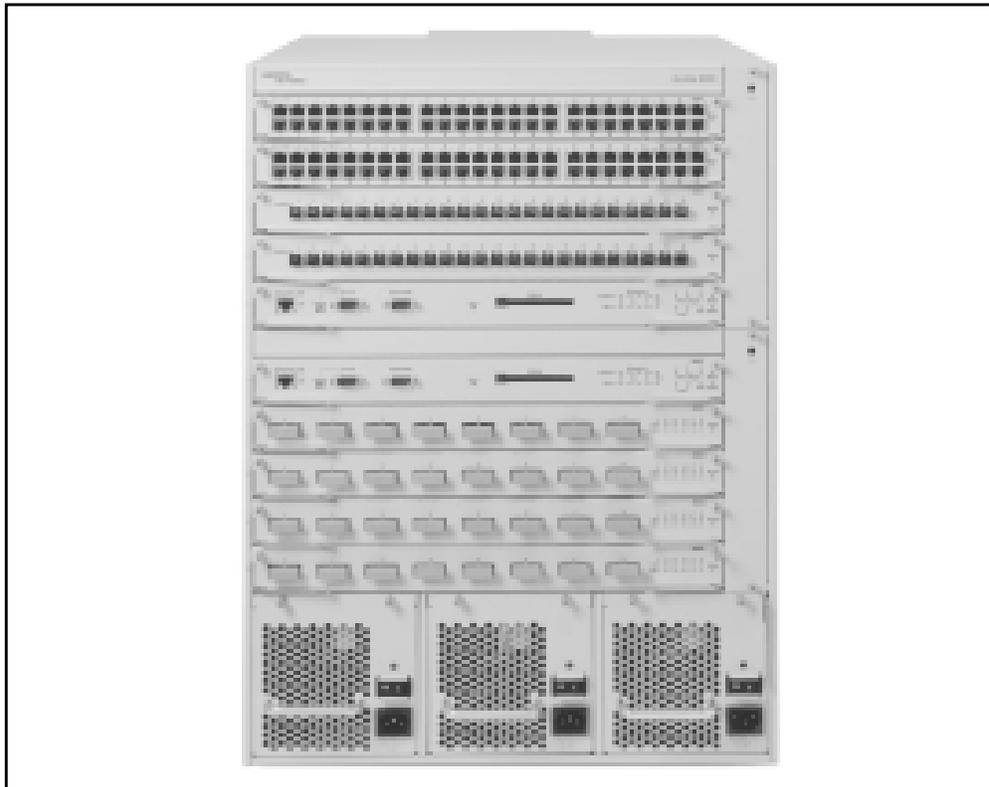


Passport 8600 (CS-LAN) Software Upgrade/Rollback

Succession Communication Server LAN (CS-LAN) architecture uses Passport 8600 (PP8600) router pairs in a virtual router redundancy protocol (VRRP) configuration. Although this is not the only Succession architecture to use PP8600 pairs, this software upgrade procedure only applies to PP8600s supporting the CS-LAN.

Passport 8600 Router- Front View



Note: If the software upgrade must be reversed, use the procedure titled “Rolling back software upgrades on PP8600s supporting CS-LANs” to restore the original software load.

Software Upgrade Strategy

In the VRRP configuration one PP8600, typically Chassis 0, acts as the master router, the other (Chassis 1) as the slave. The multi-link trunks (MLT) that inter-connect these redundant PP8600s use open shortest path first (OSPF) protocol. The interface between the CS-LAN and core network also uses the OSPF protocol. This means that VRRP monitors the LAN-side and OSPF monitors the WAN-side of the CS-LAN network connectivity. This architecture provides effective and reliable, non-load-sharing redundancy for the network.

This redundancy makes a phased approach to the upgrade of PP8600 software possible. This phased approach upgrades one PP8600 at a time to prevent service interruptions due to CS-LAN failure. Phased upgrades begin by upgrading the software on the slave router. Next, a switch of activity occurs and the newly upgraded, inactive slave side becomes the active master. Finally, a software upgrade occurs on the previously active, now inactive side. This technique minimizes the likelihood of service interruptions.

Upgrading Passport 8600 Software for the CS-LAN

Use this procedure to upgrade Passport 8600 software on routers that support the Succession CS-LAN.

Note: For information about upgrading software on PP8600 pairs used in other Succession architecture, refer to the release notes at the following website:

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

When to Use this Procedure

Use this procedure as required to upgrade Passport 8600 software on routers that support the Succession CS-LAN.

Prerequisites

None.

Common Procedures

PP8600 Release Notes provide upgrade specific details about the software loading procedure. These release notes are available from the following website:

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

Instructions

This upgrade procedure applies to Passport 8600s that control the CS-LAN. The procedure uses a phased approach to upgrade one

Passport 8600 at a time. This approach prevents service interruptions due to CS-LAN failure that would occur if both PP8600s are taken out of service at

The stepwise “Upgrading Passport 8600 software for the CS-LAN” procedure uses an iterative structure (two passes). The first pass upgrades the software on the slave router then does a switch of activity. When this change of activity completes, the slave PP8600 takes on the master PP8600 function (the previous master PP8600 becomes the slave). The procedure then cycles back to the first set of steps to repeat the software upgrade process on the second PP8600 supporting the CS-LAN.

Note: On the second pass through the iterative steps, the master and slave roles are swapped. You must take this change into account as you perform the second pass on the repeated steps in this procedure.

Nortel Networks recommends that all network element Unit 0s subtend PP8600 Chassis 0 and all Unit 1s subtend Chassis 1. The “Upgrading Passport 8600 software for the CS-LAN” procedure assumes the topology of your CS-LAN conforms to this recommendation.

Note: If the topology of your CS-LAN does not conform to this recommendation you must take this variation into account as you perform this procedure.

To access the PP8600 command line interface (CLI), Telnet to the terminal server and use the critical IP address to connect to the serial (console) interface for either VRRP PP8600. Alternatively, bypass the terminal server and use the critical IP address to connect directly to the serial (console) interface for either VRRP PP8600.

Make sure you use READ/WRITE/ALL (RWA) login and/or password privileges when performing this procedure. Refer to the documentation suite located at:

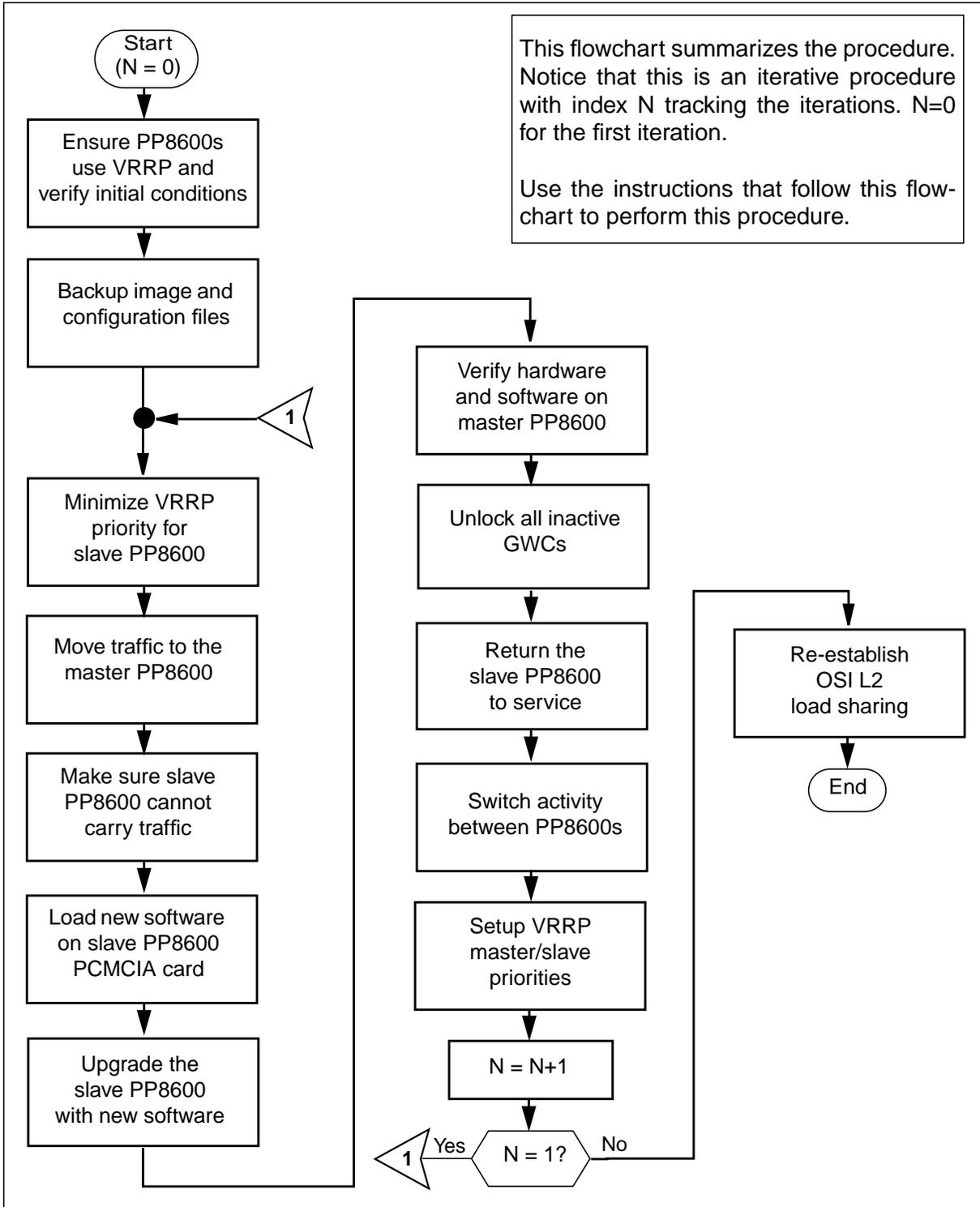
WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

for more information.

Note: *Getting Started with the Passport 8600 Series Management Software* provides additional details about RWA privileges.

The following flowchart summarizes this procedure.

Upgrading Passport 8600 software for the CS-LAN



Upgrading Passport 8600 software for the CS-LAN

ATTENTION

Make sure you understand the “Instructions” and flowchart that support this procedure before you begin “Upgrading Passport 8600 software for the CS-LAN”.

