

UniVirStor Manager v2.16.19 Release Notes

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UVS Manager 2.16.19 Release Notes

We are delighted to announce the release of UVS manager v2.16.19. v2.16.19 is our first release for Ceph Pacific. The new shipments of Mars 400 will use this version as their default release.

Due to the coming CentOS 8 being phased out. We modified a significant portion of UVS codes to replace CentOS 8 with Ubuntu 18.04.5 LTS and upgrade Ceph to v16.2.5 (Pacific).

This release also provides the new snapshot-based RBD mirroring deployment and management. This improves the user experience of managing RBD mirroring and the performance of RBD mirroring.

Customers can keep using the UVS v2.15.18 (Ceph Octopus) or upgrade it to this new release. If you are using the earlier UVS version, you have to upgrade to v2.15.18 before upgrading to v2.16.19.

The UVS v2.16.19 includes an automatic updater to replace the Linux and upgrade your Ceph cluster to Pacific without interrupting your storage service.

What's New in Ceph Pacific

Please refer to Ceph Pacific release notes.

<https://docs.ceph.com/en/latest/releases/pacific/#v16-2-0-pacific>

What's new in UVS Manager v2.16.19

- **Ceph Version:** 16.2.5 (Pacific)
- **Operating System**
 - Upgrade Linux to Ubuntu 18.04.5 LTS
 - Kernel upgrade to 5.4.119
- **Deployment & Management:**
 - Modify the UVS manager to meet the requirement of deploying ceph Pacific
 - Modify the UVS manager to adopt the change of Ceph Pacific.
 - Modify the console RESTORE function to meet the need of Ceph Pacific.
 - Add a local docker registry container to support the deployment of Ceph services in the environment without an internet connection.
 - Change the container engine from podman to docker.
 - Add date update to node restore function to avoid a restore failure due to node RTC has a large time shift.
- **Network Configuration:**
 - We recommend using separated Ceph cluster and public networks to get better performance for the new deployment. If you are using a combined network and want to adjust the network, please contact Ambedded for support.
- **OSD:** Tuning OSD-related configurations to get better performance.
- **RBD Mirroring:**
 - Modify the RBD mirroring feature in the UVS manager to support snapshot-based mirroring.
 - Add snapshot schedule management.

- Modify Ceph Pool and Image page with additional RBD mirroring status.
- **Ceph File System:** Create subvolume group and subvolume after creating CephFS for the client to mount.

Upgrade Guide

Upgrade to Version 2.16.19

Please read this upgrade note carefully before you start to upgrade your Mars 400 appliance software.

There are three major software upgrades.

1. Linux: Due to the CentOS 8 end-of-life, we have to change the current CentOS 8 and kernel to Ubuntu 18.04.5 and kernel 5.4.119.
2. Upgrade Ceph to version 16.2.5.
3. The new UVS Manager version 2.16.19

Prerequisite

1. Download two update files from Ambedded Help Center.
 - a. ceph-mars400.tar.gz
 - b. 2.16.19.upd
2. Please make sure that your cluster is in HEALTHY status.

The steps to completely upgrade the software are

1. Upgrade the first Monitor node by the node admin console.
2. Upgrade the rest of the monitor nodes by UVS manager.
3. Upgrade the OSD nodes.
4. Upgrade MDS nodes if you have MDS nodes in use.
5. Check the UVS software versions.
6. Upgrade the external RADOS gateways.
7. Upgrade the external iSCSI gateways.
8. Finally, please upgrade all of your ceph clients.
9. ***** It is not necessary to keep the UVS manager open all the time during the update. The updater works in the background. You can close the UVS manager and reopen it to check the result later. *****

If a node fails to upgrade

During the upgrade, the UVS updater will reboot the nodes twice to replace the kernel and CentOS. The time for updating a node is about 10 minutes or longer, depending on the cluster's workload while updating.

