLE	PUBLISHED DATE	ARCHIT	BULLETIN	KB	CATEGORY	QID	VENDOR SEVERITY	CVE
KB460127...	Apr 13, 2021	X64	MSNS21-04-46...	KB4601275	Non-Security P...	-	None	-
KB500140...	Apr 13, 2021	X86	MS21-04-SSU...	KB5001403	Security Patch...	91653	Critical	-

**Note:** You can add maximum 2000 patches to a single job.

STEPS 3/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Select Patches

From the available list of patches, choose the patches you want to uninstall on the selected assets.

Available Patches

Selected Patches (4) [Remove All](#)

- DST changes in Windows for Chile (KB4486459) [X]
- Preview of Monthly Rollup for Windows 7 and Windows Server 2008 R2: February 19, 2019 (KB4486565) [X]

7. Click **Add to Job** and then click **Close**.
8. On the Select Patches page, click **Next**.
9. On the Schedule Deployment page, click **On Demand**.

### Schedule Deployment

Schedule the deployment job to run on demand or in the future.

On Demand **Schedule** **Schedule:** Schedule the deployment job to run at a set time.

START DATE: 04/22/2021 START TIME: 8:41 pm  Recurring Job

REPEATS \*  
Monthly

ON \*  
 date of the month  day of the week

RECURRENT DAY \* 2nd WEEKDAY \* Tuesday of the month at START TIME 9:00 pm

10. Based on your preference, configure how to notify the users about the patch deployment. Configure the pre-deployment messages, deferring the patch deployment certain number of times.

**← Create: Windows Rollback Job**

STEPS 5/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Patch Rollback and Reboot Communication Options

Define user (recipient) patch rollback communication and reboot warning messages to encourage and the reboot cycle.

#### Patch Rollback messages

**Pre-Rollback**  
Display message to users before patch rollback starts.  
(If no user is logged in, rollback process starts per job schedule)

**Rollback in Progress**  
Display message to users while patch Rollback is in progress.

**Rollback Complete**  
Display message to users when patch Rollback is complete.

11. Finally, you can prompt the user or choose suppress reboot when asset reboot is required post patch installation.

**← Create: Windows Rollback Job**

STEPS 5/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Reboot messages

**Suppress Reboot**  OFF  
Asset reboot is suppressed and users are not prompted for reboot post patch rollback.

**Reboot Request**  OFF  
Show a message to users indicating that a reboot is required.  
(If no user is logged in, the reboot will start immediately after patch rollback)

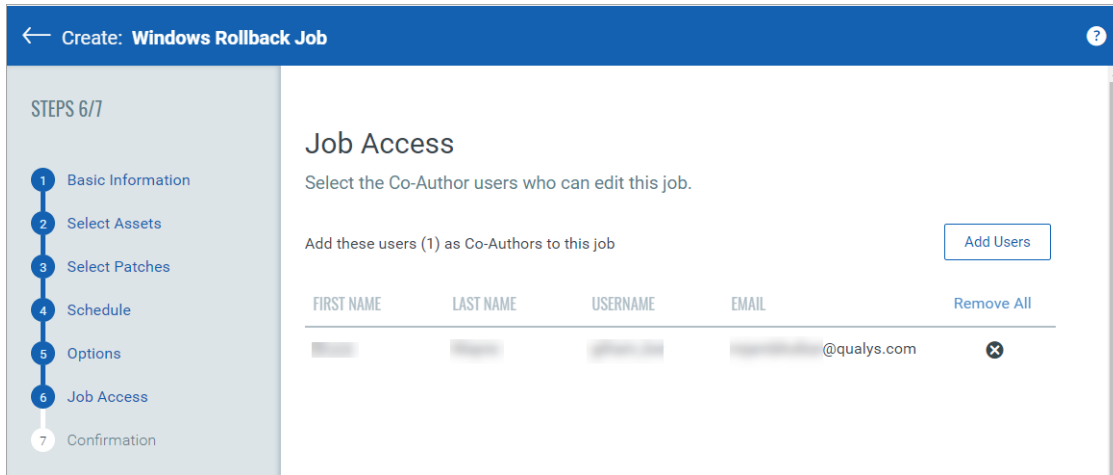
**Reboot Countdown**  ON  
Show countdown message to users after deferment limit is reached.