This is an iterative procedure that includes two passes. The iterations (passes) proceed as follows:

- step 1 to step 8 establish initial conditions for the iterative procedure
- first pass (N=0) includes step 9 to step 45
- second pass (N=1) includes step 9 to step 45
- step 46 to step 53 complete the upgrade procedure by re-establishing OSI Level 2 load sharing

With reference to documentation supporting your CS-LAN and its topology (contact your system administrator if necessary):

- 1 Review your CS-LAN topology to verify the following:
 - a the PP8600s are in-service and use a VRRP configuration.
 - b all network element Unit 0s subtend PP8600 chassis 0 and all Unit 1s subtend PP8600 chassis 1

Note 1: If your CS-LAN does not conform with this topology take local variations into account as you perform this procedure.

Note 2: The following table defines the PP8600 master/slave conventions for this procedure.

Iteration		Slave PP8600	Master PP8600	
First Pass	(N=0)	Chassis N	Chassis X	[X = N+1]
Second Pass	(N=1)	Chassis N	Chassis X	[X = N - 1]

Use the PP8600 CLI to verify PP8600 initial conditions:

- 2 Verify the correct operation of the PP8600 hardware and software as follows:
 - a check the log file by typing:

sho log file

The log file appears (see figure below).

```

Telnet - 10.64.16.3
Connect [0] Inband (Std)
SCS PP8600-1:58 sho log file
[05/28/98 16:36:35] System boot
[05/28/98 16:36:35] Passport System Software Release 3.1.2.0
[05/28/98 16:36:35] Card inserted: Slot=1 Type=8648TX
[05/28/98 16:36:35] Card inserted: Slot=2 Type=8648TX
[05/28/98 16:36:35] Card inserted: Slot=5 Type=8698SF
[05/28/98 16:36:35] Card inserted: Slot=10 Type=8688SX
[05/28/98 16:36:36] Initializing 8698SF in slot #5 ...
[05/28/98 16:36:38] Initializing 8648TX in slot #1 ...
[05/28/98 16:36:40] Initializing 8648TX in slot #2 ...
[05/28/98 16:36:42] Initializing 8688SX in slot #10 ...
[05/28/98 16:36:45] Loading configuration from /Flash/config.cfg
[05/28/98 16:36:45] Urrp State Transition Trap(4/3,Type=6, Cause=1, WrId=1, WrIp
Addr=10.64.16.1, Addr=10.64.16.3)
[05/28/98 16:36:45] Urrp State Transition Trap(4/4,Type=6, Cause=1, WrId=2, WrIp
Addr=10.64.32.1, Addr=10.64.32.3)
[05/28/98 16:36:45] The system is ready
[05/28/98 16:36:47] Link Up(1/1)
[05/28/98 16:36:47] Link Up(1/3)
[05/28/98 16:36:47] Link Up(1/4)
[05/28/98 16:36:47] Link Up(1/5)
[05/28/98 16:36:47] Link Up(1/6)
[05/28/98 16:36:47] Link Up(1/7)
[05/28/98 16:36:47] Link Up(1/8)
[05/28/98 16:36:47] Link Up(1/9)
[05/28/98 16:36:47] Link Up(1/10)
--Here-- (q = quit)

```

Review the log file and correct any errors or problems reported.

Note: Refer to PP8600 documentation available at:

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

for more information about reviewing the log file or contact your next level of support.

b check the configuration by typing:

sho config

The configuration file appears showing network topology.

Note: Topology should conform with the recommended configuration (see "Instructions" and step 1, sub-step b).

c check the address resolution protocol information by typing:

sho ip arp info

The IP ARP file appears. Review the file and correct any MAC address problems reported.

Note: Refer to PP8600 documentation available at:

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

for more information about checking address resolution protocol information or contact your next level of support.

- 3 Verify all subtending links and nodes as follows:
 - a check router port error statistics by typing:

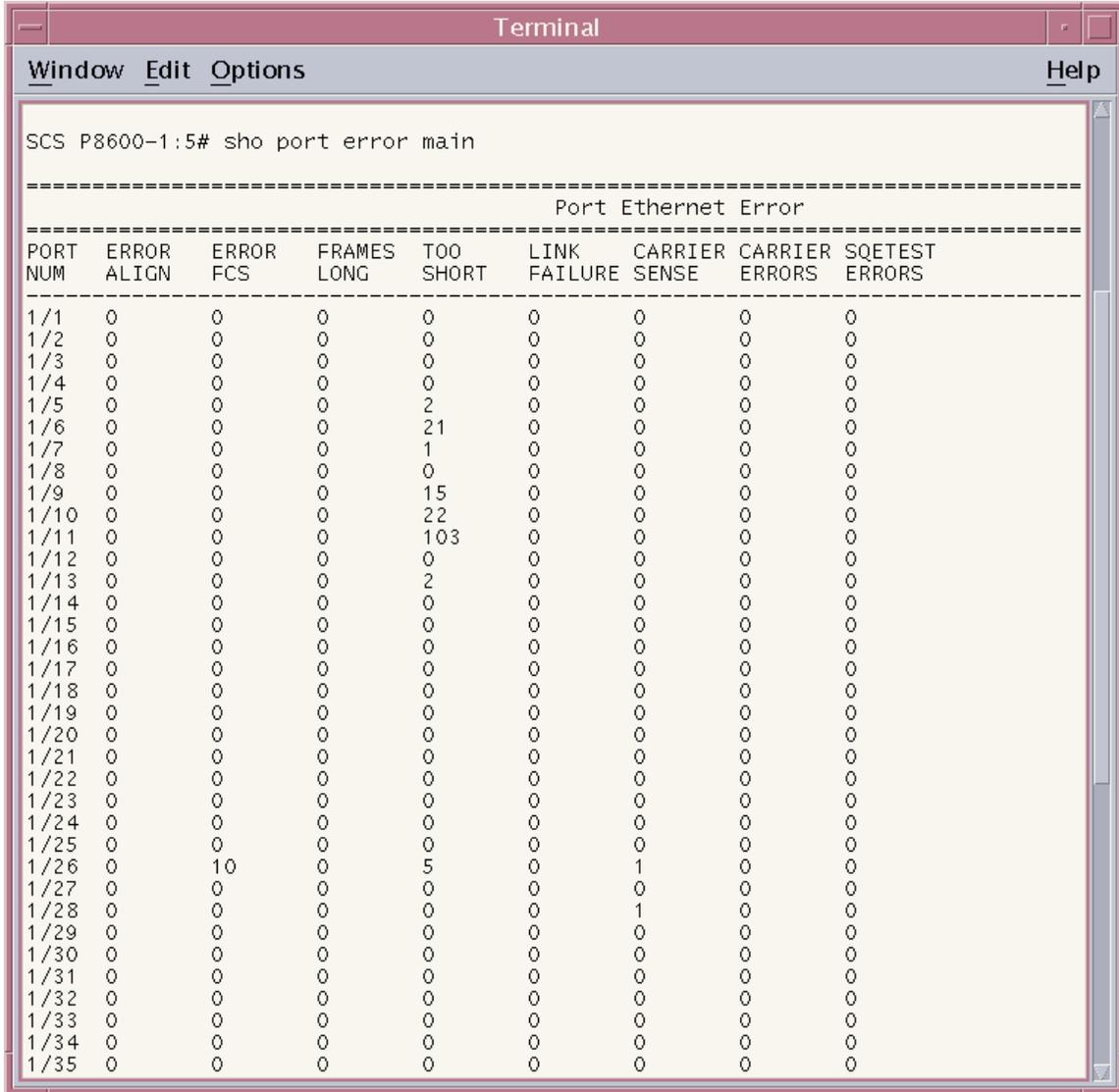
sho port error main

The main port error file appears (see figure below). Review the file and correct any problems reported.

Note: Refer to PP8600 documentation available at:

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

for more information about checking the main port error file or contact your next level of support.



The terminal window displays the output of the 'sho port error main' command. The output is a table titled 'Port Ethernet Error' with columns for PORT NUM, ERROR ALIGN, ERROR FCS, FRAMES LONG, TOO SHORT, LINK FAILURE, CARRIER SENSE, CARRIER ERRORS, and SQETEST ERRORS. The data shows various error counts for ports 1/1 through 1/35.

PORT NUM	ERROR ALIGN	ERROR FCS	FRAMES LONG	TOO SHORT	LINK FAILURE	CARRIER SENSE	CARRIER ERRORS	SQETEST ERRORS
1/1	0	0	0	0	0	0	0	0
1/2	0	0	0	0	0	0	0	0
1/3	0	0	0	0	0	0	0	0
1/4	0	0	0	0	0	0	0	0
1/5	0	0	0	2	0	0	0	0
1/6	0	0	0	21	0	0	0	0
1/7	0	0	0	1	0	0	0	0
1/8	0	0	0	0	0	0	0	0
1/9	0	0	0	15	0	0	0	0
1/10	0	0	0	22	0	0	0	0
1/11	0	0	0	103	0	0	0	0
1/12	0	0	0	0	0	0	0	0
1/13	0	0	0	2	0	0	0	0
1/14	0	0	0	0	0	0	0	0
1/15	0	0	0	0	0	0	0	0
1/16	0	0	0	0	0	0	0	0
1/17	0	0	0	0	0	0	0	0
1/18	0	0	0	0	0	0	0	0
1/19	0	0	0	0	0	0	0	0
1/20	0	0	0	0	0	0	0	0
1/21	0	0	0	0	0	0	0	0
1/22	0	0	0	0	0	0	0	0
1/23	0	0	0	0	0	0	0	0
1/24	0	0	0	0	0	0	0	0
1/25	0	0	0	0	0	0	0	0
1/26	0	10	0	5	0	1	0	0
1/27	0	0	0	0	0	0	0	0
1/28	0	0	0	0	0	1	0	0
1/29	0	0	0	0	0	0	0	0
1/30	0	0	0	0	0	0	0	0
1/31	0	0	0	0	0	0	0	0
1/32	0	0	0	0	0	0	0	0
1/33	0	0	0	0	0	0	0	0
1/34	0	0	0	0	0	0	0	0
1/35	0	0	0	0	0	0	0	0

b check supplemental router port statistics by typing:

sho port error extended

The extended port error file appears (see figure below). Review the file and correct any problems reported.

Note: Refer to PP8600 documentation available at:

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

for more information about checking the extended port error file or contact your next level of support.

