



# Concerto™ 7.6.3.4 Release Notes

## For 7000 Series Flash Storage Platform™

**April 2019**

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## Introduction

This document includes the release notes for Concerto OS 7.6.3.4. The software releases are applicable to the 7000 Series Flash Storage Platforms (FSP).

## Supported Flash Storage Platform (FSP) Models

- Violin FSP 7300
- Violin FSP 7450
- Violin FSP 7600
- Violin FSP 7650
- Violin FSP 7700

## Supporting Software

Concerto OS 7.6.3.4 is supported by the following software:

- Aria 7.3.0
- Symphony 3.10.0, 3.9.1, and 3.9.0.8

## Bug Fixes

The Concerto 7.6.3.4 release consists of key bug fixes.

### Concerto Bug Fixes

Concerto 7.6.3.4 includes bug fixes related to dedupe LUNs.

## Resolved Issues

This section lists issues resolved for Concerto.

### Concerto Resolved Issues

Bug	Description
37186	Fix for a potential data-integrity issue when using dedupe LUNs with snapshots in conjunction with an abort event such as an MG takeover/takeback.

## Known Issues

This section lists known issues for Concerto.

### Concerto - Known Issues

None

## Upgrading the Flash Storage Platform

The table in this section identifies the supported starting versions for the 7000 Flash Storage Platform from which to upgrade to Concerto 7.6.3.4.

Previous software versions and upgrade instructions are available from Violin Systems Customer Support at <http://www.violinsystems.com/support-services/>.

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#### Note:

The system you are upgrading should have Aria 7.3.0 or later installed. Contact Violin Systems Customer Support to schedule an upgrade.

Refer to the appendix section in this Release Notes document for the procedure applicable to the upgrade that you need to perform.

---

## Supported Upgrade Paths

The following tables identify the supported *starting* versions for the 7000 Series FSPs and 7700 FSP Controllers from which to upgrade to Concerto 7.6.3.4.

Previous software versions and upgrade instructions are available from Violin Systems Customer Support at <http://www.violinsystems.com/support-services/>.

### 7000 Series FSP

Starting Concerto Version	Upgrade Steps
Earlier than Concerto 7.6.1.3	Upgrade Memory Gateways to Concerto 7.6.1.3 (NDU)
Concerto 7.6.1.3, Build 9166 Concerto 7.6.1.4, Build 9168 Concerto 7.6.2, Build 9207 Concerto 7.6.2.1, Build 9208 Concerto 7.6.3.1, Build 9271 Concerto 7.6.3.2, Build 9273	Upgrade to Concerto 7.6.3.4, Build 9278 directly

## 7700 FSP Controller

Starting Concerto Version	Upgrade Steps
Earlier than Concerto 7.6.1.3	Upgrade to Concerto 7.6.1.3 (NDU)
Concerto 7.6.1.3, Build 9166 Concerto 7.6.2.1, Build 9208 Concerto 7.6.3.1, Build 9271 Concerto 7.6.3.2, Build 9273	Upgrade to Concerto 7.6.3.4, Build 9278 directly

## Appendix A - Procedures

### Configuring Concerto Log Uploads for the HTTP/HTTPS Protocols

Perform the following procedure on both memory gateways:

Edit the `/PRODUCT/concerto/etc/logupload.curlrc` file as follows:

1. Add a proxy server:

```
--proxy = "<proxy server IP>:<port>"
```

2. If the proxy server requires user authentication, then, also add the following line:

```
--proxy--user = "username:password"
```

**Example:**

```
--proxy = "192.168.0.253:8880"  
--proxy-user = "vmem-array:P@ssw0rd"
```

3. Verify that the log uploads are working by using the following command:

```
logsend.sh -D2
```

---

**Note:** If you upgrade the memory gateways, this configuration will be lost. Then, you must reconfigure the log uploads.