TITLE \*  
Reboot countdown started

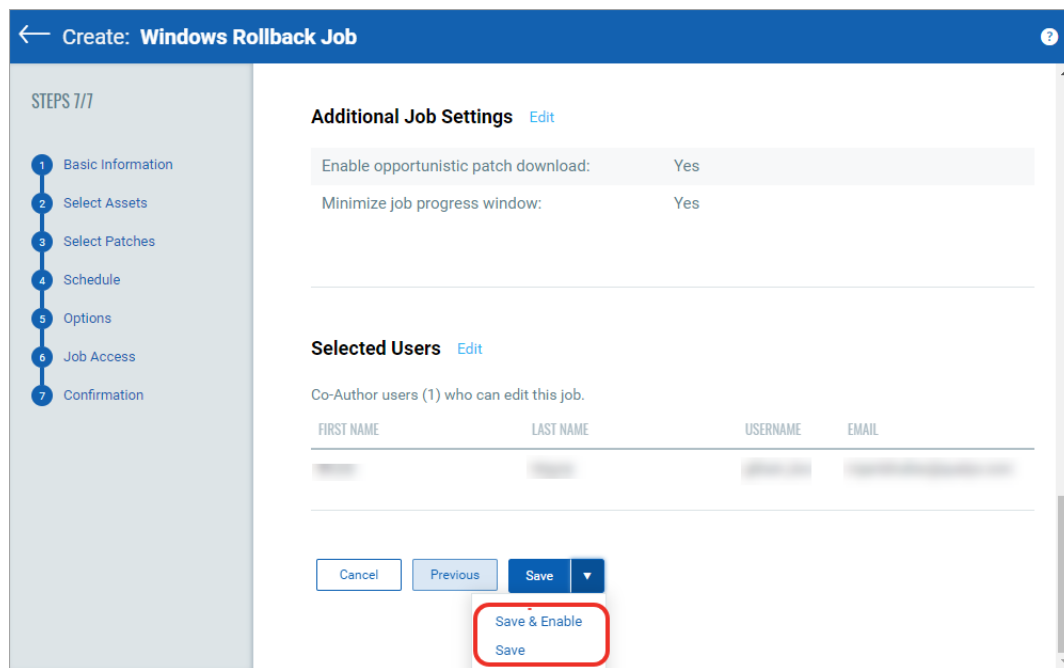
MESSAGE  
The system reboot is initiated. It will reboot automatically after the timer countdown.  
413/500 characters remain

START COUNT-DOWN FROM \*  
15 Minutes

12. Finally based on the permissions assigned to other users, choose Co-Authors who can edit this job.



13. Next, review the configuration. Job can either be created in ENABLED state by using the **Save & Enable** option or in DISABLED state by using the default **Save** button.



You must enable the disabled job in order to run it. To enable a disabled job, simply go to the **Jobs** tab, then from the **Quick Actions** menu of a job, click **Enable**. The **Save & Enable** option should be chosen only when you are confident that job is correctly configured, because this job will begin executing as soon as you “Save” the job.

Note that the Patch Manager user can change the job status (enable/disable), delete and edit the job.

## Rolling Back Patches from Windows Assets

User Scenario: Rolling back an older version of Internet Explorer browser



# Deploying Patches Jobs on Linux Assets

You can create a deployment job to install patches on Linux assets. You have three options to create the deployment job from the following tabs:

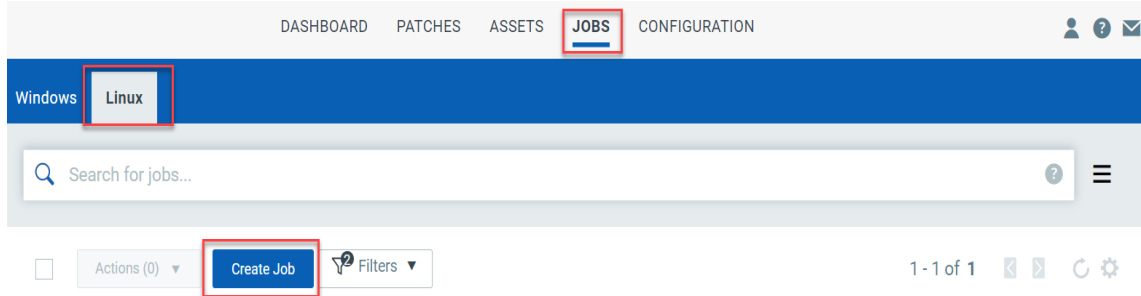
- 1) **Jobs**
- 2) **Assets**
- 3) **Patches**

