Dell Unity™ Family Replacing a Faulted 2U DPE

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This document describes how to replace a faulted 2U DPE in Unity 300/300F/350F/380/380F, Unity 400/400F/450F, Unity 500/500F/550F, and Unity 600/600F/650F systems.

You will remove the faulted 12-slot or 25-slot 2U DPE (disk processor enclosure) and install the replacement DPE, of the same type, from the front of the system. During this procedure you will transfer certain parts from the faulted DPE into the replacement DPE.

ⓘ **NOTE:** This task on the system involves powering down the SPs. When all SPs are down, all I/O services stop and hosts lose access to the system. Once one or both SPs become available to the system, I/O services to hosts will resume.

⚠ **WARNING:** On a system with Data at Rest Encryption enabled, follow the standard process to replace faulted parts. Improperly removing hardware can cause data to be inaccessible.

Replacing the DPE and both SPs requires a special procedure since the keystore is tied to the hardware. Do not replace all three parts at once, rather retain an SP until the DPE is online before replacing it. If all hardware was replaced, restore the keystore from a backup.

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Before you start

ⓘ **NOTE:** This task on the system involves powering down the SPs. When all SPs are down, all I/O services stop and hosts lose access to the system. Once one or both SPs become available to the system, I/O services to hosts will resume.

Before performing this procedure, you should disconnect all network shares and LUNs from each host to prevent data loss. Once the system is fully powered up, you can reconnect the hosts to these storage resources.

⚠ **WARNING: Pay careful attention when installing SAS cable connectors into the system SAS ports. Improper installation can cause damage to the chassis requiring a complete chassis replacement. If you meet resistance when installing the cable connector into the SAS port, ensure that you are installing the connector in the correct orientation before continuing.**

Additional resources

As part of an improvement effort, revisions of the software and hardware are periodically released. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features. Contact your technical support professional if a product does not function properly or does not function as described in this document.

Where to get help

Support, product, and licensing information can be obtained as described below.

Product information

For product and feature documentation or release notes, go to Unity Technical Documentation at: https://www.dell.com/unitydocs.

Troubleshooting

For information about products, software updates, licensing, and service, go to Support (registration required) at: https://www.dell.com/support. After logging in, locate the appropriate product page.

Handling replaceable units

This section describes the precautions that you must take and the general procedures that you must follow when removing, installing, and storing any replaceable unit.

Avoiding electrostatic discharge (ESD) damage

When replacing or installing hardware units, you can inadvertently damage the sensitive electronic circuits in the equipment by simply touching them. Electrostatic charge that has accumulated on your body discharges through the circuits. If the air in the work area is very dry, running a humidifier in the work area will help decrease the risk of ESD damage. Follow the procedures below to prevent damage to the equipment.

Be aware of the following requirements:

- Provide enough room to work on the equipment.
- Clear the work site of any unnecessary materials or materials that naturally build up electrostatic charge, such as foam packaging, foam cups, cellophane wrappers, and similar items.
- Do not remove replacement or upgrade units from their antistatic packaging until you are ready to install them.
- Before you begin service, gather together the ESD kit and all other materials you will need.
- Once servicing begins, avoid moving away from the work site; otherwise, you may build up an electrostatic charge.
- Use ESD anti-static gloves or an ESD wristband (with strap).

If using an ESD wristband with a strap:

- ○ Attach the clip of the ESD wristband to the ESD bracket or bare metal on a cabinet/rack or enclosure.
- ○ Wrap the ESD wristband around your wrist with the metal button against your skin.
- ○ If a tester is available, test the wristband.
- ● If an emergency arises and the ESD kit is not available, follow the procedures in Emergency Procedures (without an ESD kit).

Emergency procedures (without an ESD kit)

In an emergency when an ESD kit is not available, use the following precautions to reduce the possibility of an electrostatic discharge by ensuring that your body and the subassembly are at the same electrostatic potential.

(i) **NOTE:** These precautions are not a substitute for the use of an ESD kit. Follow them only in the event of an emergency.

