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# Connecting the StorageWorks NAS E7000 to an Enterprise Virtual Array V2.0

*Abstract:* This white paper is provided as a guide for upgrading HP StorageWorks NAS products to connect to the Enterprise Virtual Array V2.0 and ACS V8.7. Detailed procedures for uninstalling and installing the E7000 and N2400 are provided.

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Connecting the HP StorageWorks NAS E7000 to an Enterprise Virtual Array V2.0  
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## Support Matrix

The support matrix provides a quick overview for the supported configurations.

NAS/SAN Fusion	Host Bus Adapters	HBA Drivers	HBA Firmware	Secure Path	SAN Switches
NAS E7000 with an EVA V1.02	LP8000 (KGPSA-CB)	4.53A7 4.53A8	3.81A1 Boot Bios 1.60a5	3.1A , 3.1A SP2	All switches supported with EVA V1.02
NAS E7000 With an EVA V2.0	LP8000 (KGPSA-CB) LP952 (FCA2101)	4.81A9	3.82A1 Boot Bios 1.60a5	Secure Path 4.0	All switches supported with EVA V2.0
NAS E7000 with ACS 8.6	LP8000 (KGPSA-CB)	4.53A7 4.53A8	3.81A1 Boot Bios 1.60a5	3.1A, 3.1A SP1	All switches supported with RAID Arrays V8.6
NAS E7000 With ACS 8.7	LP8000 (KGPSA-CB) LP952 (FCA2101)	4.81A9	3.82A1 Boot Bios 1.60a5	Secure Path 3.1A SP1 Secure Path 4.0	All switches supported with RAID Arrays V8.7
NAS N2400 Cluster With ACS 8.6	LP8000 (KGPSA-CB)	4.53A7 4.53A8	3.81A1 BootBios1.60a5	3.1A , 3.1A SP1	All switches supported with RAID Arrays V8.6
NAS N2400 Cluster With ACS 8.7	LP8000 (KGPSA-CB) LP952 (FCA2101)	4.81A9	3.82A1 Boot Bios 1.60a5	Secure Path 3.1A SP1 Secure Path 4.0	All switches supported with RAID Arrays V8.7

## Connecting the StorageWorks NAS E7000 to an Enterprise Virtual Array V2.0

The following procedures are for an HP StorageWorks NAS E7000 that has been re-imaged or imaged from the factory. The image for the E7000 installs the platform kit for Enterprise Virtual Array (EVA) 1.02, Secure Path 3.1A, and the 5-4.53A7 host bus adapter's (HBA) drivers. When connecting the E7000 to the EVA V2.0, it is necessary to upgrade the HBA drivers and Secure Path.

### Uninstall Procedures

Follow these steps to uninstall:

1. Make sure that no Fibre cables are connected to the HBAs.
2. Open **Start**→**Settings**→**Control Panel**→**Add Remove Programs**.
  - a. Uninstall the Solution Kit.

- b. Reboot.
- c. Uninstall the Large LUN utility.
- d. Reboot.
- e. Uninstall the Secure Path Server.
- f. Reboot.

## Installation Procedures

Follow these steps to install:

1. Install new hardware, if necessary.  
The E7000 supports the LP952 and LP8000 HBAs when connected to the EVA V2.0.
2. Insert the HP SANworks Windows NT and Windows 2000 kit V2.001 for Enterprise Virtual Array CD.
  - Select the *Software Solution V2.0 for Windows NT/2000* link.
3. Upgrade the HBAs if necessary.
  - a. If the drivers do not need to be upgraded, select the *Skip Driver Upgrade* link.
  - b. To upgrade the drivers, select the *Perform Fibre Channel Adapter Driver Version 4.81A9 Update* link.
    - Reboot upon completion.
  - c. Confirm the HBA Firmware is version 3.82A1.
    - If the firmware is not version 3.82A1, then a firmware upgrade is required.
4. Install the Platform Kit (Fibre Channel Software).
  - a. Open the Software Solution CD.
  - b. Select the *Software Solution V2.0 for Windows NT/2000* link.
  - c. Select the *Skip Driver Upgrade* link.
  - d. Select the *Install Fibre Channel Software* link.  
This removes the old version and installs the new version.
  - e. Reboot.
5. Install Secure Path 4.0 Server.
  - a. Insert the Secure Path 4.0 CD.
  - b. Select *Install Secure Path Server*.  
The system reboots.