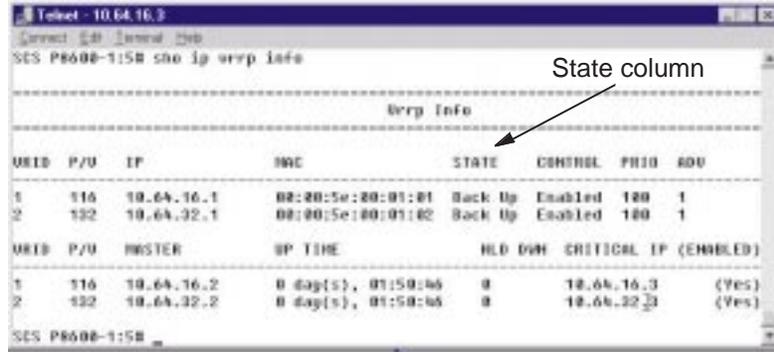
The terminal window displays the output of the 'sho port error extended' command. The output is a table with 9 columns: PORT NUM, MAC_RX ERRORS, MAC_TX ERRORS, DIFFER TX, PACKET ERRORS, LINK INACTIV, UNKNOWN PROTOS, IN FLWCTRL, and OUT FLWCTRL. The data is listed for ports 1/1 through 1/35. Notable values include 1351 packet errors on port 1/6 and 7588 MAC TX errors on port 1/11.

PORT NUM	MAC_RX ERRORS	MAC_TX ERRORS	DIFFER TX	PACKET ERRORS	LINK INACTIV	UNKNOWN PROTOS	IN FLWCTRL	OUT FLWCTRL
1/1	0	0	0	0	0	0	0	0
1/2	0	0	0	0	0	0	0	0
1/3	0	13	57	0	0	0	0	0
1/4	0	31	12	0	0	0	0	0
1/5	0	32	10	0	0	0	0	0
1/6	0	32	1351	0	0	0	0	0
1/7	0	26	25	0	0	0	0	0
1/8	0	35	15	0	0	0	0	0
1/9	0	7	903	0	0	0	0	0
1/10	0	9	668	0	0	0	0	0
1/11	0	33	7588	0	0	0	0	0
1/12	0	27	14	0	0	0	0	0
1/13	0	31	21	0	0	0	0	0
1/14	0	0	0	0	0	0	0	0
1/15	0	0	0	0	0	0	0	0
1/16	0	0	0	0	0	0	0	0
1/17	0	0	0	0	0	0	0	0
1/18	0	0	0	0	0	0	0	0
1/19	0	0	0	0	0	0	0	0
1/20	0	0	0	0	0	0	0	0
1/21	0	0	0	0	0	0	0	0
1/22	0	0	0	0	0	0	0	0
1/23	0	0	0	0	0	0	0	0
1/24	0	0	0	0	0	0	0	0
1/25	0	0	0	0	0	0	0	0
1/26	0	0	1531	0	0	0	0	0
1/27	0	0	0	0	0	0	0	0
1/28	0	0	0	0	0	0	0	0
1/29	0	0	0	0	0	0	0	0
1/30	0	0	0	0	0	0	0	0
1/31	0	0	0	0	0	0	0	0
1/32	0	0	0	0	0	0	0	0
1/33	0	0	0	0	0	0	0	0
1/34	0	0	0	0	0	0	0	0
1/35	0	0	0	0	0	0	0	0

- 4 Complete the PP8600 initial conditions table as follows:
 - a Type

sho ip vrrp info

The virtual router redundancy protocol file appears.



- b Review the **State** column and record the master (State = Master) and slave (State = Back Up) status for each PP8600 Chassis in the table below.

Note 1: The master PP8600 is the active router, the slave is the inactive router.

Note 2: If you cannot determine the master/slave status call the next level of support

- c Record the **VRID**, **VID (P/V)**, **PRIO**, and **Critical IP** information for PP8600 Chassis 0 and 1 in the table below.

Passport 8600 - Initial Conditions

PP8600	Chassis 0	Chassis 1
Status		
VRID		
VID		
PRIO		
Critical IP		

Note: **VID** - located in the **P/V** column - is the VLAN identifier of each VRRP configured VLAN, **VRID** is the VRRP identifier, and **PRIO** determines the PP8600 active/inactive status.

Use the PP8600 CLI to backup the original software load and configuration files:

- 5 Backup the software load file to the PCMCIA card by typing:

copy /flash/<swloadfile> /pcmcia/<swloadbkup>

where **<swloadfile>** is the name of the existing software load and **<swloadbkup>** is the name for the backup copy of the software load on the PCMCIA card.

This command backs up the current software image to the PCMCIA card prior to loading the upgraded software.

- 6 Backup the boot monitor load file to the PCMCIA card by typing:

copy /flash/<btmonfile> /pcmcia/<bootmonbkup>

where **<btmonfile>** is the name of the existing boot monitor load and **<bootmonbkup>** is the name for the backup copy of the boot monitor on the PCMCIA card.

- 7 Backup the config.cfg file to the PCMCIA card by typing:

copy /flash/config.cfg /pcmcia/<cfgbkup>

where **<cfgbkup>** is the name for the backup copy of this configuration file on the PCMCIA card.

- 8 Backup the boot.cfg file to the PCMCIA card by typing:

copy /flash/boot.cfg /pcmcia/<bootbkup>

where **<bootbkup>** is the name for the backup copy of this configuration file on the PCMCIA card.

Use the PP8600 CLI to put the redundant PP8600 in simplex mode

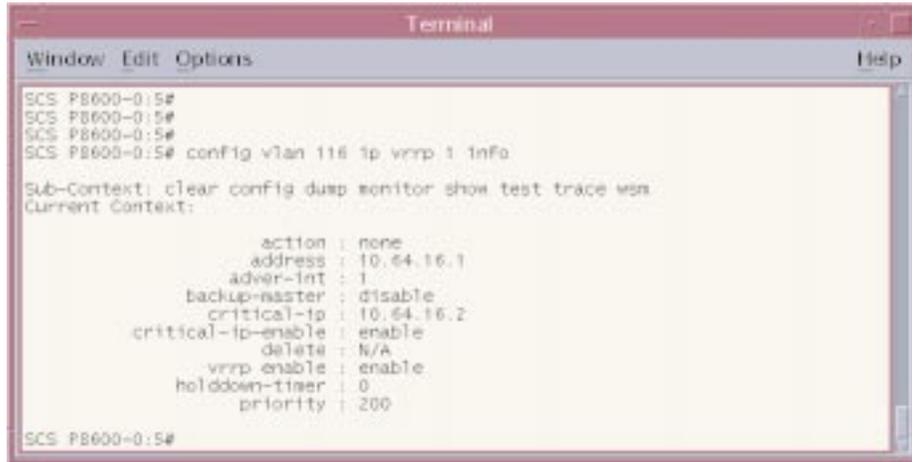
- 9 Record VRRP priority OSPF metrics for PP8600 Chassis N:

Note: Refer to the "Passport 8600 - Initial Conditions" table in step 4 to determine the **VID** and **VRID** information for PP8600 Chassis N

- a type:

config vlan <vid> ip vrrp <vrid> info

where **<vid>** is the VLAN identifier of each VLAN configured with VRRP and **<vrid>** is the VRRP identifier.



```

Terminal
Window Edit Options Help
SCS PP8600-0:5#
SCS PP8600-0:5#
SCS PP8600-0:5#
SCS PP8600-0:5# config vlan 116 ip vrrp 1 info

Sub-Context: clear config dump monitor show test trace wsm
Current Context:

          action : none
          address : 10.64.16.1
          adver-int : 1
          backup-master : disable
          critical-ip : 10.64.16.2
          critical-ip-enable : enable
          delete : N/A
          vrrp-enable : enable
          holdown-timer : 0
          priority : 200

SCS PP8600-0:5#

```

- b record <vrid> priority information for use in step 44
- c type:

config vlan <vid> ip ospf info

need picture to show command result

- d record the OSPF metric information for use in step 44
 - e repeat sub-step a to sub-step d for each VLAN provisioned on the router
- 10 Put the PP8600 Chassis N in simplex mode as follows:
- a set the VRRP priority to 1 by typing

config vlan <vid> ip vrrp <vrid> prio 1

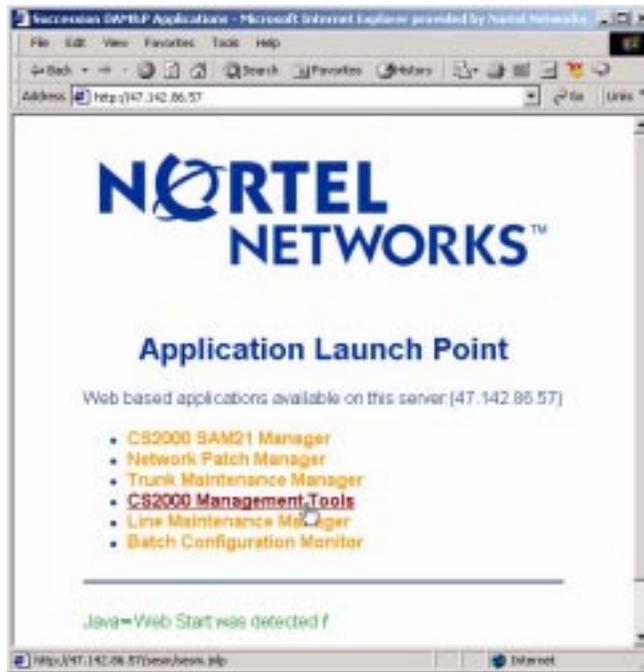
Note: Setting PP8600 Chassis N <prio> is to 1 makes it slave (Chassis X <prio> is greater than 1 making it the master).
 - b set the OSPF priority to 1000 by typing

config vlan <vid> ip ospf metric 1000
 - c repeat sub-step a and sub-step b for each VLAN provisioned on the router
- 11 Save the new PP8600 Chassis N configuration by typing:
- sav config**

This updates the new PP8600 configuration so that VRRP settings are maintained after any subsequent reboot.

Use CS 2000 Management Tools to make the devices that subtend the slave PP8600 inactive:

- 12 Launch CS 2000 Management Tools from your web browser.



Note: If Java Web Start is not installed on your workstation, you will be prompted to install Java Web Start.