- ● Before touching any unit, touch a bare (unpainted) metal surface of the cabinet/rack or enclosure.
- ● Before removing any unit from its antistatic bag, place one hand firmly on a bare metal surface of the cabinet/rack or enclosure, and at the same time, pick up the unit while it is still sealed in the antistatic bag. Once you have done this, do not move around the room or touch other furnishings, personnel, or surfaces until you have installed the unit.
- ● When you remove a unit from the antistatic bag, avoid touching any electronic components and circuits on it.
- ● If you must move around the room or touch other surfaces before installing a unit, first place the unit back in the antistatic bag. When you are ready again to install the unit, repeat these procedures.

Hardware acclimation times

Units must acclimate to the operating environment before applying power. This requires the unpackaged system or component to reside in the operating environment for up to 16 hours in order to thermally stabilize and prevent condensation.

Table 1. Hardware acclimation times (systems and components)

If the last 24 hours of the TRANSIT/ STORAGE environment was this:		...and the OPERATING environment is this:	...then let the system or component acclimate in the new environment this many hours:
Temperature	Humidity		
Nominal 68-72°F (20-22°C)	Nominal 40-55% RH	Nominal 68-72°F (20-22°C) 40-55% RH	0-1 hour
Cold <68°F (20°C)	Dry <30% RH	<86°F (30°C)	4 hours
Cold <68°F (20°C)	Damp ≥30% RH	<86°F (30°C)	4 hours
Hot >72°F (22°C)	Dry <30% RH	<86°F (30°C)	4 hours
Hot >72°F (22°C)	Humid 30-45% RH	<86°F (30°C)	4 hours
	Humid 45-60% RH	<86°F (30°C)	8 hours
	Humid ≥60% RH	<86°F (30°C)	16 hours
Unknown		<86°F (30°C)	16 hours

(i) **NOTE:**
- ● If there are signs of condensation after the recommended acclimation time has passed, allow an additional eight (8) hours to stabilize.

- Systems and components must not experience changes in temperature and humidity that are likely to cause condensation to form on or in that system or component. Do not exceed the shipping and storage temperature gradient of 45°F/hr (25°C/hr).

Removing, installing, or storing replaceable units

Use the following precautions when removing, handling, or storing replaceable units:

⚠ **CAUTION: Some replaceable units have the majority of their weight in the rear of the component. Ensure that the back end of the replaceable unit is supported while installing or removing it. Dropping a replaceable unit could result in personal injury or damage to the equipment.**

ⓘ **NOTE:**
- For a module that must be installed into a slot in an enclosure, examine the rear connectors on the module for any damage before attempting its installation.
- A sudden jar, drop, or even a moderate vibration can permanently damage some sensitive replaceable units.

- Do not remove a faulted replaceable unit until you have the replacement available.
- When handling replaceable units, avoid electrostatic discharge (ESD) by wearing ESD anti-static gloves or an ESD wristband with a strap. For additional information, refer to Avoiding electrostatic discharge (ESD) damage .
- Avoid touching any exposed electronic components and circuits on the replaceable unit.
- Never use excessive force to remove or install a replaceable unit. Take time to read the instructions carefully.
- Store a replaceable unit in the antistatic bag and the specially designed shipping container in which you received it. Use the antistatic bag and special shipping container when you need to return the replaceable unit.
- Replaceable units must acclimate to the operating environment before applying power. This requires the unpackaged component to reside in the operating environment for up to 16 hours in order to thermally stabilize and prevent condensation. Refer to Hardware acclimation times to ensure the replaceable unit has thermally stabilized to the operating environment.

ⓘ **NOTE:**

Your storage system is designed to be powered on continuously. Most components are hot swappable; that is, you can replace or install these components while the storage system is running. However, the system requires that:

- Front bezels should always be attached to ensure EMI compliance. Make sure you reattach the bezel after replacing a component.
- Each slot should contain a component or filler panel to ensure proper air flow throughout the system.

Unpacking a part

Steps

1. Wear ESD gloves or attach an ESD wristband to your wrist and the enclosure in which you are installing the part.
2. Unpack the part and place it on a static-free surface.
3. If the part is a replacement for a faulted part, save the packing material to return the faulted part.

Standard touch point colors

Touch points are component locations where you can:

- Grip the hardware to remove or install a component.
- Open or close a latch.
- Turn a knob to open, close, or adjust a component.

