

# Windows Driver Updates with OpenManage Enterprise 3.4

This technical white paper provides information about managing Windows OS driver inventory and updates using OpenManage Enterprise 3.4 console.

## Abstract

With OME 3.4, users can inventory and update OS drivers for Windows systems. Read on to know how to use this feature.

July 2020

## Revisions

Date	Description
July 2020	Initial release

## Acknowledgements

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## Executive summary

Traditionally, OpenManage Enterprise has been used to update server firmware in data center environments. With OpenManage Enterprise 3.4, Windows OS driver inventory and updates can also be managed from the console. The feature is implemented so that the workflows are as similar as possible to the existing firmware update workflows. This paper walks you through the process of enabling and using the Windows driver update feature with OpenManage Enterprise 3.4.

# 1 Windows OS Driver updates with OME 3.4

Windows OS Driver update feature in OpenManage Enterprise 3.4 enables users to obtain inventory and update Windows OS drivers of servers discovered via the host OS credentials. To use this feature, OME virtual machine deployed in the data center should be version 3.4 or later.

The following topics are discussed in this paper:

- [How does Windows OS Driver Update work?](#)
- [Navigating Windows OS driver inventory workflow](#)
- [Navigating Windows OS driver update workflow](#)
- [Troubleshooting Issues with Driver Inventory or Update](#)

## 1.1 How does Windows OS Driver Update work?

OME manages Windows OS driver inventory and updates by using internal utilities such as Dell System Update (DSU) and Inventory Collector (IC).

The following diagram is a quick illustration of the process involved from OME.