Refer to the Managing Patch Jobs for Linux Assets topic in the online help.

## User Scenario: Deploying security patches for RHEL assets

RedHat releases security patches on a frequent basis. To automate the patch installation, create a deployment job with the following parameters:

1. Navigate to **Jobs > Linux > Create Job**.



2. Enter the job title as **RHEL Security Patches** and click **Next**.
3. Select assets or asset tags on which you want to apply the patches.
4. (Optional) Select **Add Exclusion Asset Tags** to exclude the assets from the deployment job that have **All/Any** of the selected asset tags.
5. To select patches to apply to the assets, choose the **Select Patch** option and then click **Take me to patch selector** link to select patches.

6. On the Patch Selector page, in the search query, enter **category: security** and select the patches.

The screenshot shows the 'Patch Selector' interface. At the top, there is a search bar with the query 'category:Security' entered. Below the search bar, there is a table of patches. The table has columns for Patch Title, Published Date, Arch, Advisory ID, Category, QID, Vendor Severity, and CVE. The patches listed are:

PATCH TITLE	PUBLISHED DATE	ARCHIT	ADVISORY ID	CATEGORY	QID	VENDOR SEVERITY	CVE
RHSA-2021:1071: ...	Apr 08, 2021	x86_64,...	RHSA-2021:1071	Security	239208	Important	CVE-2021-27363 <a href="#">2 more...</a>
RHSA-2021:1135: ...	Apr 08, 2021	x86_64,...	RHSA-2021:1135	Security	239207	Important	CVE-2020-25097
RHSA-2021:1145: ...	Apr 08, 2021	x86_64,...	RHSA-2021:1145	Security	239207	Important	CVE-2021-20305
RHSA-2021:1072: I...	Apr 06, 2021	x86_64,...	RHSA-2021:1072	Security	239207	Important	CVE-2021-20277

**Note:** You can add maximum 2000 patches to a single job.

7. Click **Add to Job** and then click **Close**.

8. On the Select Patches page, click **Next**.

## Select Patches

From the available list of patches, choose patches you want to install on the selected assets in this job.

The screenshot shows the 'Select Patches' page. At the top, there is a button 'Add Patches'. Below it, there is a table of selected patches. The table has columns for Patch Title, Arch, Advisory ID, Packages, and Remove All. The patches listed are:

PATCH TITLE	ARCHIT	ADVISORY ID	PACKAGES	Remove All
RHSA-2021:1071: kernel security and bug fix update	x86_64,noarc...	RHSA-2021:1071	19	<input type="checkbox"/>
RHSA-2021:1135: squid security update	x86_64,noarc...	RHSA-2021:1135	7	<input type="checkbox"/>

9. On the Schedule Deployment page, click **Schedule**.

10. Select the start date and time, and select **Recurring Job**.

11. Set **Repeats** as **Monthly**, select **day of a week**, and **1st Monday** of the month at **9:00 PM**.

### Schedule Deployment

Schedule the deployment job to run on demand or in the future.

**Schedule:** Schedule the deployment job to run at a set time.

START DATE:

START TIME:

Recurring Job

**REPEATS \***

**ON \***  
 date of the month  day of the week

**RECURRENCE DAY \***  **WEEKDAY \***  of the month at **START TIME**

12. (Optional) Set the Patching window if you want to restrict the agent to complete the job within the specified patch window (e.g., start time + 6 hours). The job will timed out if it does not complete within this window.

13. Based on your preference, configure reboot communication options. Enable the Continue patching even after a package failure occurs for a patch option so that if one of the package in the patch fails to install, other packages are installed successfully.