Standard touch point colors are terra-cotta (orange) or blue.

ⓘ **NOTE:** Within this documentation, the color orange is used instead of terra-cotta for simplicity.

Table 2. Standard touch point colors

Touch point color	Description
Terra-cotta (orange)	This color indicates that you can perform the task, such as remove a component with a terra-cotta (orange) lever, while the system remains powered (up/on). ⓘ **NOTE:** Some tasks may require additional steps.
Blue	This color indicates that a shutdown of the system or component is required before you can perform the task, such as removing a component with a blue lever.

Summary of tasks for replacing a DPE

To replace a DPE, you must complete the tasks below in the order in which they appear. This document provides instructions for completing each task:

1. Identify the faulted enclosure.
2. Shutdown the faulted enclosure.
3. Disconnect the cables from the faulted enclosure.
4. Remove the faulted enclosure's front bezel.
5. Remove the faulted enclosure and place it on a work surface.
6. Unpack the replacement enclosure.
7. Install the replacement enclosure in the cabinet.
8. Transfer the faulted enclosure's components to the replacement enclosure:
   a. Transfer the storage processor (SP) assemblies.
   b. Transfer all the disks and any disk filler modules.
9. Connect the cables to the back of the replacement enclosure.
10. Power up the replacement enclosure.
11. Update the enclosure with the system WWN and serial number.
12. Verify enclosure status.
13. Reinstall the enclosure's front bezel.
14. Verify the operation of the replacement enclosure.

Tools required:

- Phillips screwdriver
- Wire cutters or equivalent

Identifying and locating the faulted 2U DPE

Before you replace a faulted 2U DPE , you must locate its placement within the storage system by using Unisphere.

About this task

Using Unisphere, locate the faulted 2U DPE in the enclosure.

Steps

1. In Unisphere, select **System View**.
2. Select the **Enclosures** page.

   Select the DPE in the **Enclosure** dropdown menu and select the **Front** view of the enclosure. Locate the new DPE shown in this enclosure view.

3. Locate the faulted 2U DPE marked orange and displayed in the **Enclosure** view shown.

Figure 1. Faulted 25-drive DPE - example

Shutting down the enclosure

About this task

This system shut down or power down process involves placing both SPs into Service mode before eventually disconnecting the power cords for the power supplies. When all SPs are down, all I/O services stop and hosts lose access to the system.

It is recommended that you disconnect all network shares, LUNs, and VMware datastores from each host to prevent data loss. When the system is fully powered on, you can reconnect the hosts to these storage resources.

Use the procedure that follows to place both SPs into Service mode to safely stop all system processes before you replace the faulted DPE.

ⓘ **NOTE:** See the *DC-Powered Unity Enclosures: Installation and operation guide* for instructions on how to power down and power up a DC powered system (physical deployments only).

Steps

1. Collect and record site and system details:

   ⓘ **NOTE:** Immediately upon booting the SPs in the replacement enclosure you may need to contact EMC Remote Support to perform certain steps that require root access to the system.

Service Password	
Serial Number	
Site ID	
OE version	

2. Using an SSH/Telnet client, such as PuTTY, type the system IP address and login as the service user.
3. Put both SPs in Service Mode and power off the system:

   Issue both of these commands to each SP.

   ```
   svc_rescue_state -s
   svc_shutdown --halt-local
   ```

   ⓘ **NOTE:** This process can take between 10 and 20 minutes to complete. During this time, the connection to the system will be lost and you will not have access to Unisphere or the online help.

4. Wait until the SP fault LEDs on both storage processors are flashing alternating amber and blue before continuing to the next task.

The SP fault LED flashes alternating amber and blue while the SP remains in Service mode and is receiving active power.

Figure 2. SP fault LED

Replacing the faulted 2U DPE

Take the following actions to remove the faulted 2U DPE and install the replacement 2U DPE into the system.

Disconnecting cables from the DPE

About this task

Steps

1. Label the two power cords (A or B), release the cable retention bail, and unplug the power cord from the power supply.

