

X-Series Storage Controller Replacement Guide

Version 1.2



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X-Series Storage Controller Replacement Guide

This document describes how to replace the storage controllers on a TrueNAS X-Series.

Contacting iXsystems

For assistance, please contact iX Support:

Contact Method	Contact Options
Web	https://support.ixsystems.com
Email	support@ixsystems.com
Telephone	Monday - Friday, 8:00AM to 5:00PM Pacific Standard Time: <ul style="list-style-type: none">• 1 (855) 473-7449 option 2 (US-only toll-free)• 1 (408) 943-4100 option 2 (local and international)
Telephone	After Hours (24x7 Gold Level Support only): <ul style="list-style-type: none">• 1 (855) 499-5131 (US-only toll-free)• 1 (678) 835-6101 (local and international)

Warning: Storage controllers should only be replaced during a maintenance period, or clients using resources on the system could experience interruptions.

X-Series with Single Controller

Warning: This procedure is for a single-controller, non-HA system **only**. The correct procedure for replacing a controller in an HA system is shown later in this document.

Back Up the Configuration

Save a backup of the system configuration by going to *System* → *General*. Click *Save Config*. Set the *Export Password Secret Seed* checkbox.



Click *OK*. Save the downloaded file in a safe location on external media.

Shut Down the Controller

The X-Series can be shut down with the *Shell* from the web user interface by entering this command at the # prompt:

```
shutdown now
```

The system can also be shut down remotely from a system with the IPMItool utility. Enter this command, where *mgmt-ip-addr* is the IP address assigned to the remote management port:

```
ipmitool -H mgmt-ip-addr -U admin -P admin -I lanplus -C3 chassis power off
```

Replace the Controller

After running either the `shutdown` or `ipmitool` command, wait two minutes for the controller to complete the shutdown.

Remove the controller by gently pressing the center blue latch to release the levers. Swing the levers out to release the controller, then slide it out.



Swing the levers open on the replacement controller, then gently slide the controller into the chassis until it stops. Gently swing the levers closed to lock it in place.



X-Series HA System with Dual Controllers

Back Up the Configuration

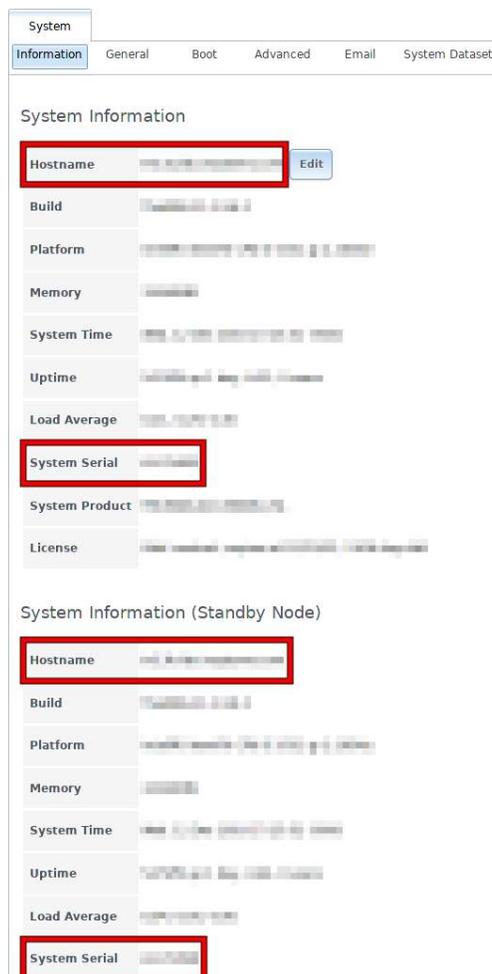
Save a backup of the system configuration by going to *System* → *General*. Click *Save Config*. Set the *Export Password Secret Seed* checkbox.



Click *OK*. Save the downloaded file in a safe location on external media.

Collect Information

From a web browser, log in to the TrueNAS web user interface. Go to *System* -> *Information*. Record the two pairs of *Hostname* and *System Serial* numbers:



Enable SSH

Click on *Services* in the top menu and locate the entry for *SSH*. If it is running, click *Stop Now*. Click the wrench icon for *SSH*. Record the current setting of the *Login as Root with password* checkbox. Enable it if not already set.



Click *OK*, then click the *SSH Start Now* button.

Identify the Standby Node

Click on the *Shell* icon. Connect to the Standby Node with this command (where *standby-node-hostname* is the Standby Node hostname found from the System Information screen earlier):

```
ssh root@standby-node-hostname
```

Note: DNS must be available. If the `ssh` command fails with a `Could not resolve hostname error`, please contact iXsystems Support.