---

## Verifying Current Software Version

### Concerto

1. Start a terminal session to the Master Memory Gateway using its IP address or host name.
2. Log in using the following credentials:  
Log in as: "root" Default password: "ViolinMEM1"

```
login as: root
root@lab-fil3368-mg-a.eng.vmem.int's password:
Last login: Mon Apr  8 15:06:15 2019 from 10.12.145.43
#####
##                               AUTHORIZED USERS ONLY                               ##
##                                                                                     ##
##      The information on this computer is protected by                             ##
##      intellectual property rights. Your activity may be                           ##
##      monitored and recorded.                                                       ##
##                                                                                     ##
#####

[root@lab-fil3368-mg-a ~]#
```

3. Type “isscli getserverversion” at the command prompt. For example, if the current version is 7.6.3.2, the following lines are returned:

```
[root@lab-fil3368-mg-a ~]# isscli getserverversion
Version 7.6.3.2, Build 9273
Command: getserverversion executed successfully.
```

## Upgrading the Software

When you upgrade the software from Violin Systems, follow the order described in this section.

### Upgrade Order

You must upgrade the FSP components in the following order:

1. Upgrade the AIX PathManager, if applicable.  
This step requires unmounting file systems and deactivating volume groups on the AIX hosts. Refer to the “PathManager Release Notes for Concerto with AIX 6.1 and 7.1”, document number 535-0268-00 Rev 02.
2. Upgrade the Concerto software on 7000 Series FSP (shelf).
3. Upgrade the Concerto software on the 7700 FSP Controller.

## Prerequisites

How you upgrade the Concerto OS software depends on the current software version running on the Memory Gateways and on whether the FSP is in a High Availability (HA) state. Perform the steps listed in this section to determine both, and then to upgrade the Concerto software.

**Note:** The Memory Gateways must be running 7.6.1.3 or later before upgrading to Version 7.6.3.4. See "Supported Upgrade Paths" for more information. Previous software versions and upgrade instructions are available from Violin Systems Customer Support at <http://www.violinsystems.com/support-services/>.

1. Go to <http://www.violinsystems.com/support-services/>.
2. Log in to the Customer Support portal using your Violin Systems Customer Portal login and password information.

Contact Customer Support if you do not have an account.

3. Click the **Software Downloads** tab.
4. In the navigation pane, go to the Concerto OS folder of version 7.6.3.4 and download the software image to a client computer (laptop).
5. If you are upgrading from 7.5.8.x or earlier, copy the public key file `RPM-GPG-KEY-concerto7` from download folder to both MGs. The key is used to verify the authenticity of the image. Install the key on both MGs:

```
rpm --import RPM-GPG-KEY-concerto7
```

6. Determine the monitor IP address and current version of software, as follows:
  - a. Start a terminal session (SSH) to Memory Gateway A (mg-a) using any IP address that will launch a session on mg-a:

```
ssh root@<hostname-mg-a-mon>
root@<hostname-mg-a-mon>password:
```

If you are currently logged in to the Master ACM, you can log in to mg-a by typing:

```
slogin root@< hostname-mg-a>
```

- b. Issue the "ifconfig eth0" command to determine the monitor IP address of Memory Gateway A/Controller A.

In the following example, 10.5.10.133 is the monitor IP address:

```
[root@lab-fil3368-mg-a ~]# ifconfig eth0
eth0      Link encap:Ethernet  HWaddr 00:90:FB:54:F3:D0
          inet addr:10.5.10.133  Bcast:10.5.15.255  Mask:255.255.240.0
          inet6 addr: fe80::290:fbff:fe54:f3d0/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:59312263 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7255929 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:4743804395 (4.4 GiB)  TX bytes:4304436363 (4.0 GiB)
          Interrupt:20 Memory:dd400000-dd420000
```

- c. Issue the “`concerto status`” command to determine the current software version: For example, if the current version is 7.6.3.2, the following lines are returned:

```
[root@lab-fil3368-mg-a ~]# concerto status

Violin Concerto Server version 7.6.3.2 (Build 9273)
Copyright (c) 2017-2019 Violin Systems LLC. All Rights Reserved.

Status of Concerto Authentication Module           [RUNNING]
Status of Concerto Block Device Module           [RUNNING]
Status of Concerto Base Module                   [RUNNING]
Status of Concerto IO Core Module                [RUNNING]
Status of Concerto Upcall Module                 [RUNNING]
Status of Concerto Log Upload Services           [RUNNING]
Status of Concerto iSCSI Target Module          [RUNNING]
Status of Concerto iSCSI Daemon                 [RUNNING]
Status of Concerto Communication Module         [RUNNING]
Status of Concerto CLI Proxy Module             [RUNNING]
Status of Concerto Logger Module                [RUNNING]
Status of Concerto Email Alerts Module          [RUNNING]
Status of Concerto Statistic Monitoring Module  [RUNNING]
Status of Concerto SNMPD Module                 [RUNNING]
Status of Concerto Self-Monitoring Module       [RUNNING]
Status of Concerto Failover Module              [RUNNING]
```