   ⓘ **NOTE:** To ensure that all write-cache memory is saved (using battery backup power), allow the storage processors to power off completely by waiting sixty seconds after you unplug the power cables. Make sure no LEDs on either SP are lit before continuing.

2. Label and unplug the LAN cables from the management port and all front-end connections.
3. Label each SAS back-end cable and unplug it.

   To unplug a SAS cable, pull back the release tab and then pull the cable connector from the port.
4. Label each front-end I/O cable with the SP (A or B), slot number, and the number of the port to which it is connected and then unplug it.

Removing the front bezel

Steps

1. If the bezel has a lock, insert the key that shipped with your enclosure into the lock, and turn the key to unlock the bezel.
2. Press the two latch buttons on the bezel surface to release the bezel from the cabinet.
3. Pull the bezel off the cabinet and put it on a clean, static-free surface.

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Figure 3. Removing the front bezel

Removing the DPE from the cabinet

About this task

ⓘ **NOTE:** Do NOT remove parts, such as SP assemblies or disks, from the faulted DPE before removing the enclosure from the cabinet. Doing so greatly increases the risk of returning a component to the wrong slot in the replacement enclosure, which can result in data loss.

⚠ **CAUTION:**

The enclosure is heavy and should be installed into or removed from a rack by two people. To avoid personal injury and/or damage to the equipment, do not attempt to lift and install the enclosure into a rack without a mechanical lift and/or help from another person.

L'armoire étant lourde, sa mise en place sur une rampe nécessite deux personnes. Afin de ne pas vous blesser et/ou endommager le matériel, n'essayez pas de soulever et d'installer l'armoire sur une rampe sans avoir recours à un relevage mécanique et/ou à l'aide d'une autre personne.

Das Gehäuse ist schwer und sollte nur von zwei Personen in einem Rack installiert werden. Zur Vermeidung von körperlichen Verletzungen und/oder der Beschädigung des Gerätes, bitte das Gehäuse nicht ohne die Hilfe einer zweiten Person anheben und einbauen.

Il contenitore è pesante e dev'essere installato nel rack da due persone. Per evitare danni personali e/o all'apparecchiatura, non tentare di sollevare ed installare in un rack il contenitore senza un sollevatore meccanico e/o l'aiuto di un'altra persona.

Debido a su considerable peso, la instalación del compartimento en el bastidor deben realizarla siempre dos personas. Para evitar daños personales o en el equipo, el compartimento no debe levantarse ni instalarse en el bastidor sin la ayuda de un elevador mecánico o de otra persona.

本設備相當沉重，安裝置機架時應由兩人搬動。切勿在未經機械搬動車和 (或) 他人協助的情況下，獨自搬動和安裝本設備，以免受傷和 (或) 損壞設備。

Steps

1. Remove the four screws (two per side) that secure the front of the enclosure to the front vertical channels of the cabinet, and save the screws.

Figure 4. Removing the screws that secure the enclosure to the front of the cabinet

2. With help from another person, slide the enclosure out of the cabinet and place it on a sturdy, static-free work surface.

Figure 5. Sliding the enclosure out of the cabinet

Unpacking a part

Steps

1. Wear ESD gloves or attach an ESD wristband to your wrist and the enclosure in which you are installing the part.
2. Unpack the part and place it on a static-free surface.
3. If the part is a replacement for a faulted part, save the packing material to return the faulted part.

Transferring the Dell Service Tag and Agreement ID

Steps

1. Copy the Dell Service Tag (DST) number from the faulted DPE onto one of the blank labels that came with the new DPE.

The DST is located on the left-hand side of the black pull tab located on the right-hand side of the front of the DPE.

2. Place the new DST label on the left-hand side of the black pull tab located on the right-hand side of the front of the DPE.
3. Copy the Agreement ID from the faulted DPE onto one of the blank labels that came with the new DPE.

    The Agreement ID is located on the top of the DPE on the front-left corner.
4. Place the new Agreement ID label on the top of the DPE on the front-left corner.

Installing the empty replacement DPE on the rails

About this task

⚠ CAUTION:

The enclosure is heavy and should be installed into or removed from a rack by two people. To avoid personal injury and/or damage to the equipment, do not attempt to lift and install the enclosure into a rack without a mechanical lift and/or help from another person.