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**IMPORTANT:** Restart the system immediately after finishing the SPS4.0 installation. Do not run any other installation kits (not even Fibre Channel or HBA updates) between step a and step b. Ignore any other instructions from other software kits that might differ from the steps listed above (a and b). Failing to follow these steps might result in an incomplete installation of Secure Path Server 4.0. After the system starts, the system will take a few seconds to install other components of Secure Path Server 4.0 (CPQLUNBUS) and to attach the driver to the newly discovered LUNs.

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- c. Once the node starts up, confirm the Secure Path installation and shut down the node.
- d. Connect the HBA cables.
- e. Start the server.

## Upgrading an HP StorageWorks NAS E7000 to connect to an Enterprise Virtual Array V2.0

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**Note:** This section does not pertain to a cluster configuration. For instructions for a cluster, please see the section entitled “Upgrading an HP StorageWorks NAS E7000 Cluster to connect to an Enterprise Virtual Array V2.0.”

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The following procedures are for upgrading an HP StorageWorks NAS E7000 currently connected to an EVA V1.02 to connect to an EVA V2.0. This involves changing the platform kit, HBA drivers, and Secure Path.

### Uninstall Procedures

To uninstall:

1. Open **START**, **Settings**, **Control Panel**, and **Add Remove Programs**.
2. Uninstall Secure Path 3.1A Server.
3. Reboot.

### Installation Procedures

To install:

1. Insert the SANworks Windows NT and 2000 kit V2.001 for Enterprise Virtual Array CD.
2. Upgrade the HBAs, if necessary.
  - a. If the drivers do not need to be upgraded, select the *Skip Driver Upgrade* link.
  - b. To upgrade the drivers, select the *Perform Fibre Channel Adapter Driver Version 4.81A9 Update* link.
    - Reboot upon completion.
  - c. Confirm the HBA Firmware is version 3.82A1.
    - If the firmware is not version 3.82A1, then a firmware upgrade is required.
3. Install the Platform Kit (Fibre Channel Software).

- a. Open the Software Solution CD.
  - b. Select the *Software Solution V2.0 for Windows NT/2000* link.
  - c. Select the *Skip Driver Upgrade* link.
  - d. Select the *Install Fibre Channel Software* link.  
This removes the old version and installs the new version.
  - e. Reboot.
4. Update Secure Path 3.1A Server to Secure Path 4.0 Server.
    - a. Install the Secure Path Server software.
    - b. Restart the server.

---

**IMPORTANT:** Restart the system immediately after completing the SPS4.0 installation. Do not run any other installation kits (not even Fibre Channel or HBA updates) between step a and step b. Ignore any other instructions from other software kits that differ from the steps listed above (a and b). Failing to follow these steps may result in an incomplete installation of Secure Path Server 4.0. After the system starts, the system will take a few seconds to install other components of Secure Path Server 4.0 (CPQLUNBUS) and attach the driver to the newly discovered LUNs.

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## Upgrading an HP StorageWorks NAS E7000 Cluster to connect to an Enterprise Virtual Array V2.0

The procedures below are for upgrading an HP StorageWorks NAS E7000 cluster currently connected to an EVA V1.02 to connect to an EVA V2.0. This involves changing the platform kit, HBA drivers, and Secure Path.

### Uninstall Procedures

To uninstall, follow these steps.

1. Open Cluster Administrator.
  - a. Make sure that failback is disabled for all resources.
  - b. Move all resources to one node.
2. On the sever that does not own any resources, open **START, Settings, Control Panel, and Add Remove Programs**.
  - a. Uninstall Secure Path 3.1A Server.
  - b. Reboot.

### Installation Procedures

To install, follow these steps.

1. Open Cluster Administrator.
  - a. Make sure that failback is disabled for all resources.

- b. Move all resources to one node.
2. On the server that does not own any resources, insert the SANworks Windows NT and 2000 kit V2.001 for Enterprise Virtual Array CD.
3. Upgrade the HBAs if necessary.
  - a. If the drivers do not need to be upgraded, select the *Skip Driver Upgrade* link.
  - b. To upgrade the drivers select, the *Perform Fibre Channel Adapter Driver Version 4.81A9 Update* link.
    - Reboot upon completion.
  - c. Confirm that the HBA Firmware is version 3.82A1.
    - If the firmware is not version 3.82A1, then a firmware upgrade is required.
4. Install the Platform Kit (Fibre Channel Software).
  - a. Open the Software Solution CD.
  - b. Select the *Software Solution V2.0 for Windows NT/2000* link.
  - c. Select the *Skip Driver Upgrade* link.
  - d. Select the *Install Fibre Channel Software* link.