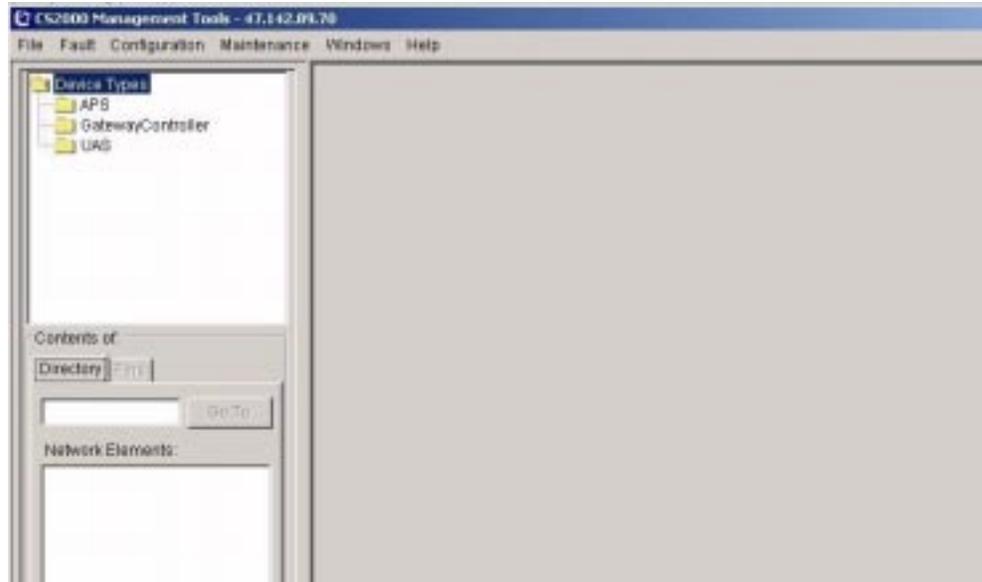
- 13 Click on the CS2000 Management Tools link.
The Login window appears.

A screenshot of a "Succession Login" dialog box. The title bar says "Succession Login". The dialog features the "NORTEL NETWORKS™" logo at the top. Below the logo, there are three labels: "Login Name:", "Password:", and "Status:", each followed by a text input field. At the bottom of the dialog, there are three buttons: "Log In", "Cancel", and "Help".

- 14 Enter your Login Name and Password then click the Log In button.

Note: Make sure to login with RWA privileges (see “Instructions”).

The CS 2000 Management Tools GUI opens in a new browser window.



- 15 Activate the Maintenance information window for the GWCs as follows:

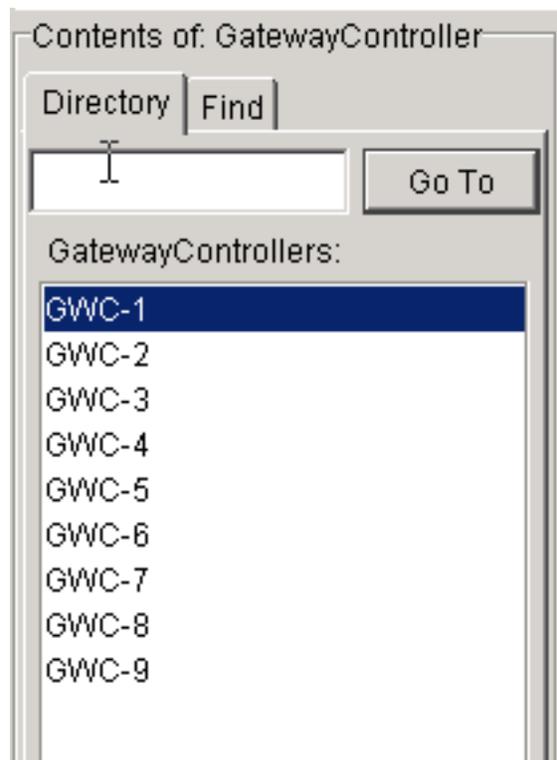
- a select **GatewayController** from the **Device Types** field of the CS2000 Management Tools GUI

*The **GatewayController** folder in the **Device Types** field is highlighted.*



- b select the **Directory** tab on the **Contents of: Gateway Controller** field

The list of Gateway Controllers appears



- c select the first GWC in the list displayed in the **Contents of: Gateway Controller** field

The GWC is highlighted and the related Maintenance or Provisioning information, depending on the active tab, appears in the large right hand field.

The screenshot displays the CS2000 Management Tools interface. The title bar reads "CS2000 Management Tools - 47.142.89.70". The menu bar includes "File", "Fault", "Configuration", "Maintenance", "Windows", and "Help".

On the left, a tree view shows "Device Types" with sub-items "APS", "GatewayController", and "UAS". Below this, a section titled "Contents of: GatewayController" contains a "Directory" and "Find" tab, a search input field, and a "Go To" button. A list of "GatewayControllers" is shown, with "GWC-0" selected.

The main panel shows configuration for "GWC-0". It lists "Unit 0: 172.17.40.26" and "Unit 1: 172.17.40.27". There are two tabs: "Maintenance" and "Provisioning".

Under "GWC-0-UNIT-0", the following states are displayed:

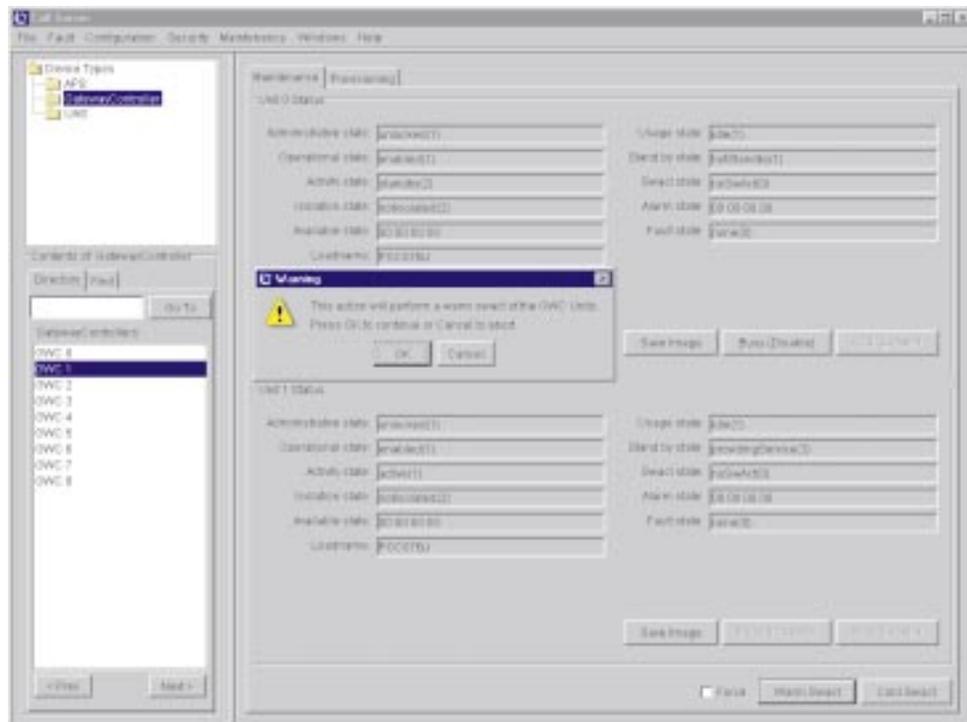
- Administrative state:
- Operational state:
- Activity state:
- Isolation state:
- Available state:
- Loadname:

Under "GWC-0-UNIT-1", the following states are displayed:

- Administrative state:
- Operational state:
- Activity state:
- Isolation state:
- Available state:
- Loadname:

- d select the **Maintenance** tab to make sure the Maintenance information is active.
- 16 Move all traffic onto PP8600 Chassis **X** (see note below) as follows:
- Note:** This step makes the following assumptions:
- Unit 0 network elements subtend PP8600 Chassis 0
 - Unit 1 network elements subtend PP8600 Chassis 1
 - N = 0 for the first iteration of this procedure **[X = N+1]**
 - N = 1 for the second iteration of this procedure **[X = N -1]**
- a check the **Activity State** field to determine which unit is **active** and which is **standby**
- Note:** if the **Activity State** field for **GWC-#-Unit-#** is **inactive** go to sub-step e
- b press **WarmSwact**
- A warning window appears stating:*

This action will perform a WarmSwact of the GWC Units. Press OK to continue or Cancel to abort.





- c press OK and wait for the activity change to complete

The selected GWC undergoes a change of activity. The change of activity can take a minute or two.

- d press **Busy (Disable)** button for the inactive unit of the GWC to force it to the manually busy state (the button is located at the bottom of the **Maintenance** information window).

The selected inactive unit of the GWC is set to the manually busy state

- e select the next GWC in the **Contents of: Gateway Controller** list and repeat sub-step a to sub-step d until the **Activity State** field for **Unit: N Status** is **inactive** for all GWCs in the list.

- 17 Select the next step as follows:

If the communication server (softswitch)	Do
uses an XA-Core	step 18
does not use an XA-Core	step 19

- 18 Disable ports connected to the XA-Core on PP8600 Chassis N by typing:

config eth <ports> state disable

where <ports> is the port list for the I/O interfaces connected to the IOP with Ethernet packet(s) or the HIOP.

Note: This step makes sure that active link(s) subtend PP8600 Chassis X.



Wait until the change of activity completes before continuing.

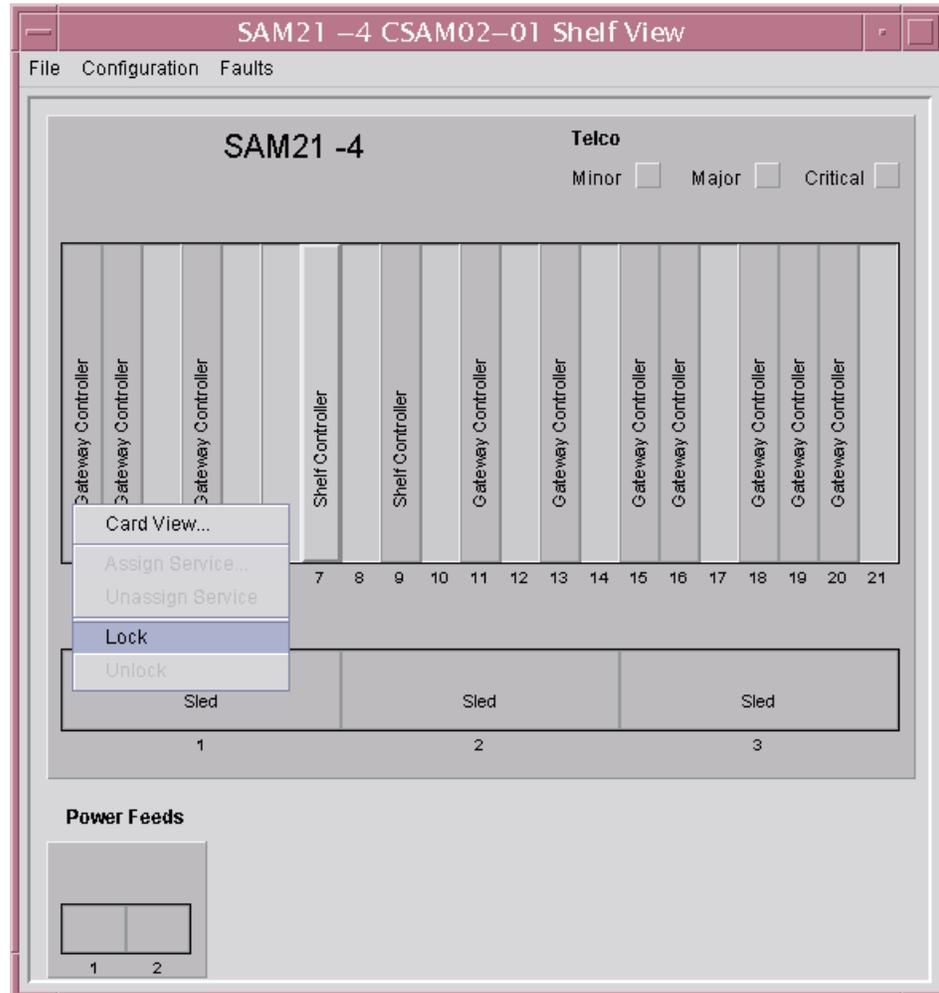
Use the SAM21 Element Manager to lock the inactive GWCs:

- 19 Launch the SAM21EM client.