L'armoire étant lourde, sa mise en place sur une rampe nécessite deux personnes. Afin de ne pas vous blesser et/ou endommager le matériel, n'essayez pas de soulever et d'installer l'armoire sur une rampe sans avoir recours à un relevage mécanique et/ou à l'aide d'une autre personne.

Das Gehäuse ist schwer und sollte nur von zwei Personen in einem Rack installiert werden. Zur Vermeidung von körperlichen Verletzungen und/oder der Beschädigung des Gerätes, bitte das Gehäuse nicht ohne die Hilfe einer zweiten Person anheben und einbauen.

Il contenitore è pesante e dev'essere installato nel rack da due persone. Per evitare danni personali e/o all'apparecchiatura, non tentare di sollevare ed installare in un rack il contenitore senza un sollevatore meccanico e/o l'aiuto di un'altra persona.

Debido a su considerable peso, la instalación del compartimento en el bastidor deben realizarla siempre dos personas. Para evitar daños personales o en el equipo, el compartimento no debe levantarse ni instalarse en el bastidor sin la ayuda de un elevador mecánico o de otra persona.

本設備相當沉重，安裝置機架時應由兩人搬動。切勿在未經機械搬動車和 (或) 他人協助的情況下，獨自搬動和安裝本設備，以免受傷和 (或) 損壞設備。

Steps

1. Lift the enclosure and, from the front of the cabinet, slide the enclosure onto the rails.

Figure 6. Sliding the enclosure onto the rails

2. Secure the front of the enclosure to the front vertical channels of the cabinet using four screws (two per side) by installing all four screws, and then tightening them.

Figure 7. Securing enclosure to the front of the cabinet

Transferring parts from the faulted DPE to the replacement DPE

Use the procedures in this section to transfer the components from the faulted DPE to the corresponding locations in the replacement DPE.

To help ensure the correct placement in the enclosure:

- Transfer one component at a time.
- Transfer power supplies.

- Transfer I/O modules and fillers.
- Transfer the SP assembly from the A side.
- Transfer the SP assembly from the B side.
- Transfer each disk and disk filler module to the SAME SLOT LOCATION that it occupied in faulted DPE.

Removing an SP assembly

Steps

1. Pull the torque limit screw handle out of the SP assembly (1).
2. Turn the handle counterclockwise to release the SP assembly from the enclosure (1).

   As the handle is turned, the SP assembly extracts out of the enclosure. When outward movement stops, the SP assembly is ready for removal.

   > ⚠ **CAUTION: The SP assembly comes completely out of the enclosure. Be prepared to support the SP assembly to avoid dropping it.**

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Figure 8. Remove an SP assembly

3. Use the handle to pull the SP assembly outward enough to grasp the sides with both hands (2). Then with both hands supporting the SP assembly, pull the SP assembly fully out of the enclosure.
4. Place the SP assembly on a clean static-free work surface.
5. Repeat this procedure to remove the remaining SP assembly.

Installing an SP assembly

About this task

ⓘ **NOTE:** You must transfer the SP assembly to the exact corresponding slot in the replacement chassis that it was removed from.

Steps

1. Align the SP assembly with the enclosure slot and slide it into the slot until it stops.
2. Turn the orange torque limit screw handle clockwise until you hear a click sound from the handle (1). The click sound indicates the torque limit is reached and the SP assembly is seated in the enclosure.
3. Push the orange torque limit screw handle into the SP assembly until you hear a click sound from the handle (2). The click sound indicates screw handle is secured in the assembly.

Figure 9. Installing the SP assembly

4. Repeat this procedure to install the remaining SP assembly.

Transferring disks and disk filler modules

Starting with the disk or disk filler module in slot 0, transfer disks and any disk filler modules one at a time from the faulted enclosure to the replacement enclosure.

ⓘ **NOTE:** Make sure to transfer the disks and any disk filler modules to the same slots in the replacement enclosure that they occupied in the faulted enclosure. Installing disks out of their original order results in data unavailability, and possible data loss.