## Upgrading Concerto OS on a 7000 Series FSP Shelf

1. Copy the downloaded RPM image to the `/root` directory on Memory Gateway A:

### Windows:

```
pscp <filename> root@<hostname-mg-a-mon>:/root (Putty SCP)
scp <filename> root@<hostname-mg-a-mon>:/root (Cygwin SCP)
You can also use WinSCP: Graphical User Interface.
```

### Unix/Linux/Mac OSX:

```
scp <filename> root@<hostname-mg-a-mon>:/root (OpenSSH)
```

2. Start a terminal session (SSH) to Memory Gateway A using its monitor IP address:

```
ssh root@<hostname-mg-a-mon>
root@<hostname-mg-a-mon>password:
```

3. Issue the “`isscli gettriggers`” on both Memory Gateways to display the list of currently enabled triggers. Save the output to a text file.

```
isscli gettriggers 2>&1 | tee mga_triggers.txt
isscli gettriggers 2>&1 | tee mgb_triggers.txt
```

4. Issue the following command if you are upgrading from Concerto 7.5.5.4 or earlier:



```
cp -v /PRODUCT/concerto/etc/ha_preconfig.ini \
/PRODUCT/concerto/etc/ha_preconfig.ini.backup
```

5. Issue the following command to upgrade the Memory Gateways: Usage:

```
rpm_upgrade --rpm-path=<new-rpm-path> \
[--primary-server-password=<primary-server-password>] \
[--secondary-server-password=<secondary-server-password>]
```

**Example:**

```
rpm_upgrade --rpm-path=/root/concerto-7.6.3.4-9278.x86_64-encrypt.rpm \
--primary server-password=ViolinMEM1 \
--secondary-server-password=ViolinMEM1
```

- Upgrade can take up to 30-40 minutes. Please wait while the script is running the commands. For some commands such as “sms”, the script will run periodically.
  - Dedupe enabled systems can take longer than 30 minutes.
  - Script will output “PASSED” if successful, or, it will abort if an error/unexpected output occurs.
6. If the upgrade script fails with the following error, this means that HA is not configured:  
Go to [Upgrading Concerto Software on a Non-HA FSP](#) if you see the following message:  
“Primary server IP is not configured on port eth0:0. Please make sure that HA is configured and primary HA monitor port is eth0.”
  7. If upgrade is successful, check the version of Concerto. In the following example, the current version is 7.6.3.4:

```
[root@lab-fil3368-mg-a ~] # concerto status

Violin Concerto Server version 7.6.3.4 (Build 9278)
Copyright (c) 2017-2019 Violin Systems LLC. All Rights Reserved.
...
```

**Note:** There is more output returned by the “concerto status” command. We are only interested in the version, here.

8. Run the “sms” command to check HA status of both Memory Gateways (a and b):

```
FailOverStatus: 1 (UP)
```

```
[root@lab-fil3368-mg-a ~]# sms
FailOverStatus: 1 (UP)
IO Cache Failover State: GSM_HA_STEADY_STATE
GSM Usage Info: 0MB
Please use sms -u to get usage
[root@lab-fil3368-mg-a ~]#
```

```
[root@lab-fil3368-mg-b ~]# sms
FailOverStatus: 1 (UP)
Please use sms -u to get usage
```

9. Issue the “`isscli gettriggers`” command once again on both Memory Gateways to display the list of currently enabled triggers.  
Compare the output shown with that in the text file saved previously. If the configuration is different, issue the “`isscli enabletriggers`” command to update the triggers.

## Upgrading Concerto OS Software on a 7700 FSP HA Cluster

See steps in this section for upgrading Concerto OS software on devices in a non-stretch cluster environment.

See Upgrading Concerto OS Software on a 7700 FSP Stretched Cluster if you are upgrading 7700 FSP Controllers that are part of a stretched cluster.