The SAM21 EM GUI appears.

- 20 Lock the inactive GWCs as follows:

- a from the SAM21 EM shelf view, right click on each **standby** Gateway Controller Unit (see step 16, sub-step a) in turn
- b select **Lock** from the drop-down menu that appears.



*This sets the **standby** GWC Units to Locked.*

- c repeat sub-step a and sub-step b until all **standby** Gateway Controller Units are locked.
- d select the next step as follows:

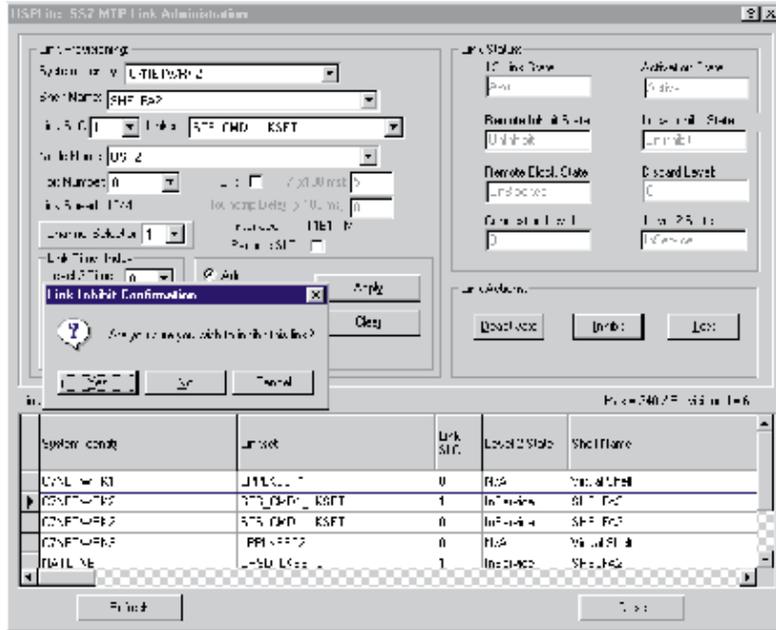
If USP Compact is	Do
used with at least one link	step 21
not used	step 26

Use the USP Compact (USPc) GUI to perform the following additional steps:

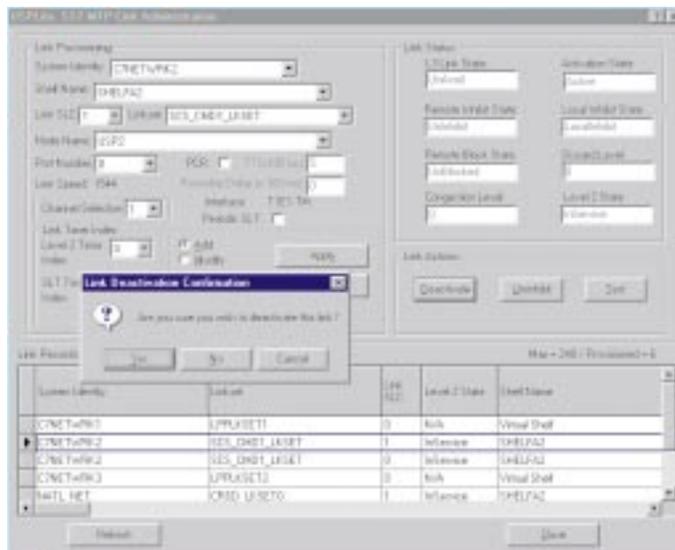
21 Inhibit all links on the slave USPc

Note: At least one of the linkset links must be available.

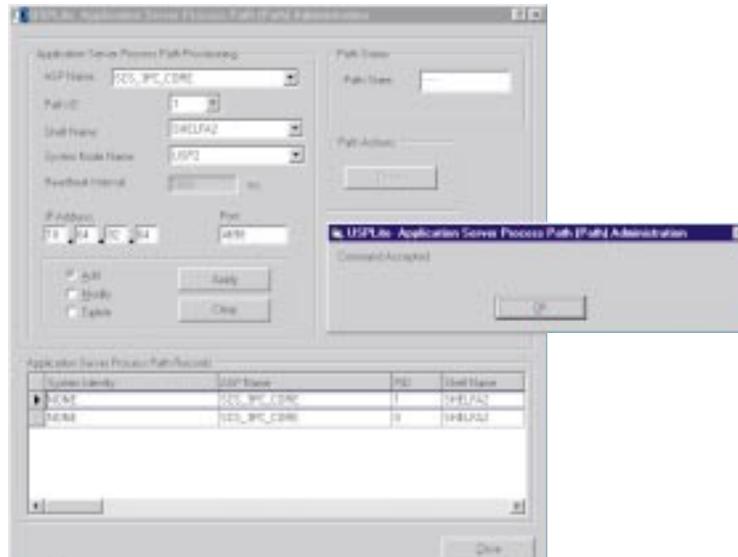
Tony McElrea to provide improved stepwise instructions per CR Q00629680



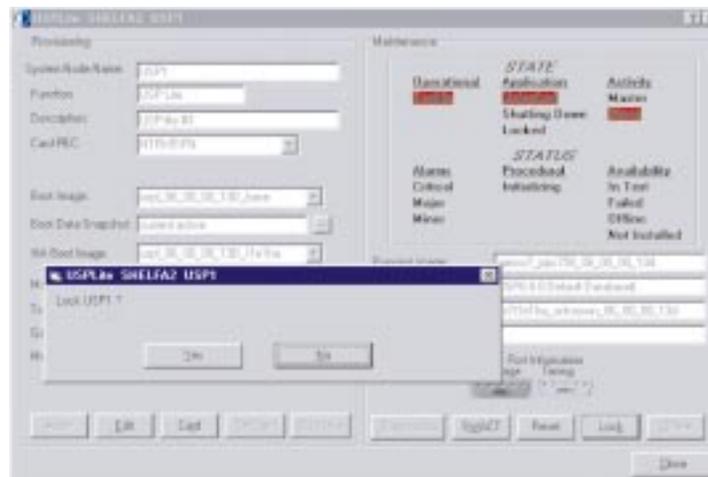
22 Deactivate all links on the slave USPc



23 Deactivate all paths on the slave USPC.

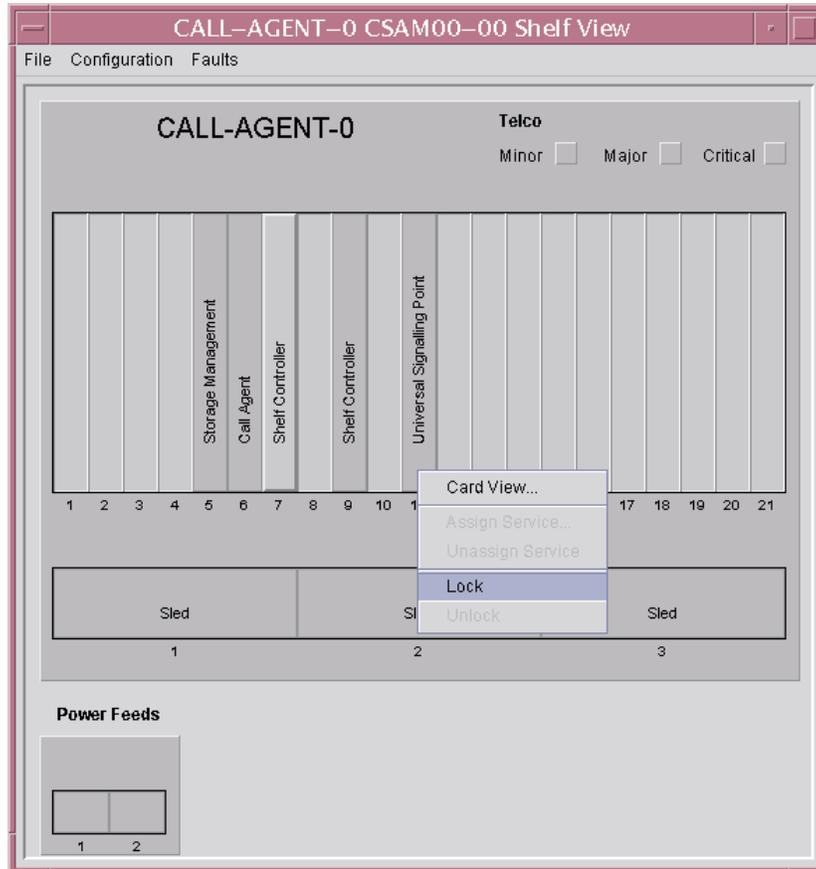


- 24 Lock the slave USPC as follows:
- from the main menu, select System Management
 - click on the USPC circuit card (blade)
 - click Lock



Use the SAM21 EM to perform the following additional steps:

- 25** Lock the slave USPc to disable the USPc GUI.



Use the PP8600 CLI to make sure that devices subtending the PP8600 Chassis X are active (PP8600 Chassis N devices inactive):

- 26** Recheck the address resolution protocol information by typing:

sho ip arp info

The IP ARP file appears. Verify that active units are subtending the master PP8600 and inactive units are subtending the slave PP8600. For assistance in verifying the ARP file, refer to PP8600 documentation about ARP

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

Note: *If any units do not meet this requirement, redo step 16. If the problem persists, contact your next level of support.*

Use the PP8600 CLI to upgrade the software load on PP8600 Chassis N:

- 27 From the terminal server use the critical IP address to access the serial connection for PP8600 Chassis N.