This removes the old version and installs the new version.
  - e. Reboot.
5. Update Secure Path 3.1A Server to Secure Path 4.0 Server.
  - a. Install the Secure Path Server software.
  - b. Restart the server.

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**IMPORTANT:** Restart the system immediately after completing the SPS4.0 installation. Do not run any other installation kits (not even Fibre Channel or HBA updates) between step a and step b. Ignore any other instructions from other software kits that differ from the steps listed above (a and b). Failing to follow these steps may result in an incomplete installation of Secure Path Server 4.0. After the system starts, the system will take a few seconds to install other components of Secure Path Server 4.0 (CPQLUNBUS) and attach the driver to the newly discovered LUNs.

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6. Once it has been confirmed that the upgrade for the first node is complete, repeat this process for the second node.

## Upgrading the HP StorageWorks NAS E7000 to connect to a RAID Array With ACS V8.7

The procedures below are for a StorageWorks NAS E7000 that has just been re-imaged or imaged from the factory. The image for the E7000 installs the platform kit for RAID Array V8.6, Secure path 3.1A and the 5-4.53A7 HBA drivers. When connecting the E7000 to the RAID Array with ACS 8.7, it is necessary to upgrade the HBA drivers platform kit and Secure Path.

## Uninstall Procedures

To uninstall, follow these steps.

1. Make sure that no Fibre cables are connected to the HBAs.
2. Open **Start**→**Settings**→**Control Panel**→**Add Remove Programs**.
  - a. Uninstall the Large LUN utility.
  - b. Reboot.
  - c. Uninstall the Secure Path Server.
  - d. Reboot.

## Installation Procedures

To install:

1. Install new hardware, if necessary.
  - The E7000 supports the LP952 and LP8000 HBAs when connected to an HSG80 with ACS V8.7.
2. Insert the RAID Array Storage Solution Software for Windows NT/2000 CD.
  - a. Make sure that the Solution Kit is the upgrade kit.
  - b. Select the *Software Solution V8.7 for Windows NT/2000* link.
3. Upgrade the HBAs, if necessary.
  - a. If the drivers do not need to be upgraded, select the *Skip Driver Upgrade* link.
  - b. To upgrade the drivers, select the *Perform Fibre Channel Adapter Driver Version 4.81A9 Update* link.
    - Reboot upon completion.
  - c. Confirm the HBA Firmware is version 3.82A1.
    - If the firmware is not version 3.82A1, then a firmware upgrade is required.
4. Install the Platform Kit (Fibre Channel Software).
  - a. Open the Software Solution CD.
  - b. Select the *Software Solution V8.7 for Windows NT/2000* link.
  - c. Select the *Skip Driver Upgrade* link.
  - d. Select the *Install Fibre Channel Software Setup* link.

This removes the old version and installs the new version.
  - e. Reboot.
5. Install Secure Path 4.0 Server.
  - a. Insert the Secure Path 4.0 CD.
  - b. Select *Install Secure Path Server*.
  - c. The system reboots.



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**IMPORTANT:** Restart the system immediately after completing the SPS4.0 installation. Do not run any other installation kits (not even Fibre Channel or HBA updates) between step a and step b. Ignore any other instructions from other software kits that differ from the steps listed above (a and b). Failing to follow these steps may result in an incomplete installation of Secure Path Server 4.0. After the system starts, the system will take a few seconds to install other components of Secure Path Server 4.0 (CPQLUNBUS) and attach the driver to the newly discovered LUNs.

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- d. Once the node starts up, confirm the Secure Path installation and shut down the node.
- e. Connect the HBA cables.
- f. Start the server.

## Upgrading an HP StorageWorks NAS E7000 to connect to a RAID Array with ACS V8.7

This section does not pertain to a cluster configuration, for instructions with a cluster please see the section entitled “Upgrading an HP StorageWorks NAS E7000 Cluster to connect to a RAID Array with ACS V8.7.” The procedures below are for upgrading a StorageWorks NAS E7000, which is connected to a RAID Array with ACS V8.6, to connect to a RAID Array with ACS V8.7. This involves changing the platform kit, HBA drivers, and Secure Path.