Removing a 3.5" disk

Steps

1. Attach an ESD wristband to your wrist and the enclosure.
2. Press the orange tab in and pull the ejector handle out (1); do not pull the handle past 45 degrees from the disk (2).
3. slowly pull the disk completely out of the slot (3).

Figure 10. Removing a 3.5" disk

4. Place the disk on a static-free surface.

Installing a 3.5" disk

About this task

ⓘ **NOTE:** You must transfer the disk to the exact corresponding slot in the replacement chassis that it was removed from.

Steps

1. Attach an ESD wristband to your wrist and the enclosure in which you are installing the disk.
2. Align the disk with the guides in the slot.
3. Ensure the ejector handle is open at a 45 degree angle from the drive.
4. Gently push the disk into the slot by pressing on the right-most thumb space.
5. Engage the ejector handle to fully seat the disk.

Figure 11. Installing a 3.5" disk

Removing a disk filler module

Steps

1. Insert your thumb into the cutout on the right side of the disk filler module (2).
2. With your finger push in the latch on the left side of the disk filler module, and pull the module out of the slot.

Figure 12. Removing a disk filler module

Installing a disk filler

Steps

1. Insert your thumb into the cutout on the right the disk filler module.
2. With your finger push in the latch on the left of the disk filler module and push the module into the slot until it clicks into place.

Figure 13. Installing a disk filler module

Removing a 2.5" disk

Steps

1. Attach an ESD wristband to your wrist and the enclosure.
2. Press the orange tab in and pull the ejector handle out (1); do not pull the handle past 45 degrees from the disk (2).
3. slowly pull the disk completely out of the slot (3).

Figure 14. Removing a 2.5" disk

4. Place the disk on a static-free surface.

Installing a 2.5" disk

About this task

ⓘ **NOTE:** You must transfer the disk to the exact corresponding slot in the replacement chassis that it was removed from.

Steps

1. Attach an ESD wristband to your wrist and the enclosure in which you are installing the disk.
2. Align the disk with the guides in the slot.
3. Ensure the ejector handle is open at a 45 degree angle from the drive.
4. Gently push the disk into the slot by pressing on the right-most thumb space.
5. Engage the ejector handle to fully seat the disk.

Figure 15. Installing a 2.5" disk

Removing a disk filler module

Steps

1. Insert your thumb into the cutout on the right side of the disk filler module (2).
2. With your finger push in the latch on the left side of the disk filler module, and pull the module out of the slot.

Figure 16. Removing a disk filler module

Installing a disk filler

Steps

1. Insert your thumb into the cutout on the right the disk filler module.
2. With your finger push in the latch on the left of the disk filler module and push the module into the slot until it clicks into place.

Figure 17. Installing a disk filler module

Connecting cables to the replacement DPE

About this task

Perform the procedure that follows. Make sure that you consult the labels you added when you removed the cables to ensure that you connect the correct cable to its correct connector.

Steps

1. Plug each front-end I/O cable into the I/O module port from which you removed it.
2. Plug each SAS cable to the SP assembly back-end port from which it was removed.
3. Connect the LAN cables to the management port and front-end connectors.
4. Connect the power cords to the power supplies.

Initiate temporary root user on the system

About this task

To gain temporary access on a fully powered on Unity system:

Steps

1. Use an SSH/Telnet client, such as PuTTY, use the system IP address and login as the service user.
2. Initiate a root session:

   svc_service_shell

   - If root access is available, the service prompt returns:

     ```
     INFO: Successfully enabled svc_service_shell
     The svc_service_shell service tool will expire in:
     ```

```
2 day(s), 7 hour(s), 4 minute(s) and 28 second(s).

--- Start of service shell session ---

*** WARNING *** Unity service shell activated! *** WARNING ***
root@spb:/cores/service>
```

Continue to the next task.

- If root access has expired, the service prompt returns:

```
ERROR: service tool has expired!
Error executing the service-tool. Exiting ...
```

The root password has expired and must be renewed.

3. Use the `svc_inject -k` process to renew root access.

   a. On the system, generate the current challenge string:

   `svc_inject -k`

   ```
   Current Challenge: 6C57C-54307-ADE7F-02F4D-4FB76-1234
   ```

   b. From a web-connected device with access to the Dell internal network, go to https://hubv1.corp.emc.com/services/service_key_generator and launch the Service Key Generator to enter the current challenge string and generate a new service key.