Note: If the connection attempt fails, verify network topology, IP address, and PP8600 power supply then try again. If the problem persists contact your next level of support.

- 28 TFTP the software image to the PCMCIA card on the PP8600 Chassis N by typing:

```
copy <a.b.c.d>:<newload> /pcmcia/<newload>
```

where <a.b.c.d> is the IP address of the TFTP server and <newload> is the name of the new software load

Note 1: If the file transfer fails, verify IP address of the TFTP server and connectivity with the slave PP8600. Confirm that the PP8600 TFTP flag is set to true by typing:

```
config bootconfig flags info
```

If the flag is set to false, reset the flag to true by typing:

```
config bootconfig flags true
```

Confirm the flag is now set to true then retry the transfer. If the problem persists, contact your next level of support.

Note 2: If the transfer completes but the file is corrupted, verify original file and PCMCIA card and transfer the file again. If the problem persists, contact your next level of support.

- 29 TFTP the boot flash image file to the PCMCIA card on PP8600 Chassis N by typing:

```
copy <a.b.c.d>:<newboot> /pcmcia/<newboot>
```

where <newboot> is the name of the newly downloaded bootfile

The boot flash image and software image is backed up to the PCMCIA card on the PP8600 Chassis N

Note: Notes 1 and 2 from step 28 apply.

- 30 Prepare to reboot PP8600 Chassis N with the new software load to upgrade the software image as follows:

a type:

```
copy /pcmcia/<newload> /flash/<newload>
```

b type:
`config bootconfig choice primary image-file
<newload>`

c save the bootconfig file by typing:

```
sav bootconfig
```

This prepares PP8600 Chassis N to reboot with the new software image.



31 Reboot the PP8600 Chassis N to upgrade the software by typing:

```
boot /pcmcia/<newload>
```

Tony McElrea to provide improved stepwise instructions per CR Q00629680 note re step 29

PP8600 Chassis N reboots loading the new software image. The reboot takes approximately 15 to 20 seconds.

Note 1: *If the PP8600 Chassis N does not reboot make sure the path is correct and try again. If the problem persists contact your next level of support.*

Note 2: *If the reboot is interrupted the PCMCIA card can be damaged. Go back to step 28 and continue.*

Note 3: *Serial connectivity between the PP8600 Chassis N and the terminal server is maintained during the reboot.*

Use the PP8600 CLI to verify all hardware and software on the PP8600 Chassis X:

32 Make sure the PP8600 Chassis X (for N=0, X=1; for N=1, X=0) is still operating correctly as follows:

Note: Refer to step 2 for more information about interpreting the results of sub-step a to sub-step c.

a check the log file by typing:

```
sho log file
```

The log file appears. Review the file and correct any errors or problems reported.

b check the configuration by typing:

```
sho config
```

The configuration file appears showing network topology and configuration. Review the file and correct any incorrect configurations reported.

- c** check the address resolution protocol information by typing:

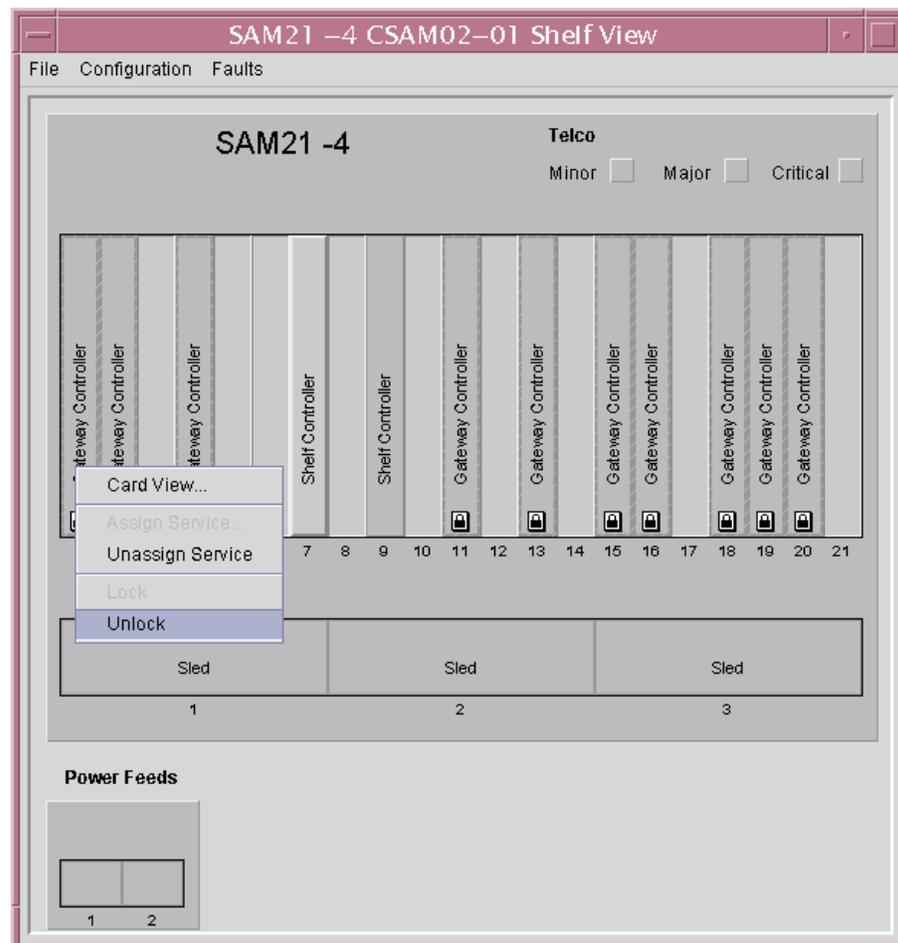
sho ip arp info

The IP ARP file appears. Review the file and correct any MAC address problems reported.

Use the SAM21 EM to unlock the inactive GWC units:

- 33** Launch the SAM21EM client.

The SAM21 EM GUI appears.



- 34** Unlock each locked Gateway Controller unit as follows:

- a** right click on a locked Gateway Controller Unit

- b select **Unlock** from the drop-down menu that appears
- c repeat sub-step a and sub-step b until all locked Gateway Controller Units are unlocked.

Note: A padlock icon identifies a locked GWC unit. Unlocking GWC units For each locked Gateway Controller unit returns them to service.

- d continue as follows:

If USP Compact is	Do
used	step 35
not used	step 40

Use the SAM21 Element Manager to lock the inactive GWCs:

- 35 Using the SAM21 EM unlock the slave USPc.

Note: Unlocking the slave USPc from the SAM21 EM enables the USPc GUI.

Use the USPc GUI to perform the following additional steps:

- 36 Unlock the slave USPc as follows:
 - a from the main menu, select System Management
 - b click on the USPc circuit card (blade)
 - c click unlock
- 37 Activate all paths on the slave USPc.
- 38 Activate all links on the slave USPc.
- 39 Uninhibit all links on the slave USPc.

Use the PP8600 CLI to enable ethernet ports on PP8600 Chassis N:

- 40 Select the next step as follows:

If the communication server (softswitch)	Do
uses an XA-Core	step 41
does not use an XA-Core	step 42

- 41 Enable the ports connected to the XA-Core Ethernet link(s) on PP8600 Chassis N by typing:

config eth <ports> state enable

where <ports> is the port list for the I/O interfaces connected to the IOP with Ethernet packet(s) or the HIOP.

Note: The active link(s) subtend PP8600 Chassis X.

Use the PP8600 CLI to swap the PP8600 master/slave status:

- 42 Make sure PP8600 Chassis N is in service as follows:

- a check the IP route information by typing:

sho ip route info

The IP route information file appears. Review the file and verify that the route information is correct.

- b check the IP VRRP information by typing:

sho ip vrrp info

The IP vrrp information file appears. Review the file and verify that the information is correct.

- 43 Swap the PP8600 master/slave status by typing:

config vlan <vid> ip vrrp <vrid> priority <prio>

where <prio> is priority information that determines which PP8600 is master and which is slave.

Note 1: Refer to step 4 for the applicable <vid>, <vrid>, and <prio> values.

Note 2: The PP8600 <prio> is higher for master than for slave.

The master PP8600 becomes the new slave PP8600 at the same time as the old slave PP8600 becomes the new master.

Note: GWC units that were in standby status on the old slave PP8600 WarmSwact to active on the new master PP8600.

Confirm this note is correct with Tony McElrea et al - Tony says no in CR Q00629680 but I recall someone asserting it was true and requiring the note to be added for SN05.

Use the PP8600 CLI to reset the VRRP priority settings and OSPF cost metrics:

- 44** Reset the VRRP priority and OSPF metrics for Chassis N as follows:

a type:

config vlan <vid> ip vrrp <vrid> prio <setting>

Note: See step 4 for <vid> and <vrid> values for Chassis N. The **PRIO** value for the Chassis N <setting> is also recorded step 4.

The VRRP priority metric is reset to its operational value.

b type:

config vlan <vid> ip ospf metric <value>

Note: See step 9 for the OSPF metric for <value>.

The OSPF metrics reset to their original value.

c Save the new PP8600 configuration by typing:

sav config

This updates the new PP8600 configuration so that VRRP settings are maintained after any subsequent reboot.

- 45** Increment the iteration index ($N = N+1$) and select the next step as follows:

If	Do
N = 1	step 9 (second pass)
N = 2	step 46 (reset OSI Level 2 load-sharing)

Note: In the iteration where $N = 1$, PP8600 Chassis 1 (identified as Chassis N) is the slave and PP8600 Chassis 0 (identified as Chassis X) is the master.

Use CS 2000 Management Tools to re-establish OSI Level 2 load-sharing between the master and slave PP8600s:

- 46** Re-open the CS 2000 Management Tools GUI.

Recall that step 12ff. activated the CS2kMT GUI.

- 47 Activate the **Maintenance** information window for the GWCs.
- Note:** Refer to step 15 for stepwise instructions to activate the GWC **Maintenance** information window.
- 48 Select the first GWC in the **Contents of: Gateway Controller** field and complete the “GWC Activity Status Worksheet” as follows:
- for the selected GWC, check the **Activity State** field for each GWC in turn
 - enter the contents of the **Activity State** field for **Unit 0 Status** sub-window in the **Unit 0 Status** column of the worksheet
 - enter the contents of the **Activity State** field for **Unit 1 Status** sub-window in the **Unit 1 Status** column of the worksheet
 - select the next GWC from the **Contents of: Gateway Controller** field and repeat sub-step a to sub-step c until the worksheet is complete

Note 1: GWC_N represents the last GWC listed in the **Contents of: Gateway Controller** field

Note 2: The “GWC Activity Status Worksheet” provides the resource to determine how to complete OSI Level 2 load sharing between the master and slave PP8600s.