The updater will do a rolling upgrade one node by one node. You shall not experience a service stop during the software upgrade. If you meet a failure while upgrading a node, the upgrade program will stop upgrading if the node's upgrade fails. You can skip the failed node and keep upgrading other nodes.

Redo the upgrade on the node that failed to upgrade. If you still get an upgrade failure on the node after repeating the update, don't hesitate to contact Ambedded to get support.

Step1: Upgrade the First Monitor Node

1. Copy two update files (ceph-mars400.tar.gz and 2.15-18.upd) to one of your monitor node's directory **/var/www/html/mars200update**
2. Log in to the BMC of the Mars 400 that hosts the monitor node.
3. Connect the node console by entering "C" and the node number.
4. Login that monitor node with user admin (default pass is admin) to execute the update. Enter the IP address of this node. **(Figure 1)**
5. Wait for the updater to complete the upgrade on this node. The update te will take about 12 minutes.
6. The first stage is to upgrade the kernel, Ubuntu and Ceph. When you see the console output the login prompt, you can log in with the root user to check the Ceph version. (Command: **ceph versions**) (Figure 3)
7. It will take several minutes to convert the Ceph daemons on this node to Ceph containers. You can use the command "**docker ps**" to check if we have converted daemons to containers. Check the Ceph version of Ceph services running on the node with the command: **ceph versions**. (Figure 3)
8. If you see all the containers on this node are up and running, the upgrade is complete.

Figure 1.

Note: Fill the UPD File URL with the IP address of the current node.

```
=====
BMC Simple Command Line Interface
=====
Input Command. Enter 'H' or 'help' to display available commands.
  {C} console      : Console access to module/switch
  {S} status       : Show current machine status
  {A} advance      : Advance module control functions
  {M} maintenance : Advance device maintenance helper comamnds
  {Q} logout       : Logout
  {V} version      : Show software version
  {H} help         : Show help message
=====
Enter command >>>C
```

```
=====
Console Access
=====
Enter [ a|b ] to access switch [ 1|2 ] console.
Enter number [ 1-8 ] to access module [ 1-8 ] console, other key back to up level menu.
While in Console session, press 'ctrl-x' will leave it.
Choice >>>8
=====
Press any key again to start console session...>>>
=====

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```

```
*****
*
*   This system is for the use of authorized users only.   *
*
*****
```

```
Date: 16:56:27 Mon Aug 23 2021
Kernel 5.4.100-MARS400 on an aarch64
```

```
node138-103c login: root
Password:
Last login: Mon Aug 23 12:04:41 from 127.0.0.1
[root@node138-103c ~]# ls /var/www/html/mars200update
2.16.19.upd  ceph-mars400.tar.gz
[root@node138-103c ~]#
[root@node138-103c ~]# su admin
```

Mon, 23 Aug 2021 17:01:44 +0800

```
MARS400 Version 2.15.18 (build at 20210322_164618)
Node: node138-103c (Static)
Node Number(Board ID): 7
```

Main Menu

- Q. Quit
- 1. Shutdown
- 2. Reboot
- 3. Change Password
- 4. Network Configuration
- 5. Change Time Zone
- 6. Update
- 7. Network Diagnostics
- 8. CEPH Diagnostics
- 9. Default Restore Check
- d. Disk Diagnostics

```
Enter Option : 6
Input Update Server IP or
UPD File URL (http:// or https:// ) :192.168.1.138
UPD File Name ? (default is 2.15.19.upd): 2.16.19.upd
```

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*****
*
*   This system is for the use of authorized users only.   *
*
*****

Date: 17:10:40 Mon Aug 23 2021
Kernel 5.4.119-MARS400 on an aarch64

node138-103c login: root
Password:
Last login: Mon Aug 23 17:01:43 CST 2021 on ttyS0
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 5.4.119-MARS400 aarch64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

root@node138-103c:~#
```