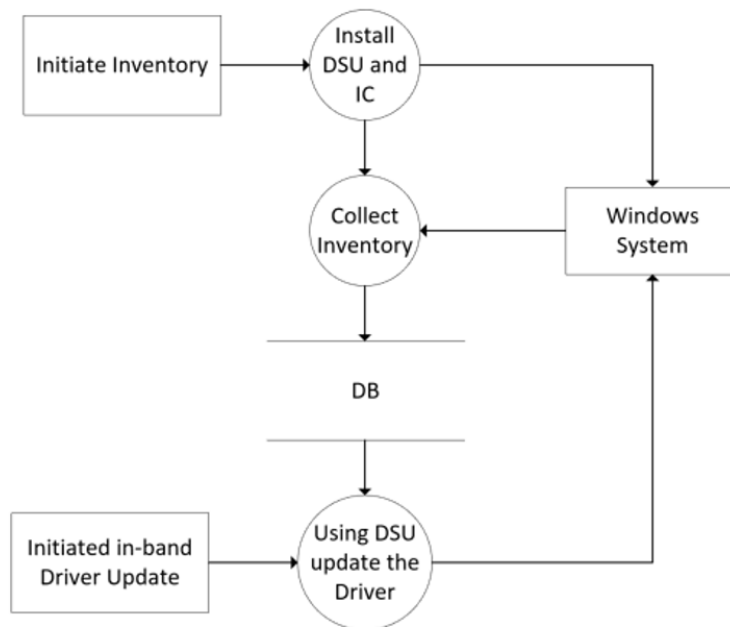


Figure 1 Windows OS driver inventory and update process

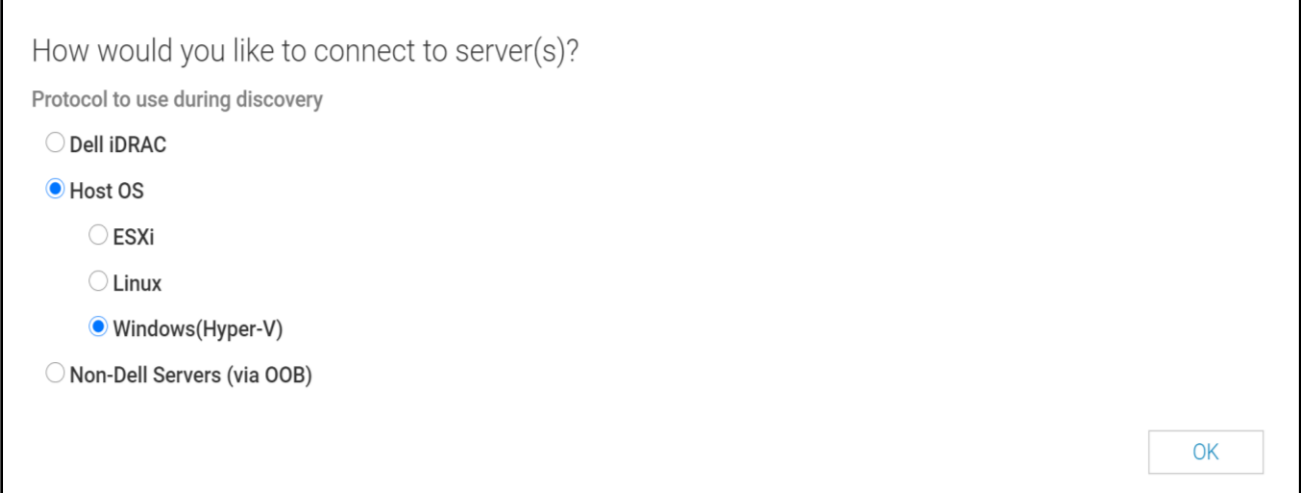
Since obtaining OS driver inventory and then updating OS drivers requires OME to install the internal utilities on the host OS, this feature is not enabled by default. The user must enable the feature to retrieve the OS driver inventory. Thereafter, OS drivers can be kept updated with the existing firmware update workflows. OS driver inventory and updates are supported for 64-bit Windows versions 2012 and up.

In the next sections, the user workflow is detailed.

## 1.2 Navigating the OS driver inventory workflow

User workflow for OS driver inventory is described in this section.

1. The administrator discovers servers running Windows OS using the host OS credentials as shown below. An SSH connection is made to each such system to discover it.
  - a. Specify discovery mode for creating a server discovery job as shown below.



How would you like to connect to server(s)?

Protocol to use during discovery

- Dell iDRAC
- Host OS
  - ESXi
  - Linux
  - Windows(Hyper-V)
- Non-Dell Servers (via OOB)

OK

Figure 2 Specifying how to discover the servers – via Host OS

b. Specify IP addresses, ranges and/or hostnames and SSH credentials as shown below.

**Create Discovery Job**

Specify device types and IP addresses, ranges and/or hostnames. If an admin account is used for discovery, primary application usage is assumed to be device management. The admin account will be used for future device management tasks. If only monitoring is desired, lower privileged accounts can be used.

**Discovery Job Name**

**Devices to Discover**

|  Global Exclude

Device Type	IP/Hostname/Range	Settings
<input type="button" value="Trash"/> <input type="text" value="Server"/>	<input type="text" value="10.10.10.10"/>	<b>SSH Credentials</b> User Name <input type="text" value="administrator"/> Password <input type="password" value="....."/> <a href="#">Additional Settings</a>

**Schedule Discovery Job**

**Additional Options**

- Enable trap reception from discovered iDRAC servers and MX7000 chassis.
- Email when complete

Figure 3 Creating Discovery job

- c. On successful discovery, the servers are displayed under **All Devices>Servers>Windows Servers**.