### Reboot Communication Options

Define user (recipient) patch deployment communication and reboot warning messages to encourage and educate the user about patch installation and the reboot cycle.

#### Reboot messages

##### Suppress Reboot

Asset reboot is suppressed and users are not prompted for reboot post patch installation.



#### Additional Job Settings

##### Continue patching even after a package fails to install for a patch

Enabling this setting ensures that if one of the packages for the patch fails to install, installation of other packages is attempted.



14. Finally based on the permissions assigned to other users, choose Co-Authors who can edit this job.

← Create: Deployment Job

STEPS 6/7

- 1 Basic Information
- 2 Select Assets
- 3 Select Patches
- 4 Schedule
- 5 Options
- 6 Job Access
- 7 Confirmation

### Job Access

Select the Co-Author users who can edit this job.

Add these users (1) as Co-Authors to this job [Add Users](#)

FIRST NAME	LAST NAME	USERNAME	EMAIL	Remove All
Bruce	Wayne	gtham_bw		<input type="checkbox"/> X

15. Next, review the configuration.

Job can either be created in ENABLED state by using the **Save & Enable** option or in DISABLED state by using the default **Save** button.

**Note:** The Patch Manager super user can change the job status (enable/disable), delete and edit the job.

# Reviewing Job Results

Once the deployment or rollback job is created, it runs immediately (OnDemand) or at the specified schedule. You can view the results of a job run, whether all patches were successfully installed or rolled back or if there were failures.

To view the job results, go to Jobs, then from the **Quick Actions** menu of a job, click **View Progress**. You can see the assets on which the patch deployment or rollback job was run, and the results in the Progress column.

On this screen, we also show you the assets that are not licensed in Patch Management. We skip job execution for these assets.

STATUS	ASSET NAME	JOB SENT ON	OS	LAST USER	PATCHES		
					INSTALLED	FAILED	SKIPPED
Completed On Dec 1, 2020 04:24 pm Last agent checked-in on Dec 4, ...	WIN2012R2	Nov 30, 20...	Microsoft Windows Server 2012 R2 Standard 6.3.9600 64-bit ...	Administrator	0	0	2

We also show the following patch count for Windows jobs:

- INSTALLED: Number of patches that were successfully deployed on the agent in the latest job run.
- FAILED: Number of patches that failed to install due to some errors on the agent in the latest job run.
- SKIPPED: Number of patches that were skipped in latest job run.

A few patches might be skipped because the patches are not applicable for the asset, superseded by another patch, or are already installed.

**Note:** The error logs for failed patches of Linux patch jobs are stored only for 14 days.

Job activities corresponding to the reboot messages and notifications displayed on the asset, are logged at the following location:

%USERPROFILE%\AppData\Local\Qualys\QualysAgent\QAgentUiLog.txt



# Exporting Patch Data for Windows Assets

You can export detailed patch data for Windows assets from the **Patches** and **Assets** tabs. You can download job progress details from the **Job Progress** option on the **Jobs** tab.

You can also view the list of reports generated and their statuses. Exporting the patch data allows to import the data to a preferred analytic tool, such as Tableau. For example, you can analyze the data and calculate compliance ratio to make sound decisions or you can use the patch data to identify patches that were missed based on the severity of the critical assets.

You can now overlay the patch data with other business data to set a new context for analysis. Exporting allows you to integrate data from different systems and view it on a single pane of glass. The reports are available to download for 7 days.

## How to Export Patch Data?

To export patch data, go to the **Patches** or **Assets** tab and click **Download**:

PATCH TITLE	PUBLISHED DATE	ARCH	BULLETIN / KB	CATEGORY	ID	VENDOR SEVERITY	MISSING	INSTALLED
Notepad++ 7.9.5	Mar 23, 2021	X86	NPPPP-210323 QNPPPP795	Security Patch...	372120	None	2	0
Notepad++ 7.9.5	Mar 23, 2021	X64	NPPPP-210323 QNPPPP795	Security Patch...	372120	None	1	0
Firefox 87.0	Mar 23, 2021	X64	FF-210323 OFF870	Security Patch...	370341	Important	1	0
KB5001640: March 9, 2021 update causes Windows 8.1 and Server 2012 R2 to not print graphical cont...	Mar 22, 2021	X64	MSNS21-03-W81-... KB5001640	Non-Security P...	-	None	1	0
Security Monthly Rollup for Windows 8.1 and Server 2012 R2: March 9, 2021 (KB5000848)	Mar 09, 2021	X64	MS21-03-MR81-S... KB5000848	Non-Security P...	91413	Critical	1	0
Remove specific prevalent malware with Windows Malicious Software Removal Tool	Mar 09, 2021	X64	MSRT21-03 KB890830	Security Tools	91606	None	2	0
March 9, 2021-KB5000853 (Security-only update)	Mar 09, 2021	X64	MS21-03-S081-S0... KB5000853	Security Patch...	91754	Critical	1	0

The Report Download Request Status page lists all the reports that are ready to download or are being generated. Once the reports are generated, click to download the report and then simply unzip the file to view the data.

STATUS	REQUESTED ON	EXPIRES ON	FILE SIZE	TAB NAME	QUERY	ACTIONS
Ready	Mar 25, 2021	Apr 01, 2021	33.09 KB	PATCH	patchStatus[Missing] and isSuperseded:false	Download
Ready	Mar 25, 2021	Apr 01, 2021	33.19 KB	PATCH	patchStatus[Missing] and isSuperseded:false	Download
Ready	Mar 25, 2021	Apr 01, 2021	756.88 KB	PATCH	-	Download
Ready	Mar 25, 2021	Apr 01, 2021	240.00 ...	PATCH	patchStatus[Missing] and isSuperseded:false AND name:abcd or abcd	Download
Ready	Mar 25, 2021	Apr 01, 2021	481.00 ...	JOB_PROGRESS	(jobId)26fce584-fc2a-44ba-8e9d-ed2b39c606b7)	Download

You can also export the data from the **Job Progress** tab. To download the individual job details. Go to **Jobs > Quick Actions > View Progress > Download**.

STATUS	ASSET NAME	JOB SENT ON	OS	LAST USER	PATCHES		
					UNINSTALLED	FAILED	SKIPPED
<b>Pending</b> From Mar 30, 2021 04:49 pm Last agent checked-in on Mar 2, ...	<b>DESKTOP-IV...</b> -	Mar 30, 20...	Microsoft Windows 1...	.Administrat...	-	-	-
<b>Pending</b> From Mar 30, 2021 04:43 pm Last agent checked-in on Feb 24, ...	<b>Rest-Assure...</b> -	-	Windows Microsoft ...	-	-	-	-



# Patching from VMDR

From the VMDR application, based on the VMDR Prioritization report, you can identify the vulnerabilities to remediate first. Also, you get an insight into the patches to fix the vulnerabilities. In the VMDR Prioritization report, you can see the count of patches that you can deploy to address the vulnerabilities. By clicking Patch Now, you can initiate the process of patching the vulnerabilities.

The Patch Now is disabled if any of the following conditions are not met:

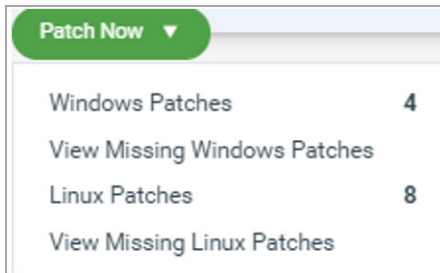
- Latest patch is missing
- Patch installation will be done through an automatic method
- Software is not installed at the default location, which is C:\Program Files.
- For a QID, if there is no latest missing patch associated with it in Patch Management for the given criteria of the assets.

**Note:** Patching from VMDR is not supported for Mac assets.

The screenshot displays the VMDR Prioritization interface. At the top, there are three summary cards: 'Prioritized Assets' (1 of 1, 100%), 'Prioritized Vulnerabilities' (162 Instances of 323, 50.15%, 162 Unique), and 'Available Patches' (5). A 'Patch Now' button is highlighted in the Available Patches card. Below the summary cards, there are tabs for 'Vulnerabilities', 'Patches', and 'Assets'. The 'Patches' tab is active, showing a table of patches. The table has columns for Patch Title, Archt, Bulletin/KB or Advisory ID, Type, QID, Vendor Severity, and Missing. The first row is highlighted, and its 'Patch Now' button is also highlighted. A red circle with the number 2 is next to the 'Missing' column header.