   ⓘ **NOTE:** If you do not have access to the Dell network, contact Remote Support for assistance generating the new service key.

   If you have not yet added the Service Key Generator to your desktop on The Hub, enter **Service Key Generator** in the search bar. From the search result, you can add the Service Key Generator to your desktop or launch the it in app mode.

   c. Select the **Product Release**.

   d. Select the **Challenge String** method.

   e. Copy the current challenge string to the Service Key Generator, complete the remaining required fields, and then click **Generate**.
   The site generates a response key in the Key Details section.

   f. On the system, re-run `svc_inject -k` and include the generated response key.

   `svc_inject -k` *<generated_service_key>*

   For example:

   spb:~> **`svc_inject -k 1D1DC-9B506-351A7-2F08B-BCB14-75DB7-AC7E3-1234-01`**

   ⓘ **NOTE:** This injects root access to the system. You must still initiate the root session each time you connect via SSH for that particular user Shell session using the `svc_service_shell` command.

   g. Once completed, initiate a root session:

   `svc_service_shell`

   ```
   INFO: Successfully enabled svc_service_shell
   The svc_service_shell service tool will expire in:
   2 day(s), 7 hour(s), 4 minute(s) and 28 second(s).

   --- Start of service shell session ---

   *** WARNING *** Unity service shell activated! *** WARNING ***
   root@spb:/cores/service>
   ```

   Continue to the next task.

Set system values on to the replacement DPE

Prerequisites

The storage processors should be booted into service mode in the replacement DPE.

About this task

While the storage processors are in service mode, set the system values on the replacement DPE:

Steps

1. As root, run on one of the SPs, fix the serial numbers on the replacement DPE: **sptool –fixserialnumber**.
2. As root, update the WWN seed on the replacement chassis to the value from the previous DPE: **svc_change_hw_config -c -update_wwn_seed**
3. When the command is finished, exit the root user section.
4. As gthe service user, clear the counters and restart both SPs in normal mode.

   Issue the following commands to each SP:
   - **svc_rescue_state -c**
   - **svc_shutdown -r**

Next steps

Go to "Verifying the DPE status."

Set system values on the replacement DPE (D@RE-enabled systems)

Prerequisites

About this task

Steps

1. For Data at Rest Encryption (D@RE)-enabled systems, you must log in as root on one of the SPs and update the EMC TLA serial number to the same serial number as the old DPE: **speclcli -setresume 30**

   ⓘ **NOTE:** For systems that have Data at REST Encryption (D@RE) enabled, the TLA serial number must be the same number as the old DPE enclosure. This older serial number is required for lockbox access.