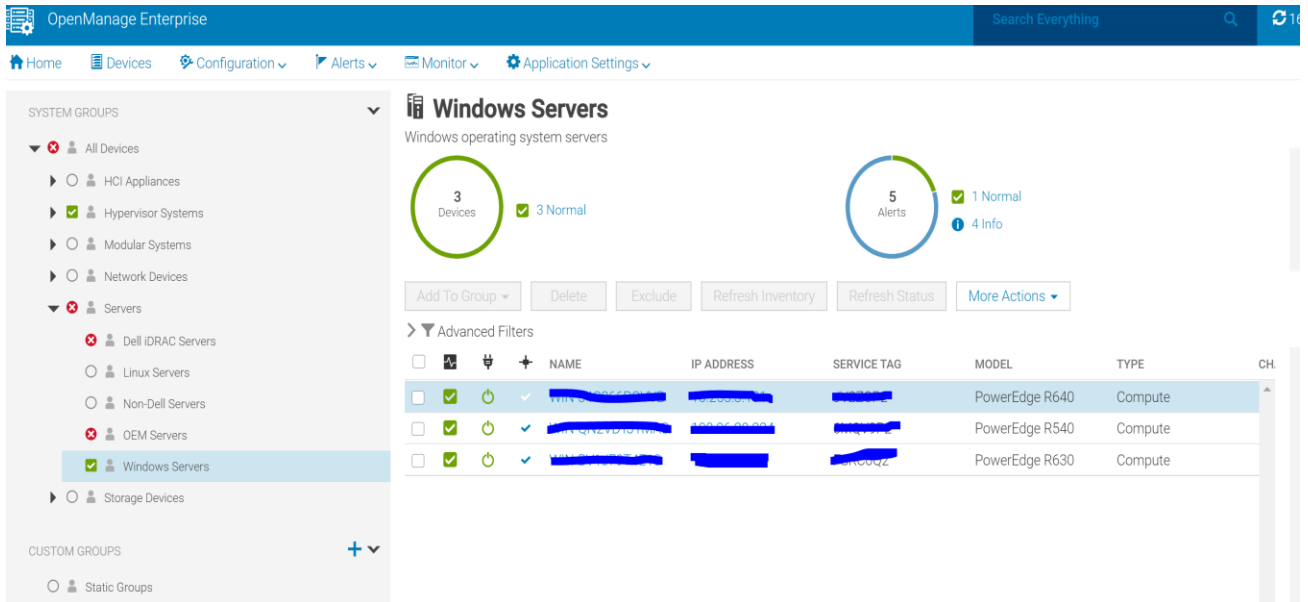


Figure 4 List of Windows operating system servers

2. To collect the inventory information, initiate an inventory job and select **Collect driver inventory**.

The **Collect driver inventory** option present in the “Default Inventory task” (as well as any other inventory task created via the Inventory portal) is not enabled by default. To collect driver inventory, OME pushes two utilities to the target systems: Dell System Update (DSU) and Inventory Collector (IC). Traditionally, inventory is a read operation which does not involve altering the target system. Since driver inventory requires DSU and IC to be pushed and installed on target systems, the workflow requires explicit user opt-in. The “collect driver inventory” only affects server devices discovered via their host OS.