Verify that this node is the Standby Node with this command:

```
hactl
```

Output of `Node status: Passive` verifies that this controller is currently the Standby Node.

Warning: If the status is `Active`, the system might have already performed a failover. Do not continue this procedure, as replacing the active controller can cause a service outage. Go back to the beginning of this procedure and check the current hostnames and serial numbers of the controllers.

After the `Passive` status has been confirmed, find the controller slot location with this command:

```
cat /tmp/.ha_mode
```

Output of `PUMA:A` means the controller is in the A slot, on the left when facing the back of the machine. `PUMA:B` means the controller is in the B slot, on the right when facing the back of the machine.

Confirm Serial Numbers

From the back of the system, confirm that the serial number and left or right slot location for the Standby Node match the values found earlier.



Contact iXsystems Support if the serial number cannot be identified.

Shut Down the Controller

Still in the *Shell*, enter this command to shut down the node:

```
shutdown now
```

The system can also be shut down remotely from a system with the IPMItool utility. Enter this command, where *mgmt-ip-addr* is the IP address assigned to the remote management port:

```
ipmitool -H mgmt-ip-addr -U admin -P admin -I lanplus -C3 chassis power off
```

Replace the Passive Controller

After running either the `shutdown` or `ipmitool` command, wait two minutes for the controller to complete the shutdown.

Remove the controller by gently pressing the center blue latch to release the levers. Swing the levers out to release the controller, then slide it out.



Swing the levers open on the replacement controller, then gently slide the controller into the chassis until it stops. Gently swing the levers closed to lock it in place.



Wait for HA Status Good

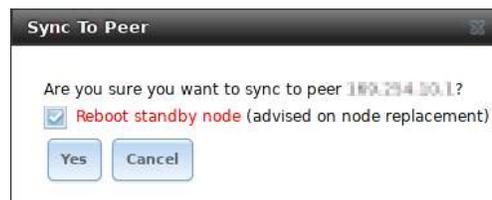
Log in to the web user interface and locate the HA status icon in the upper right:



Wait at least two minutes for this icon to turn green, indicating that the system has duplicated the configuration to the new controller.

Sync and Reboot the New Controller

In the web user interface, go to *System* → *Failover*. Click *Sync To Peer*.



Make sure that *Reboot standby node (advised on node replacement)* is set, then click *Yes*.

The configuration database is synchronized onto the new controller, then that controller is rebooted. The update sometimes must reboot the new controller twice. During this process, the HA status icon turns red, then back to green after a reboot. Wait at least ten minutes after the icon turns green before continuing with the next step.

Replace the Second Controller

Still in the *Shell*, connect to the active controller with this command: `ssh root@active-node-hostname`

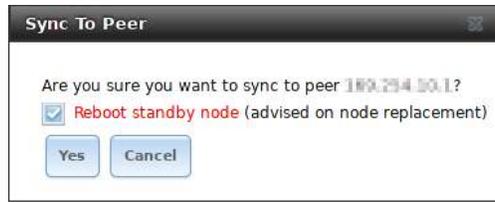
Shut this controller down to cause a failover to the other controller with: `shutdown now`

Wait two minutes for the controller to complete the shutdown.

Remove the controller by gently pressing the center blue latch to release the levers. Swing the black levers out to release the controller, then slide it out. Swing the levers open on the replacement controller, then gently slide the controller into the chassis until it stops. Gently swing the levers closed to lock it in place.

Sync and Reboot the Second New Controller

In the web user interface, go to *System* → *Failover*. Click *Sync To Peer*.



Make sure that *Reboot standby node (advised on node replacement)* is set, then click *Yes*.

The configuration database is synchronized onto the new controller, then that controller is rebooted. The update sometimes must reboot the new controller twice. During this process, the HA status icon turns red, then back to green after a reboot. Wait at least ten minutes after the icon turns green before continuing with the next step.

Restore SSH State

If the *Login as Root with password* field was changed in this procedure, click *Services* in the top menu, then the *SSH wrench*, then disable *Login as Root with password*. Click *OK* to save the setting. If SSH was disabled before this procedure, click the *SSH Stop Now* button.

Process Complete

Replacement is complete. Pack and return the replaced controllers to iXsystems.

iXsystems Support can be contacted at support@ixsystems.com or **1-855-GREP4-IX** (1-855-473-7449) or 1-408-943-4100.