GWC Activity Status Worksheet

Gateway Controller	Unit 0 Status	Unit 1 Status
GWC_0		
GWC_1		
GWC_{N-1}		
GWC_N		

- 49 Review the information in the “GWC Activity Status Worksheet” completed in step 48 and continue as follows:

If the Unit0 status entries are	Do
approximately half active	step 53
less than half active	step 50

If the Unit0 status entries are	Do
more than half active	step 51

50 Use the “GWC Activity Status Worksheet” from step 48 to re-establish OSI Level 2 load sharing as follows:

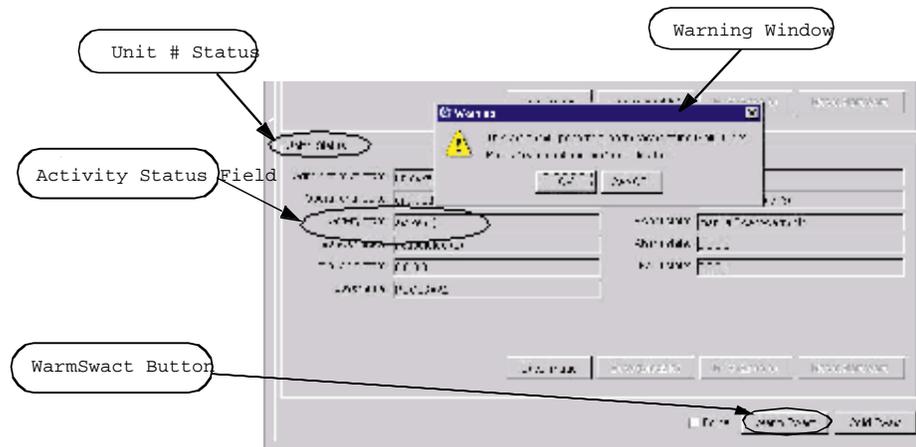
- a** identify a GWC with **Unit 0 Status** of **standby** that need to WarmSwact to **active**

Note: Consider making even numbered GWC Unit 0s **active** (Unit 1s **standby**) for OSI Level 1 load sharing.

- b** press the WarmSwact button for the selected GWC

A warning window appears stating

This action will perform a WarmSwact of the GWC Units. Press OK to continue or Cancel to abort.



- c** press OK and wait for the activity change to complete

The selected GWC undergoes a change of activity. The change of activity can take a minute or two.

- d** update the “GWC Activity Status Worksheet” from step 48 with GWC status change

Note: The updated worksheet assists in validating OSI Level 2 load sharing (see step 52).

- e** repeat sub-step a to sub-step d until approximately half of the **Unit 0 Status** entries are set to **active**

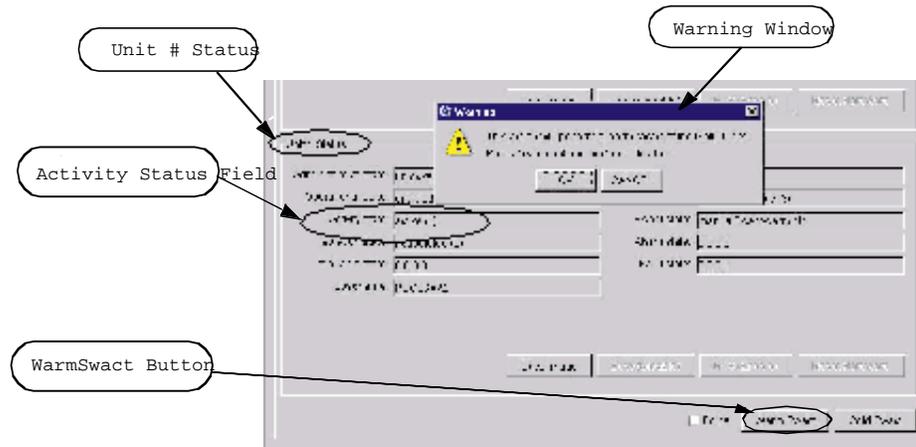
- f go to step 52 and validate OSI Level 2 load sharing
- 51 Use the “GWC Activity Status Worksheet” from step 48 to re-establish OSI Level 2 load sharing as follows:
- a identify a GWC with **Unit 0 Status** of **active** that need to WarmSwact to **standby**

Note: Consider making odd numbered GWC Unit 0s **standby** (Unit 1s **active**) for OSI Level 2 load sharing.

- b press the WarmSwact button for the selected GWC

A warning window appears stating

This action will perform a WarmSwact of the GWC Units. Press OK to continue or Cancel to abort.



- c press OK and wait for the activity change to complete

The selected GWC undergoes a change of activity. The change of activity can take a minute or two.

- d update the “GWC Activity Status Worksheet” from step 48 with GWC status change

Note: The updated worksheet assists in validating OSI Level 2 load sharing (see step 52).

- e repeat sub-step a to sub-step d until approximately half of the **Unit 0 Status** entries are set to **active**
- f go to step 52 and validate OSI Level 2 load sharing

- 52** Validate the amendments made to the “GWC Activity Status Worksheet” in step 50 (or step 51) as follows:
- a** examine the updated “GWC Activity Status Worksheet”
 - b** make sure that approximately half of the entries indicate **Unit 0 Status of active (Unit 1 Status of standby)**

If OSI Level 2 sharing is	Do
successful	step 53
unsuccessful	step 49

- 53** The procedure is complete.

Rolling Back a Passport 8600 Software Upgrade for the CS-LAN

This procedure rolls back software upgrades to PP8600 pairs that support CS-LANs. The rollback uses a phased approach to prevent service interruption.

When to Use this Procedure

Use this procedure as required.

Prerequisites

None.

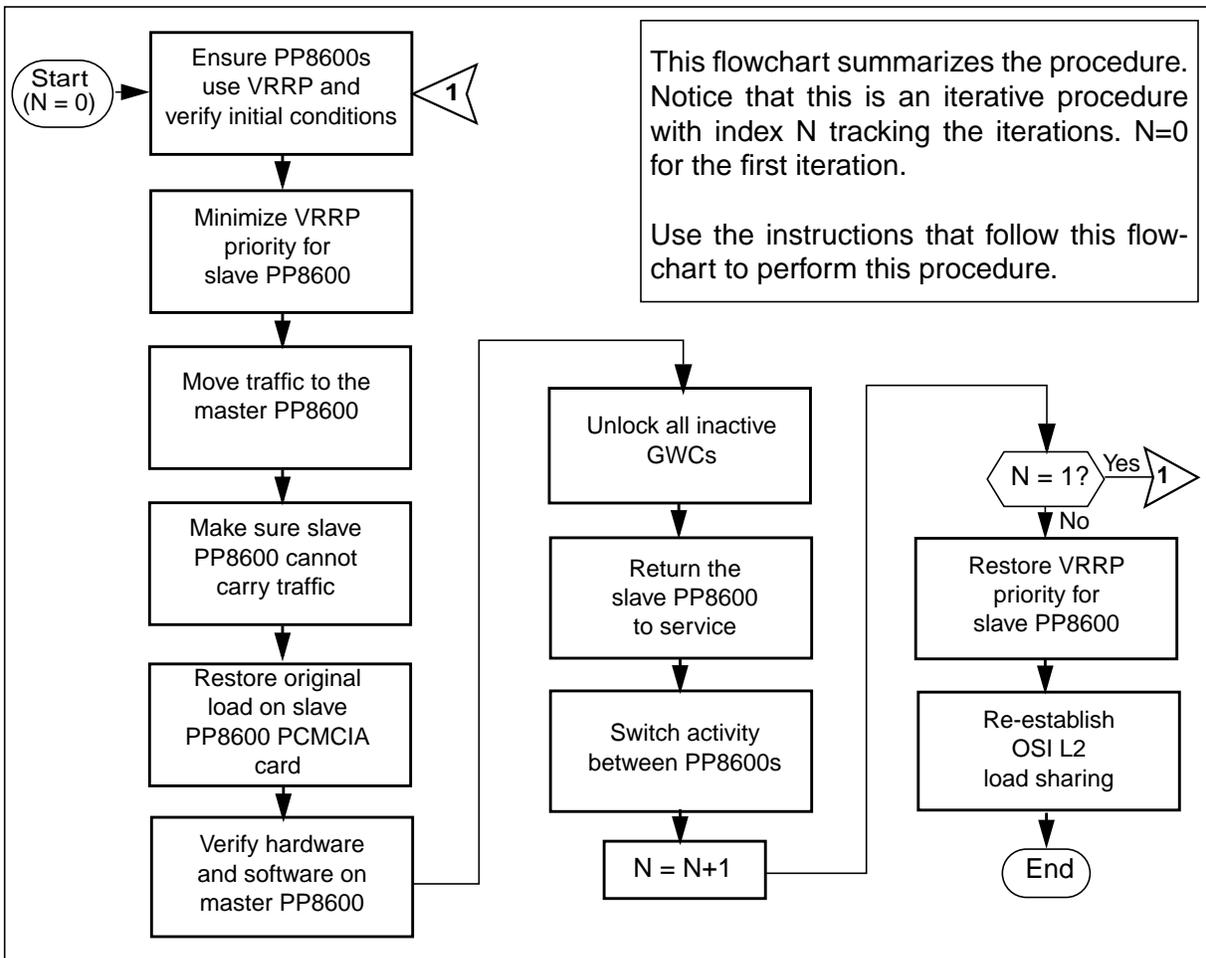
Common Procedures

None.

Instructions

The following flowchart summarizes this procedure.

Rolling back a software upgrade on PP8600s that support the CS-LAN



Rolling back software upgrades on PP8600s supporting CS-LANs

ATTENTION

This rollback procedure applies to Passport 8600s that control the Communication Server Local Area Network (CS-LAN). To prevent service interruptions due to CS-LAN failure, use a phased approach, rolling back one Passport 8600 at a time.

ATTENTION

Nortel Networks recommends that all network element Unit 0s subtend PP8600 Chassis 0 and all Unit 1s subtend Chassis 1. This procedure assumes compliance with this recommendation.

ATTENTION

To access the PP8600 command line interface (CLI), Telnet to the terminal server and use the critical IP address to connect to the serial (console) interface for either VRRP PP8600. Alternatively, bypass the terminal server and use the critical IP address to connect directly to the serial (console) interface for either VRRP PP8600.

ATTENTION

Login with READ/WRITE/ALL (RWA) login and/or password privileges. For more information about RWA privileges refer to the *Getting Started with the Passport 8600 Series Management Software* documentation suite.