   The following example shows the **speclcli -setresume 30** command being used to set the older serial number for lockbox access:

```
spa:~# speclcli –setresume 30

Device: Midplane
EMC TLA Part Number (16 characters)[100-542-901-02]:
EMC TLA Artwork Revision (3 characters)[]:
EMC TLA Assembly Revision (3 characters)[]:
Semaphore (1 byte, use hex)[0x00]:
EMC TLA Serial Number (16 characters)[CF2CV144200077]: input old enclosure's TLA SN
here
EMC System HW Part Number (16 characters)[100-542-921-02]:
EMC System HW Serial Number (16 characters)[FNM00144502264]:
EMC System HW Revision (3 characters)[]:
EMC Product Part Number (16 characters)[900-542-002]:
EMC Product Serial Number (16 characters)[FNM00144502269]:
EMC Product Revision (3 characters)[▓▓▓▓]:
Vendor Part Number (32 characters)[]:
Vendor Artwork Revision (3 characters)[]:
Vendor Assembly Revision (3 characters)[]:
Vendor Unique Revision (4 characters)[]:
Vendor AC/DC Input Type (2 characters)[]:
Vendor Serial Number (32 characters)[]:
PCI-e Configuration (1 byte, use hex)[0x00]:
Board Power (2 bytes, use hex)[0x0000]:
Thermal Target (1 byte, use hex)[0x00]:
Thermal Shutdown Limit (1 byte, use hex)[0x00]:
Vendor Name (32 characters)[]:
Location of Manufacture (32 characters)[]:
```

```
Year of Manufacture (4 characters)[1996]:
Month of Manufacture (2 characters)[01]:
Day of Manufacture (2 characters)[01]:
TLA Assembly Name (32 characters)[OBERON 25 DRIVE CHASSIS]:
Contact Information (128 characters)[]:
Number of Programmables (short)[0]:


Programmable Details:
WWN Seed (4 bytes, use hex)[0x47E00150]:
SAS Address (4 bytes, use hex)[0x00000000]:
PCBA Part Number (16 characters)[]:
PCBA Assembly Revision (3 characters)[]:
PCBA Serial Number (16 characters)[]:
Configuration Type (2 bytes, use hex)[0x0000]:
EMC Alt MB Part Number (16 characters)[]:
Channel Tech/Speed (2 bytes, use hex)[0x0000]:
System Type (2 bytes, use hex)[0x0007]:
DAE Enclosure ID (1 byte, use hex)[0x00]:
Rack ID (1 byte, use hex)[0x00]:
Slot ID (1 byte, use hex)[0x00]:
Drive SpinUp Select (2 bytes, use hex)[0x0000]:
Family FRU ID (4 bytes, use hex)[0x0008 0x0033(Miranda 25 Drive Midplane)]:

Options:
        1  - Miranda 25 Drive Midplane (0x8003300)
        2  - Rhea 12 Drive Midplane (0x8003400)
Please Make a Selection:
FRU Capability (2 bytes, use hex)[0x0000]:
EMC Sub Assy Part Number (16 characters)[]:
EMC Sub Assy Artwork Rev (3 characters)[]:
EMC Sub Assy Revision (3 characters)[]:
EMC Sub Assy Serial Number (16 characters)[CF2EP151300042]:
        Checksum                    : 0x79811422


        Do you want to continue[y|N]?
```

2. Enter **Y** to continue.
3. As root, update the WWN seed on the replacement chassis to the value from the previous DPE: **svc_change_hw_config -c -update_wwn_seed**
4. After the command finishes, exit the root user session.

Next steps

Go to "Verifying the DPE status."

Verifying the DPE status

Steps

1. Verify that the DPE power LED is lit and that no fault lights on the DPE parts are lit.
2. If a disk, power, or SP assembly part displays a fault LED, try re-seating the part.

Installing the front bezel

Steps

1. Align the bezel with the enclosure.
2. Gently push the bezel into place on the cabinet until it latches.
3. If the bezel has a lock, insert the key that shipped with your enclosure into the lock, and turn the key to lock the bezel.

CL5217

Figure 18. Installing the front bezel

Verifying the new 2U DPE

About this task

Verify that the new 2U DPE is recognized by your system, and operating correctly using the procedure that follows.

Steps

1. In Unisphere, select **System View**.
2. On the Summary page, confirm that the system status is OK.
3. Select the **Enclosures** page.
4. Verify that the 2U DPE appears with OK status in the enclosure view.

   You may need to refresh Unisphere by clicking on the refresh icon next to the **Enclosures** view.

   Select the DPE in the **Enclosure** dropdown menu and select the **Front** view of the enclosure. Locate the new DPE shown in this enclosure view.

Figure 19. Healthy 25-drive DPE - example

If the system health monitor shows the part as faulted, contact your service provider.

Returning a faulted part

About this task

We appreciate the return of defective material within 5 business days (for US returns). For International customers, please return defective material within 5-10 business days. All instructions and material required to return your defective part were supplied with your good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part, and seal the box.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. Optional: For more information about returning customer-replaceable parts, from Unisphere, click **Support** > **Replace Disk Drives, Power Supplies, and Other Parts** > **Return a Part** to display the part return instructions.
   If your screen does not show the **Return a Part** option, contact your service provider for instructions on what to do next.

Notes, cautions, and warnings

(i) **NOTE:** A NOTE indicates important information that helps you make better use of your product.

⚠ **CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.**

⚠ **WARNING: A WARNING indicates a potential for property damage, personal injury, or death.**