---

**Note:** If you are upgrading 7700 FSP Controllers, then contact Violin Systems Support for assistance.

---

1. Verify that the 7700 FSP Controllers and the 7000 Series FSPs are healthy by doing the following steps:
  - a. Run the “`isscli getserverconfiginfo | grep Failover`” command on each 7700 FSP Controller and ensure that Failover is **Normal** and not **Suspended**:

```
[root@card-fil4110-mg-a ~]# isscli getserverconfiginfo | grep Failover
Failover Servers=card-fil4110-mg-a / card-fil4110-mg-b
Configuration Type=Mutual Failover
Failover State=Normal
Failover Suspended=No
Failover Suspended=No
```

- b. Run the “`isscli getserverconfiginfo | grep Failover`” command on each 7000 FSP (shelf) and ensure that Failover is **Normal** and not **Suspended**:

```
[root@card-fil4110-mg-a ~]# isscli getserverconfiginfo | grep Failover
Failover Servers=card-fil4110-mg-a / card-fil4110-mg-b
Configuration Type=Mutual Failover
Failover State=Normal
Failover Suspended=No
Failover Suspended=No
```

2. Upgrade the shelf containing the quorum drives for the 7700 FSP Controllers first.  
See [Upgrading Concerto OS on a 7000 Series FSP Shelf](#) to upgrade the shelf. Failover may occur on controllers because of the shelf upgrade.
3. If failover occurs because of upgrading the shelf (step 2), then bring the 7700 FSP Controllers to a normal state:
  - a. Run the “`sms`” command on both 7700 FSP Controllers.
  - b. If both controllers show status as “1 (UP)”, no action is needed. Go to step 4.
  - c. If one controller shows status as “2 (READY)” and the other controller shows status as “1 (UP)”, run the “`isscli stoptakeover`” command on the controller that shows status

as “1 (UP) “. Wait for the “sms” output of both controllers to show “1 (UP) “ before proceeding to the next step.

- d. If the “sms” output does not meet the above criteria, do not proceed with next step. Wait for 30 minutes, and if the “sms” output is still the same, contact the Customer Support to resolve this issue.

#### 4. Upgrade all shelves.

Follow steps 1-3 above to upgrade all of the shelves. The remaining shelves can be upgraded in parallel. If failover occurs on the 7700 FSP Controllers during the upgrade, wait until all shelves have been upgraded prior to performing step 3.

#### 5. Upgrade the 7700 FSP Controllers.

See [Upgrading a 7700 FSP Controller](#) to upgrade the 7700 FSP Controllers.

## Upgrading Concerto OS Software on a 7700 FSP Stretched Cluster

See steps below for upgrading Concerto OS software on devices in a stretched cluster environment.

---

**Note:** Upgrading 7700 FSP Controllers in a Stretched Cluster configuration causes failover from each site to its partner site while the controller is upgraded. Depending on the ISL configuration and distance between sites, a temporary performance impact may be observed by applications during the upgrade process.

---

1. Verify that the 7700 FSP Controllers and the 7000 Series FSPs at both sites are healthy.
  - a. Run the “isscli getfailoverstatus” command on each 7700 FSP Controller and ensure that Failover is **Normal** and not **Suspended**:

```
[root@card-fil4110-mg-a ~]# isscli getfailoverstatus
Failover Servers=card-fil4110-mg-a / card-fil4110-mg-b
Configuration Type=Mutual Failover
Failover State=Normal
Failover Suspended=No
Stretched Cluster Enabled=No
FailOverStatus=1(UP)
```

- b. Run the “isscli getfailoverstatus” command on each FSP (shelf) and ensure that Failover is **Normal** and not **Suspended**:

```
[root@card-fil4110-mg-a ~]# isscli getfailoverstatus
Failover Servers=card-fil4110-mg-a / card-fil4110-mg-b
Configuration Type=Mutual Failover
Failover State=Normal
Failover Suspended=No
Stretched Cluster Enabled=No
FailOverStatus=1(UP)
```

2. Upgrade all shelves at Site A, one shelf at a time.

See [Upgrading Concerto OS on a 7000 Series FSP Shelf](#) to upgrade a shelf.