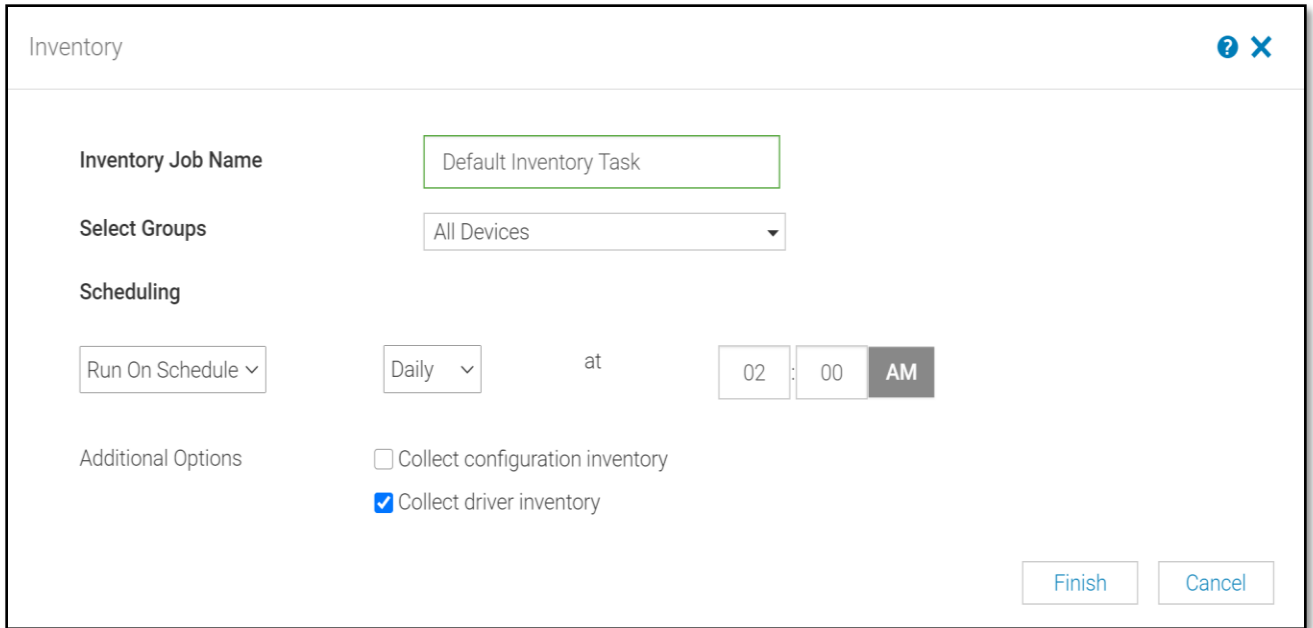


Figure 5 Configuring inventory jobs to additionally collect driver inventory

3. Once the inventory job completes, the OS driver inventory is displayed in the **Hardware>Installed Software** tab on the Driver Details page.

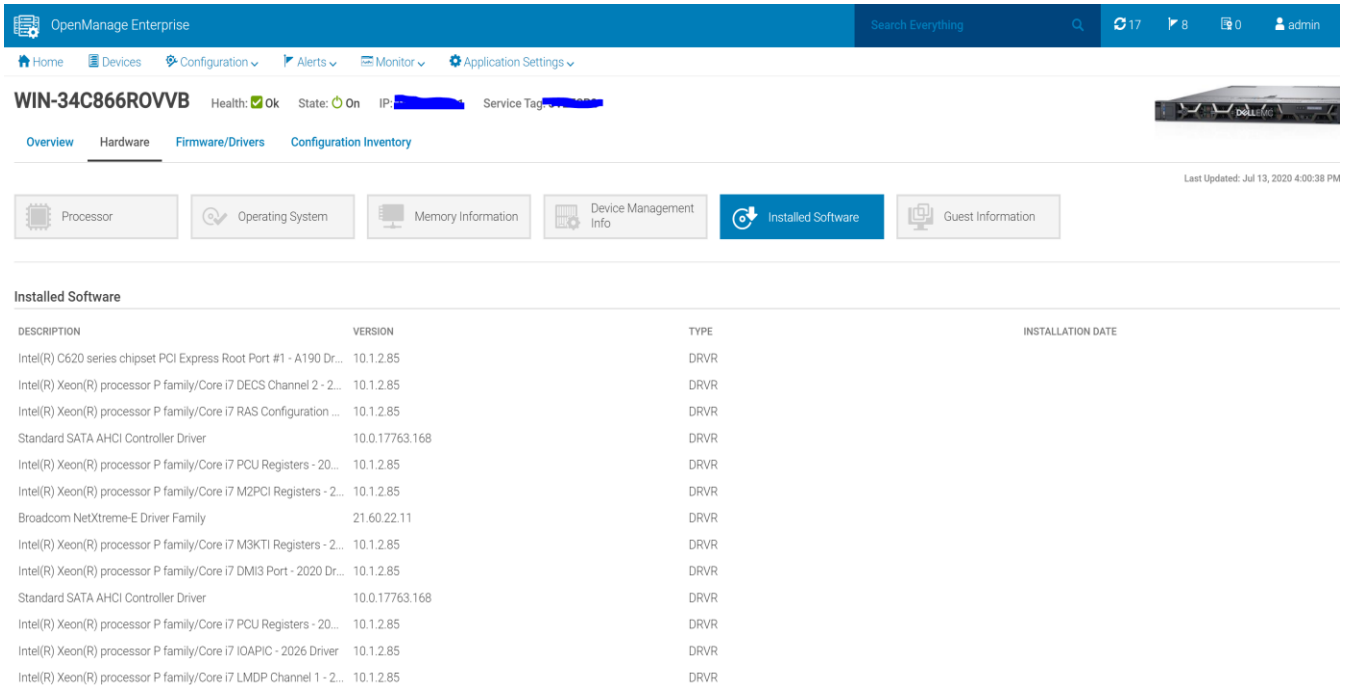


Figure 6 OS driver inventory

## 1.3 Navigating the OS driver update workflow

The user workflow for OS driver update is described in this section.