Figure 2.

```

MARS400
UFS Manager

*****
*
*   This system is for the use of authorized users only.
*
*
*****
Date: 10:37:10 Tue Mar 2 2021
Kernel 5.4.100-MARS400 on an aarch64
Last Restore return Pass

[node111-1072 login: root
[Password:

```

Figure 3.

```

root@node138-103c:~# ceph versions
{
  "mon": {
    "ceph version 15.2.5 (2c93eff00150f0cc5f106a559557a58d3d7b6f1f) octopus (stable)":
1,
    "ceph version 16.2.5 (0883bdea7337b95e4b611c768c0279868462204a) pacific (stable)": 1
  },
  "mgr": {
    "ceph version 15.2.5 (2c93eff00150f0cc5f106a559557a58d3d7b6f1f) octopus (stable)":
1,
    "ceph version 16.2.5 (0883bdea7337b95e4b611c768c0279868462204a) pacific (stable)": 1
  },
  "osd": {
    "ceph version 15.2.5 (2c93eff00150f0cc5f106a559557a58d3d7b6f1f) octopus (stable)": 4
  },
  "mds": {
    "ceph version 15.2.5 (2c93eff00150f0cc5f106a559557a58d3d7b6f1f) octopus (stable)":
1,
    "ceph version 16.2.5 (0883bdea7337b95e4b611c768c0279868462204a) pacific (stable)": 1
  },
  "rgw": {
    "ceph version 15.2.5 (2c93eff00150f0cc5f106a559557a58d3d7b6f1f) octopus (stable)": 1
  },
  "overall": {
    "ceph version 15.2.5 (2c93eff00150f0cc5f106a559557a58d3d7b6f1f) octopus (stable)":
8,
    "ceph version 16.2.5 (0883bdea7337b95e4b611c768c0279868462204a) pacific (stable)": 3
  }
}

```

```

root@node138-103c:~# docker ps
CONTAINER ID   IMAGE          COMMAND                                     CREATED        STATUS        PORTS
NAMES
58e8f0eac0d6   ceph/ceph:v16 "/usr/bin/ceph-crash..." 2 minutes ago  Up 2 minutes
ceph-c07b438c-03c6-11ec-81ec-08b2a3f0103c-crash.node138-103c
fdeda66916b8   ceph/ceph:v16 "/usr/bin/ceph-mds -..." 2 minutes ago  Up 2 minutes
ceph-c07b438c-03c6-11ec-81ec-08b2a3f0103c-mds.default.node138-103c.tbulwf
9d8b303d8b79   ceph/ceph:v16 "/usr/bin/ceph-mon -..." 2 minutes ago  Up 2 minutes
ceph-c07b438c-03c6-11ec-81ec-08b2a3f0103c-mon.node138-103c
acd1bcddb960   ceph/ceph:v16 "/usr/bin/ceph-mgr -..." 2 minutes ago  Up 2 minutes
ceph-c07b438c-03c6-11ec-81ec-08b2a3f0103c-mgr.node138-103c.xlqzms
root@node138-103c:~# ceph -s
cluster:
  id:          c07b438c-03c6-11ec-81ec-08b2a3f0103c
  health: HEALTH_WARN
             mon is allowing insecure global_id reclaim
             clock skew detected on mon.node136-103a

services:
  mon: 2 daemons, quorum node138-103c,node136-103a (age 2m)
  mgr: node138-103c.xlqzms(active, since 111s), standbys: node136-103a.sinpex
  mds: 1/1 daemons up, 1 standby
  osd: 4 osds: 4 up (since 5h), 4 in (since 5h)
  rgw: 1 daemon active (1 hosts, 1 zones)

task status:
  scrub status:
  mds.cephfs.node137-1038.sjsnjq: idle

data:
  volumes: 1/1 healthy
  pools:   19 pools, 257 pgs
  objects: 261 objects, 12 KiB
  usage:   213 GiB used, 950 GiB / 1.1 TiB avail
  pgs:    257 active+clean

io:
  client: 170 B/s wr, 0 op/s rd, 0 op/s wr

root@node138-103c:~#

```

Step 2. Upgrade other monitors by UVS manager

1. Open the browser to log in to the New UVS manager on the first monitor already upgraded to v2.16.19.
2. Navigate to the Settings → Firmware Update page. Select the monitor nodes that need updating.
3. Click **Push Update** to upgrade the monitors. (Figure 4)
4. Select the rolling update and select 2.16.19.upd file.