- Upgrade all shelves at Site B, one shelf at a time.  
See [Upgrading Concerto OS on a 7000 Series FSP Shelf](#) to upgrade a shelf.
- Verify that the 7700 FSP Controllers are still healthy.  
At one of the stretched cluster sites, connect to monitor IP address of local 7700 FSP Controller then run “isscli getfailoverstatus” command to ensure Failover is **Normal**, not **Suspended**:

```
[root@card-fil4110-exh-a ~]# isscli getfailoverstatus
Failover Servers=card-fil4110-exh-a / card-fil4110-exh-b
Configuration Type=Mutual Failover
Failover State=Normal
Failover Suspended=No
Failover Suspended=No
Stretched Cluster Enabled=No
FailOverStatus=1 (UP) █
```

- Upgrade the 7700 FSP Controllers.  
See [Upgrading a 7700 FSP Controller](#) to upgrade the controllers. Controller failover impacts host application. The traffic over northbound ISL will saturate link, affecting performance.

## Upgrading a 7700 FSP Controller

- Copy the downloaded RPM image to /root directory on Controller A:

Windows:

```
pscp <filename> root@<hostname-mg-a-mon>:/root (Putty SCP)
scp <filename> root@<hostname-mg-a-mon>:/root (Cygwin SCP)
You can also use WinSCP: Graphical User Interface.
```

Unix/Linux/Mac OSX:

```
scp <filename> root@<hostname-mg-a-mon>:/root (OpenSSH)
```

- Start a terminal session (SSH) to Controller A using its monitor IP address.
- Issue the following command to upgrade the controller: Usage:

```
rpm_upgrade --rpm-path=<new-rpm-path> \
[--primary-server-password=<primary-server-password>] \
[--secondary-server-password=<secondary-server-password>]
```

**Example:**

```
rpm_upgrade --rpm-path=/root/concerto-7.6.3.4-9278.x86_64-encrypt.rpm \
--primary-server-password=ViolinMEM1 \
--secondary-server-password=ViolinMEM1
```

# Upgrade can take up to 20-30 minutes. Please wait while the script is running the commands. Some commands like “sms” script will run periodically.

Script will output “**PASSED**” if successful, or, it will abort if an error/unexpected output occurs.

- If the upgrade script fails with the following error, then it means that HA is not configured: “Primary server ip is not configured on port eth0:0. Please make sure that HA is configured and primary ha monitor port is eth0.”

Go to [Upgrading Concerto Software on a Non-HA FSP](#) if you see the above message.

5. If upgrade is successful, check Concerto software version: In the following example, current version is 7.6.3.4:

```
[root@lab-fil4110-mg-a ~] # concerto status
Violin Concerto Server version 7.6.3.4 (Build 9278)
Copyright (c) 2017-2019 Violin Systems LLC. All Rights Reserved.
```

There's more output from "concerto status" command, we are only interested in version here.

6. Run "sms" command to check HA status of both Memory Gateways (a and b): **FailOverStatus: 1(UP)**

```
[root@card-fil4110-mg-a ~]# sms
FailOverStatus: 1(UP)
IO Cache Failover State: GSM_HA_STEADY_STATE
GSM Usage Info: 0MB
Please use sms -u to get usage
```

## Upgrading Concerto Software on a Non-HA FSP

---

**Note:** Upgrading an FSP that is not in HA mode causes I/O disruption. Make sure that any applications using LUNs on the non-HA FSP are shut down before performing this operation.

---

1. Copy the RPM image to both Memory Gateways' host IP addresses (used when running configuration jump-start):

Windows:

```
pscp <filename> root@<hostname-mg-{a|b}-mon>:/root (Putty SCP)
scp <filename> root@<hostname-mg-{a|b}-mon>:/root (Cygwin SCP)
You can also use WinSCP: Graphical User Interface.
```

Unix/Linux/Mac OSX:

```
scp <filename> root@<hostname-mg-{a|b}-mon>:/root (OpenSSH)
```

2. Log in to each Memory Gateway and issue the following commands:

```
concerto stop all
rpm -e concerto
rpm -ivh /root/<rpm-name>
concerto start all
```

## Appendix B

### Violin Systems Customer Support

---

#### Violin Systems LLC

Silicon Valley Center

2560 N. 1st Street, Suite 300

San Jose, CA, 95131

USA

<http://www.violinsystems.com/support-services/>

E-mail: [support@violinsystems.com](mailto:support@violinsystems.com)

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Violin Systems LLC

2560 N. 1st Street, Suite 300

San Jose, CA 95131

USA