### 1.3.1 Using the compliance report

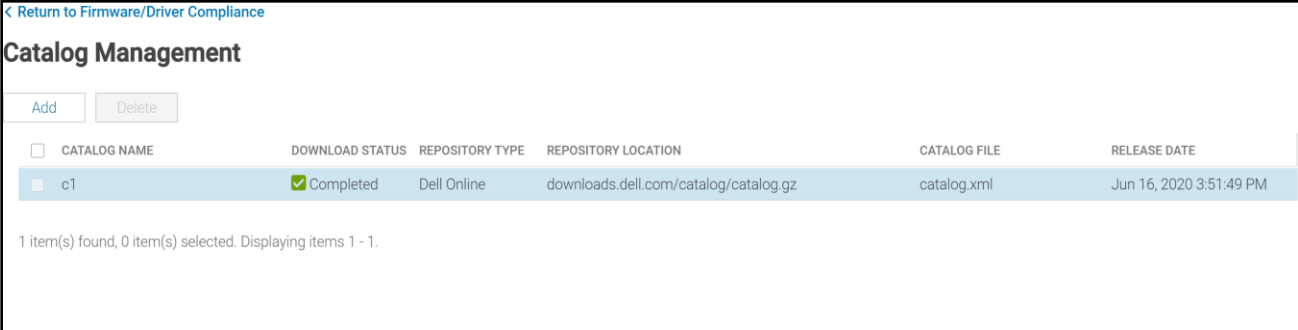
For ease of use and familiar workflow for users, the OS driver update workflow has been kept almost identical to the firmware update workflow.

1. Create a catalog in OME by either pointing to Dell online or by specifying a catalog on a network share (catalog created manually / using DRM). The user can specify if the catalog is manually refreshed or automatically refreshed periodically.
2. Create a baseline by choosing a catalog and a set of devices or group of devices to associate with that catalog. This causes a compliance evaluation to run. The compliance evaluation compares the software inventory collected for the devices in that baseline, against the versions specified in the catalog.

In versions prior to OME 3.4, the software inventory only includes the Firmware component inventory. With OME 3.4, it also includes the OS driver inventory for applicable systems. The compliance report displays both Firmware and OS driver compliance.

The “Advanced Filters” for compliance reports has an additional filter option for “Component Type” with values: All, Firmware, Drivers. The default option for the “Component Type” filter is All. If an OS driver update requires a host reboot, the “Reboot required” field for the appropriate driver update is true.

The following screenshots show an online catalog, a baseline targeting a mix of servers (discovered via iDRACs and discovered via Windows OS) and the resultant compliance report.



Return to Firmware/Driver Compliance

### Catalog Management

<input type="checkbox"/>	CATALOG NAME	DOWNLOAD STATUS	REPOSITORY TYPE	REPOSITORY LOCATION	CATALOG FILE	RELEASE DATE
<input checked="" type="checkbox"/>	c1	Completed	Dell Online	downloads.dell.com/catalog/catalog.gz	catalog.xml	Jun 16, 2020 3:51:49 PM

1 item(s) found, 0 item(s) selected. Displaying items 1 - 1.