- Wait for the upgrade to complete. Every monitor will take 12 minutes to complete the upgrade. (Figure 5)

Figure 4.

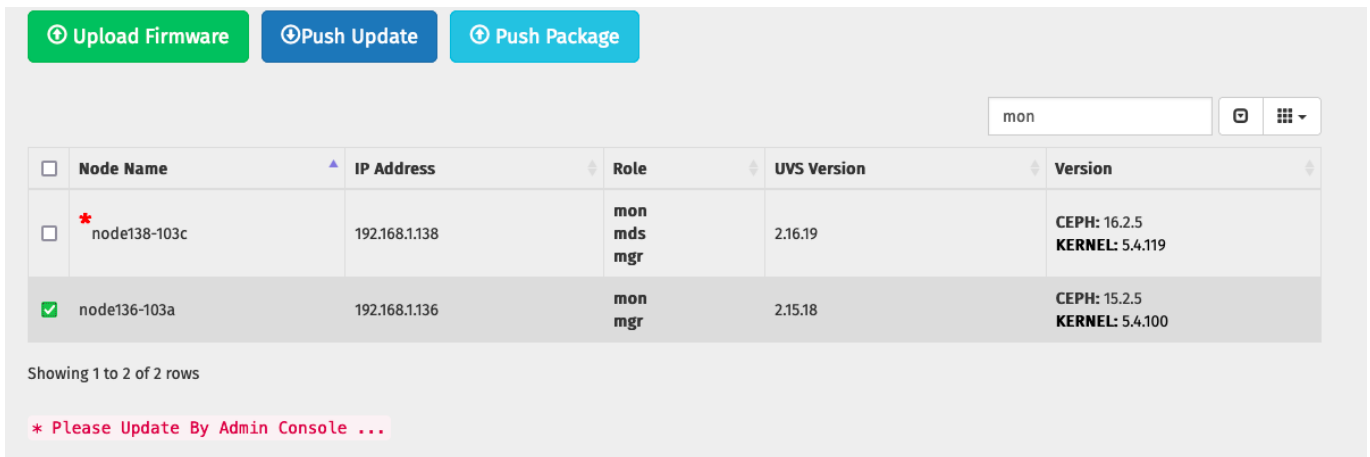
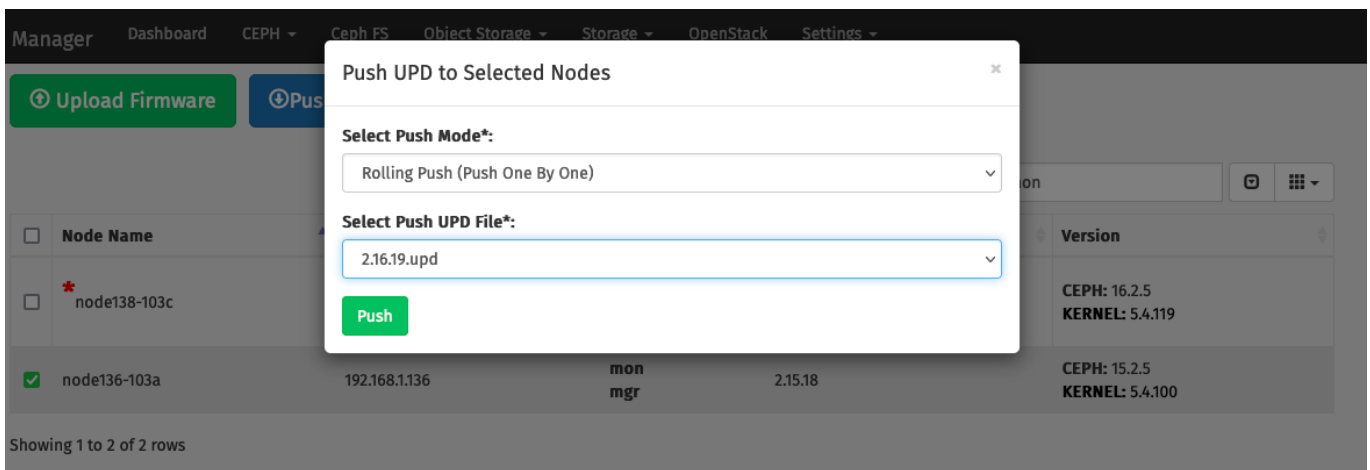