### Uninstall Procedures

To uninstall:

1. Open **START**→**Settings**→**Control Panel**→**Add Remove Programs**.
2. Uninstall Secure Path 3.1A Server.
3. Reboot.

### Installation Procedures

To install:

1. Insert the RAID Array Storage Solution Software for Windows NT/2000 CD.
2. Upgrade the HBAs, if necessary.
  - a. If the drivers do not need to be upgraded, select the *Skip Driver Upgrade* link.
  - b. To upgrade the drivers, select the *Perform Fibre Channel Adapter Driver Version 4.81A9 Update* link.
    - Reboot upon completion.
  - c. Confirm the HBA Firmware is version 3.82A1.
    - If the firmware is not version 3.82A1, then a firmware upgrade is required.
3. Install the Platform Kit (Fibre Channel Software).
  - a. Open the Software Solution CD.

- b. Select the *Software Solution V8.7 for Windows NT/2000* link.
  - c. Select the *Skip Driver Upgrade* link.
  - d. Select the *Install Fibre Channel Software Setup* link.  
This removes the old version and installs the new version.
  - e. Reboot.
4. Update Secure Path 3.1A Server to Secure Path 4.0 Server.
    - a. Install the Secure Path Server software.
    - b. Restart the server.

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**IMPORTANT:** Restart the system immediately after completing the SPS4.0 installation. Do not run any other installation kits (not even Fibre Channel or HBA updates) between step a and step b. Ignore any other instructions from other software kits that differ from the steps listed above (a and b). Failing to follow these steps may result in an incomplete installation of Secure Path Server 4.0. After the system starts, the system will take a few seconds to install other components of Secure Path Server 4.0 (CPQLUNBUS) and attach the driver to the newly discovered LUNs.

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## Upgrading an HP StorageWorks NAS E7000 Cluster to connect to a RAID Array with ACS V8.7

The procedures below are for upgrading a StorageWorks NAS E7000 cluster, which is connected to a RAID Array with ACS V8.6, to connect to a RAID Array with ACS V8.7. This involves changing the platform kit, HBA drivers, and Secure Path.

### Uninstall Procedures

To uninstall:

1. Open Cluster Administrator.
  - a. Make sure that failback is disabled for all resources.
  - b. Move all resources to one node.
2. On the sever that DOES NOT own any resources, open **Start**→**Settings**→**Control Panel**→**Add Remove Programs**.
  - a. Uninstall Secure Path 3.1A Server.
  - b. Reboot.

### Installation Procedures

To install:

1. Open Cluster Administrator.
  - a. Make sure that failback is disabled for all resources.
  - b. Move all resources to one node.

2. On the server that does not own any resources, insert the *RAID Array Storage Solution Software for Windows NT/2000 CD*.
3. Upgrade the HBAs, if necessary.
  - a. If the drivers do not need to be upgraded, select the *Skip Driver Upgrade* link.
  - b. To upgrade the drivers, select the *Perform Fibre Channel Adapter Driver Version 4.81A9 Update* link.
    - Reboot upon completion.
  - c. Confirm the HBA Firmware is version 3.82A1.
    - If the firmware is not version 3.82A1, then a firmware upgrade is required.
4. Install the Platform Kit (Fibre Channel Software).
  - a. Open the Software Solution CD.
  - b. Select the *Software Solution V8.7 for Windows NT/2000* link.
  - c. Select the *Skip Driver Upgrade* link.
  - d. Select the *Install Fibre Channel Software Setup* link.
    - This removes the older version and installs the new one.
  - e. Reboot.
5. Update Secure Path 3.1A Server to Secure Path 4.0 Server.
  - a. Install the Secure Path Server software.
  - b. Restart the server.

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**IMPORTANT:** Restart the system immediately after completing the SPS4.0 installation. Do not run any other installation kits (not even Fibre Channel or HBA updates) between step a and step b. Ignore any other instructions from other software kits that differ from the steps listed above (a and b). Failing to follow these steps may result in an incomplete installation of Secure Path Server 4.0. After the system starts, the system will take a few seconds to install other components of Secure Path Server 4.0 (CPQLUNBUS) and attach the driver to the newly discovered LUNs.

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6. Once it has been confirmed that the upgrade for the first node is complete, repeat this process for the second node.