Figure 7 Creating online catalog

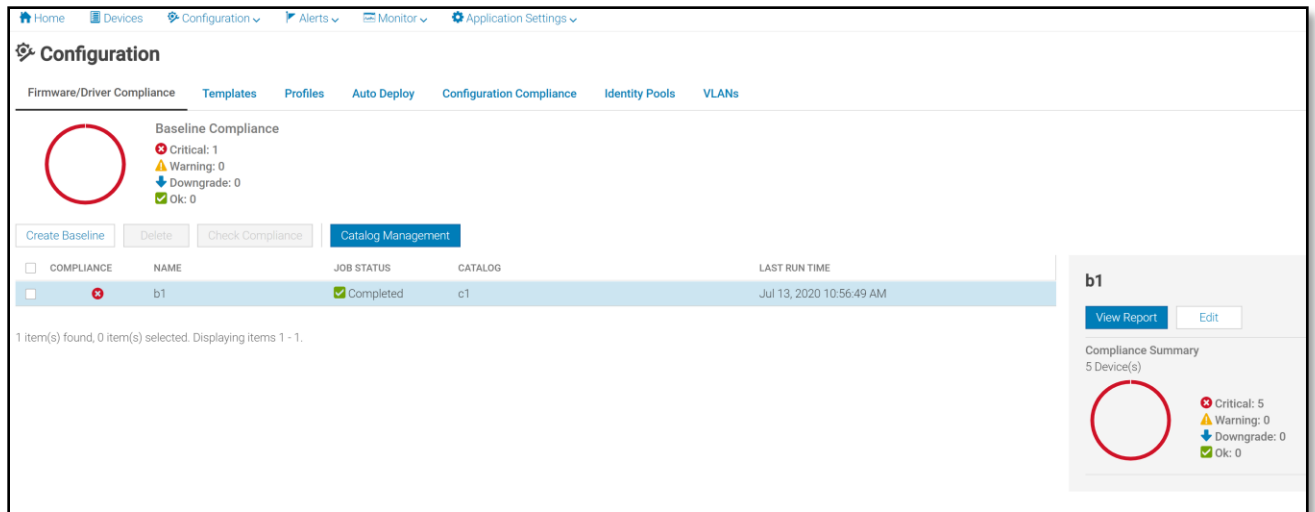


Figure 8 Creating a baseline

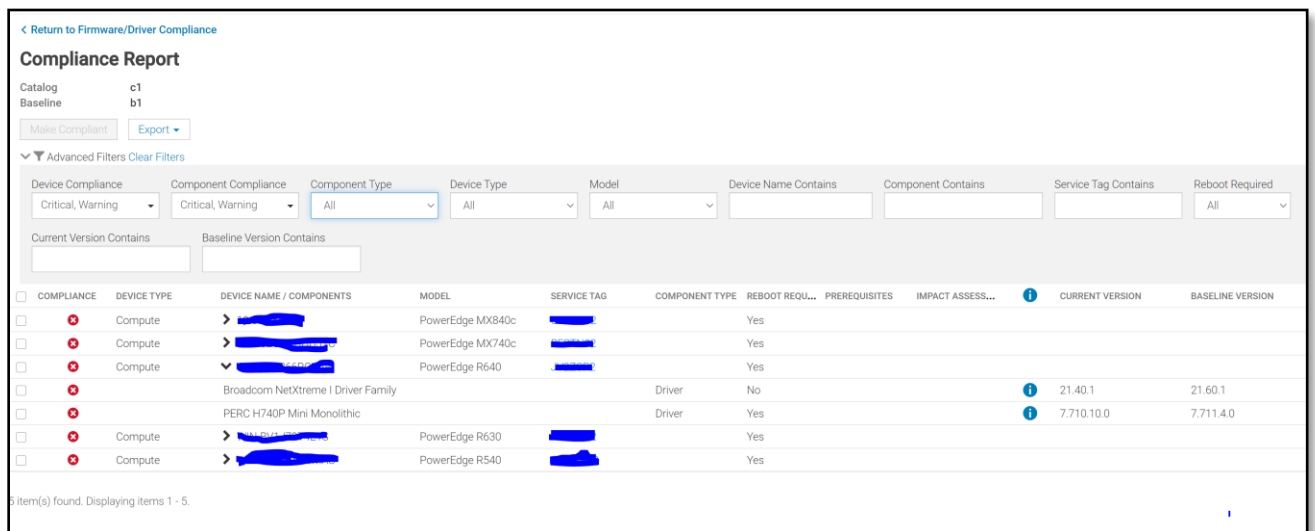


Figure 9 Compliance report

3. For each non-compliant device shown in the compliance report, the user can choose to:

- Update all components (firmware and drivers)
- Update Firmware components only (all firmware components, or subset)
- Update OS drivers only (all drivers or subset)
- Update a combination of Firmware components and OS drivers.

The status of driver update can be checked via the Jobs portal - Task execution history detail.

✓ Completed Jul 13, 2020 11:30:43 AM Jul 13, 2020 11:34:37 AM 00:03:54 100%

1 item(s) found. Displaying items 1 - 1.

**Execution Details**

[Export](#)

> **Advanced Filters**

STATUS	TARGET SYSTEM	START TIME	END TIME	ELAPSED TIME
✓ Completed	[REDACTED]	Jul 13, 2020 11:30:51 AM	Jul 13, 2020 11:34:07 AM	00:03:15
✓ Completed	All Selected Targets	Jul 13, 2020 11:30:43 AM	Jul 13, 2020 11:30:51 AM	00:00:08

2 item(s) found. Displaying items 1 - 2.