Figure 5.



Step 3. Upgrade OSD nodes.

- Select OSD nodes you want to upgrade.
- We recommend upgrading OSDs in the same chassis by one push.
- Click **Push Update**.
- Wait for the update to complete.
- Repeat these steps until you upgrade all OSDs.

Step 4. Upgrade MDS nodes

- If you have MDS in use, please follow the same steps to upgrade.

Step 5: Check the software version after upgrading.

After completing the upgrade, please check each node's firmware version by navigating to the Settings → Firmware Update.

The correct software versions after this upgrade shall be

1. UVS: 2.16.19
2. Ceph : 16.2.5
3. Kernel: 5.4.119

⌄ Upload Firmware
⌄ Push Update
⌄ Push Package

📷
☰

	Node Name	IP Address	Role	UVS Version	Version
<input type="checkbox"/>	* node138-103c	192.168.1.138	mon mds mgr	2.16.19	CEPH: 16.2.5 KERNEL: 5.4.119
<input type="checkbox"/>	node131-102e	192.168.1.131	osd	2.16.19	CEPH: 16.2.5 KERNEL: 5.4.119
<input type="checkbox"/>	node132-1030	192.168.1.132	osd	2.16.19	CEPH: 16.2.5 KERNEL: 5.4.119
<input type="checkbox"/>	node133-1032	192.168.1.133	osd	2.16.19	CEPH: 16.2.5 KERNEL: 5.4.119
<input type="checkbox"/>	node134-1034	192.168.1.134	osd	2.16.19	CEPH: 16.2.5 KERNEL: 5.4.119
<input type="checkbox"/>	node136-103a	192.168.1.136	mon mgr	2.16.19	CEPH: 16.2.5 KERNEL: 5.4.119
<input type="checkbox"/>	node137-1038	192.168.1.137	mds	2.16.19	CEPH: 16.2.5 KERNEL: 5.4.119

Showing 1 to 7 of 7 rows

Step 6: Upgrade the RADOS Gateway.

If you are using the RGW on Mars 400 nodes, the updater will update the internal RADOS Gateway daemons collocated with monitor nodes. They will work well as they did before upgrading.

If you are using external RADOS gateways, you can stay with the current version or contact Ambedded to offer a free upgrade service.

Step 7: Upgrade the external iSCSI Gateway.

During the firmware update, we have updated the internal iSCSI Gateway daemons collocated with monitor nodes. For the external iSCSI gateways, you could upgrade your Ceph packages manually. You don't have to re-deploy the iSCSI sessions.

- CentOS: # yum update ceph-common
- Debian/Ubuntu: # sudo apt upgrade ceph-common

Upgrade Note

- Upgrade will abort if the M.2 SSD size is less than 64 GB. You need support from Ambedded to make the upgrade for you.
- If you want to scale out your cluster by adding a new Mars 400, BMC must upgrade to the latest version to support configuring the network. Contact Ambedded for help.