Patch Title	Archt	Bulletin/KB or Advisory ID	Type	QID	Vendor Severity	Missing
Cumulative Security Update for Internet Explorer (...)	X64	MS14-037 KB2963952	Application	100192 3 more	Critical	1 Patch Now
Cumulative Security Update for Internet Explorer (...)	X64	MS14-018 KB2919355	OS	100187	Critical	1 Patch Now
Vulnerability in VBScript Scripting Engine Could Al...	X64	MS14-011 KB2909210	OS	100178 1 more	Moderate	1 Patch Now
Vulnerability in Windows Could Allow Remote Cod...	X64	MS13-098 KB2893294	OS	90931	Critical	1 Patch Now
Vulnerability in Microsoft Scripting Runtime Objec...	X64	MS13-099 KB2892074	OS	90932	Critical	1 Patch Now

You can perform one of the following actions. To learn more information about Windows Patches, Linux Patches and the rest of the two actions, see [Reading the VMDR Prioritization Report](#).



When you choose to patch Windows or Linux patches, you can:

- Add all patches to a new job or an existing job.
- Add individual patches to a new job or an existing job.

After you select the required option, the Patch Management application opens in another tab, and you need to complete the job creation steps to create the patch job.

[Creating Patch Job for Windows Assets](#)

[Creating Patch Job for Linux Assets](#)

# URLs to be Added to the Allowlist for Patch Download

This section provides a list of URLs that you must add to the allowlist for the Cloud Agent to successfully download patches on your assets.

These URLs must be allowed access through firewalls or other content blocking methods to properly retrieve patches from the patch vendors. The Qualys Cloud Agent must get access to these URLs to successfully download patches. If you are using a Qualys Gateway Service (QGS) proxy, ensure that it has access to the URLs as well so that it can download and cache the patches.

NOTE: To obtain the IP Address for vendor sites you can ping the vendor site or contact the vendor to obtain this information. We are unable to provide a list of IP addresses due to the varied dynamic IP addresses being used by the vendors.

It may be easier to create an exception for an entire domain rather than entering all specific URLs. You can usually do so by entering the exception in this format:

\*.domain.com

## List of URLs to be added to the Allowlist

<ftp://ftp.attglobal.net>

<http://34e34375d0b7c22eafcf-c0a4be9b34fe09958cbea1670de70e9b.r87.cf1.rackcdn.com>

<http://airdownload.adobe.com>

<http://appldnld.apple.com>

<http://appldnld.apple.com.edgesuite.net>

<http://ardownload.adobe.com>

<http://au.v4.download.windowsupdate.com>

<http://b1.download.windowsupdate.com>

<http://cache-download.real.com>

<http://cache.lumension.com>

<http://ccmdl.adobe.com>

<http://cdn01.foxitsoftware.com>

<http://cdn02.foxitsoftware.com>

<http://cdn03.foxitsoftware.com>

<http://cdn06.foxitsoftware.com>

<http://cdn09.foxitsoftware.com>

<http://cdn1.evernote.com>

<http://citrixreceiver491000.html>  
<http://citrixreceiver492000.html>  
<http://citrixreceiver493000.html>  
<http://content.ivanti.com>  
<http://dl.delivery.mp.microsoft.com>  
<http://dl.google.com>  
<http://dl3.xmind.net>  
<http://download-origin.cdn.mozilla.net>  
<http://download.adobe.com>  
<http://download.autodesk.com>  
<http://download.betanews.com>  
<http://download.ccleaner.com>  
<http://download.cdburnerxp.se>  
<http://download.gimp.org>  
<http://download.macromedia.com>  
<http://download.microsoft.com>  
<http://download.notepad-plus-plus.org>  
<http://download.olderfoss.com>  
<http://download.pdfforge.org>  
<http://download.piriform.com>  
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