**Results:**  
Target System: [REDACTED]

**Messages:**  
Running  
Starting communication with the device.  
Checking the target machine for any update task in progress.  
=====

Task initiated for updates via OS  
=====

Getting update status from the target machine...  
DSU response: DSU initiated  
DSU response: DSU initiated  
DSU response: Getting System Inventory  
Update status of Broadcom NetXtreme Driver Family from version: [21.40.1] to baseline version: [21.60.1] is: SUCCESS  
.

Updates completed successfully.  
=====

Task completed for updates via OS  
=====

Completed

Figure 10 Task execution details

### 1.3.2 Using individual component updates in the device details page

The user can also use the device details page to update drivers as per baseline recommendations or via an individual DUP upload.

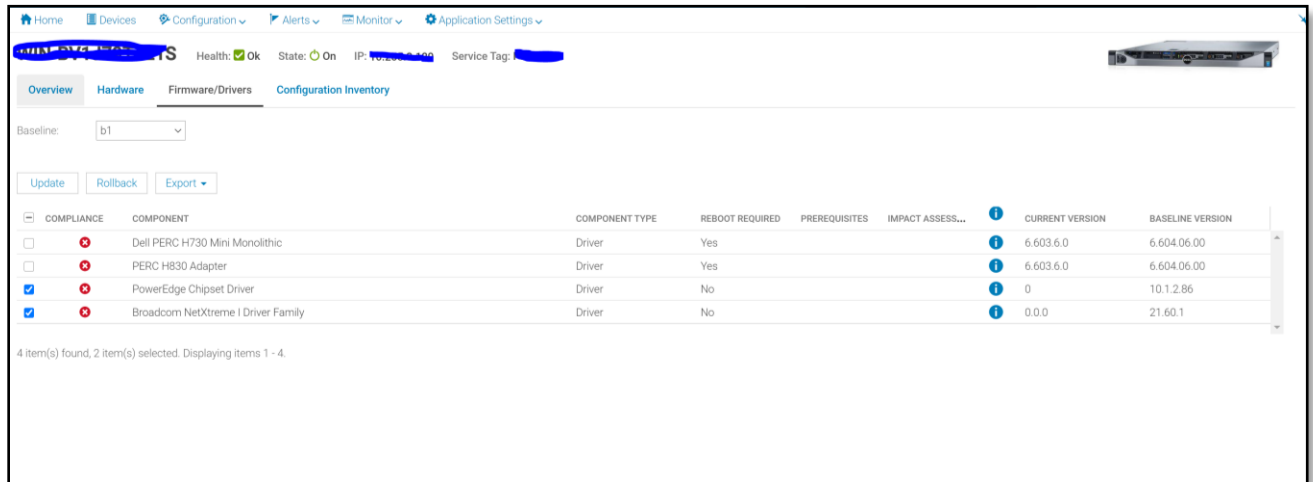


Figure 11 Driver update using device details page

A driver update job is created and listed in the job list for tracking.

## 1.4 Troubleshooting issues with driver inventory and update

Issues	Troubleshooting steps
Driver inventory for servers is not visible.	<p>Verify if the “collect driver inventory” option was checked and if the Windows server was discovered using administrator credentials.</p> <p>Verify if the Inventory Collector application (invcol) is installed and available on the target server. The default install location for this utility is “C:\ProgramData\Dell”.</p> <p>Check monitor service logs for any errors.</p>
Compliance report shows a driver as compliant even though it is not listed in the catalog.	<p>No resolution steps expected from the user.</p> <p>In a follow-up release, components that do not have a reference version in the catalog will show up with an “Unknown” compliance status.</p>
OS driver update is not successful	<p>Verify if “Dell EMC System Update” is installed and available on the target server. The default install location for this utility is “C:\ProgramData\Dell”.</p> <p>Check task execution service logs for any errors.</p>

## A.1 Related resources

[OpenManage Enterprise Version 3.4 and OpenManage Enterprise - Modular Edition Version 1.20.00 RESTful API Guide](#)