Use the PP8600 CLI to verify PP8600 initial conditions:

- 1 Make sure the PP8600s in the CS-LAN are in-service and use a VRRP configuration.
- 2 Verify the correct operation of the PP8600 hardware and software as follows:
 - a check the log file by typing:

sho log file

The log file appears (see figure below).

```

Telnet - 10.64.16.3
Connect [E] Internal Help
SCS PR600-1:58 sho log file
[05/28/98 16:36:35] System boot
[05/28/98 16:36:35] Passport System Software Release 3.1.2.0
[05/28/98 16:36:35] Card inserted: Slot=1 Type=8648TX
[05/28/98 16:36:35] Card inserted: Slot=2 Type=8648TX
[05/28/98 16:36:35] Card inserted: Slot=5 Type=8698SF
[05/28/98 16:36:35] Card inserted: Slot=10 Type=8608SX
[05/28/98 16:36:36] Initializing 8698SF in slot #5 ...
[05/28/98 16:36:38] Initializing 8648TX in slot #1 ...
[05/28/98 16:36:40] Initializing 8648TX in slot #2 ...
[05/28/98 16:36:42] Initializing 8608SX in slot #10 ...
[05/28/98 16:36:45] Loading configuration from /Flash/config.cfg
[05/28/98 16:36:45] Urrp State Transition Trap(0/3,Type=6, Cause=1, Wrid=1, Wrip
Addr=10.64.16.1, Addr=10.64.16.3)
[05/28/98 16:36:45] Urrp State Transition Trap(0/4,Type=6, Cause=1, Wrid=2, Wrip
Addr=10.64.32.1, Addr=10.64.32.3)
[05/28/98 16:36:45] The system is ready
[05/28/98 16:36:47] Link Up(1/1)
[05/28/98 16:36:47] Link Up(1/2)
[05/28/98 16:36:47] Link Up(1/4)
[05/28/98 16:36:47] Link Up(1/5)
[05/28/98 16:36:47] Link Up(1/6)
[05/28/98 16:36:47] Link Up(1/7)
[05/28/98 16:36:47] Link Up(1/8)
[05/28/98 16:36:47] Link Up(1/9)
[05/28/98 16:36:47] Link Up(1/10)
--Here-- (q = quit)

```

Review the file and correct any errors or problems reported.

- b** check the configuration by typing:

sho config

The configuration file appears showing network topology and configuration.

Note: *To comply with recommended configuration, all Ethernet packet, GWC, and SC Unit-0s must connect to PP8600 Chassis 0 and Unit-1s to Chassis 1.*

- c** check the address resolution protocol information by typing:

sho ip arp info

The IP ARP file appears. Review the file and correct any MAC address problems reported.

- 3** Verify all subtending links and nodes as follows:

- a** check router port error statistics by typing:

sho port error main

The main port error file appears (see figure below). Review the file and correct any problems reported.

```

Terminal
Window Edit Options Help
SCS P8600-1:5# sho port error main
-----
Port Ethernet Error
-----
PORT  ERROR  ERROR  FRAMES  TOO  LINK  CARRIER  CARRIER  SQETEST
NUM   ALIGN   FCS    LONG    SHORT FAILURE SENSE     ERRORS   ERRORS
-----
1/1   0        0      0        0    0     0         0         0
1/2   0        0      0        0    0     0         0         0
1/3   0        0      0        0    0     0         0         0
1/4   0        0      0        0    0     0         0         0
1/5   0        0      0        2    0     0         0         0
1/6   0        0      0        21   0     0         0         0
1/7   0        0      0        1    0     0         0         0
1/8   0        0      0        0    0     0         0         0
1/9   0        0      0        15   0     0         0         0
1/10  0        0      0        22   0     0         0         0
1/11  0        0      0       103  0     0         0         0
1/12  0        0      0        0    0     0         0         0
1/13  0        0      0        2    0     0         0         0
1/14  0        0      0        0    0     0         0         0
1/15  0        0      0        0    0     0         0         0
1/16  0        0      0        0    0     0         0         0
1/17  0        0      0        0    0     0         0         0
1/18  0        0      0        0    0     0         0         0
1/19  0        0      0        0    0     0         0         0
1/20  0        0      0        0    0     0         0         0
1/21  0        0      0        0    0     0         0         0
1/22  0        0      0        0    0     0         0         0
1/23  0        0      0        0    0     0         0         0
1/24  0        0      0        0    0     0         0         0
1/25  0        0      0        0    0     0         0         0
1/26  0        0      0        5    0     1         0         0
1/27  0        10     0        0    0     0         0         0
1/28  0        0      0        0    0     1         0         0
1/29  0        0      0        0    0     0         0         0
1/30  0        0      0        0    0     0         0         0
1/31  0        0      0        0    0     0         0         0
1/32  0        0      0        0    0     0         0         0
1/33  0        0      0        0    0     0         0         0
1/34  0        0      0        0    0     0         0         0
1/35  0        0      0        0    0     0         0         0

```

Note: Refer to PP8600 documentation available at:

WWW URL: <http://worchester.us.nortel.com/Products/p8600/>

for more information about checking the main port error file or contact your next level of support.

b check supplemental router port statistics by typing:

sho port error extended

*The extended port error file appears (see figure below).
Review the file and correct any problems reported.*

Port Ethernet Error Extended								
PORT NUM	MAC_RX ERRORS	MAC_TX ERRORS	DIFFER TX	PACKET ERRORS	LINK INACTIV	UNKNOWN PROTOS	IN FLWCTRL	OUT FLWCTRL
1/1	0	0	0	0	0	0	0	0
1/2	0	0	0	0	0	0	0	0
1/3	0	13	57	0	0	0	0	0
1/4	0	31	12	0	0	0	0	0
1/5	0	32	10	0	0	0	0	0
1/6	0	32	1351	0	0	0	0	0
1/7	0	26	25	0	0	0	0	0
1/8	0	35	15	0	0	0	0	0
1/9	0	7	903	0	0	0	0	0
1/10	0	9	668	0	0	0	0	0
1/11	0	33	7588	0	0	0	0	0
1/12	0	27	14	0	0	0	0	0
1/13	0	31	21	0	0	0	0	0
1/14	0	0	0	0	0	0	0	0
1/15	0	0	0	0	0	0	0	0
1/16	0	0	0	0	0	0	0	0
1/17	0	0	0	0	0	0	0	0
1/18	0	0	0	0	0	0	0	0
1/19	0	0	0	0	0	0	0	0
1/20	0	0	0	0	0	0	0	0
1/21	0	0	0	0	0	0	0	0
1/22	0	0	0	0	0	0	0	0
1/23	0	0	0	0	0	0	0	0
1/24	0	0	0	0	0	0	0	0
1/25	0	0	0	0	0	0	0	0
1/26	0	0	1531	0	0	0	0	0
1/27	0	0	0	0	0	0	0	0
1/28	0	0	0	0	0	0	0	0
1/29	0	0	0	0	0	0	0	0
1/30	0	0	0	0	0	0	0	0
1/31	0	0	0	0	0	0	0	0
1/32	0	0	0	0	0	0	0	0
1/33	0	0	0	0	0	0	0	0
1/34	0	0	0	0	0	0	0	0
1/35	0	0	0	0	0	0	0	0

Note: Refer to PP8600 documentation available at:

WWW URL: <http://worchester.us.nortel.com/Products/pp8600/>

for more information about checking the extended port error file or contact your next level of support.

- 4 Determine the master/slave status of the PP8600s by typing:

sho ip vrrp info

The virtual router redundancy protocol file appears.

```

Telnet - 10.64.16.3
Connect to 10.64.16.3
SCS P8600-1:58# sho ip vrrp info
-----
Vrrp Info
-----

```

VRID	P/V	IP	MAC	STATE	CONTROL	PHID	ADV
1	116	10.64.16.1	02:00:5e:00:01:01	Back Up	Enabled	100	1
2	132	10.64.32.1	02:00:5e:00:01:02	Back Up	Enabled	100	1

VRID	P/V	MASTER	UP TIME	HLD DWN	CRITICAL	IP (ENABLED)
1	116	10.64.16.2	0 day(s), 01:50:46	0	10.64.16.3	(Yes)
2	132	10.64.32.2	0 day(s), 01:50:46	0	10.64.32.3	(Yes)

```

SCS P8600-1:58#

```

Review the State column of the file to determine which PP8600 router is the master (State = Master) and which is the slave (State = Back Up).

Note 1: To complete this procedure, the master PP8600 is setup as the active router, the slave as the inactive router.

Note 2: If you cannot determine the master/slave status call the next level of support

Use the PP8600 CLI to put the redundant PP8600 in simplex mode:

- Record VRRP priority OSPF cost metrics for slave PP8600:

Note: Indicate in the record which iteration (N=0 for the first iteration and N=1 for the second) the metrics represent.

```

Terminal
Window Edit Options Help
SCS P8600-0:5#
SCS P8600-0:5#
SCS P8600-0:5#
SCS P8600-0:5# config vlan 116 ip vrrp 1 info
Sub-Context: clear config dump monitor show test trace vrr
Current Context:
      action : none
      address : 10.64.16.1
      adver-int : 1
      backup-master : disable
      critical-ip : 10.64.16.2
      critical-ip-enable : enable
      delete : N/A
      vrrp-enable : enable
      holdown-timer : 0
      priority : 200
SCS P8600-0:5#

```

a type:

config vlan <vid> ip vrrp <vrid> info

where **<vid>** is the VLAN identifier of each VLAN configured with VRRP and **<vrid>** is the VRRP identifier.

b record **<vrid>** priority information for use in step 34

c type:

config vlan <vid> ip ospf info

d record the OSPF cost metric information for use in step 34

e repeat sub-step a to sub-step d for each VLAN provisioned on the router

6 Put the redundant PP8600 in simplex mode as follows:

a set the slave PP8600 VRRP priority to 1 by typing

config vlan <vid> ip vrrp <vrid> prio 1

b set the slave PP8600 OSPF priority to 1000 by typing

config vlan <vid> ip ospf metric 1000

c repeat sub-step a and sub-step b for each VLAN provisioned on the router

7 Save the PP8600 configuration by typing:

sav config

Launch the CS 2000 Management Tools GUI and make the devices that subtend the slave PP8600 inactive:

8 Use CS 2000 Management Tools to launch the PTM/SESM application from your web browser.

Enter your username and password when prompted.

9 Activate the Maintenance information window for the GWCs as follows:

a select **GatewayController** from the **Device Types** field of the GUI

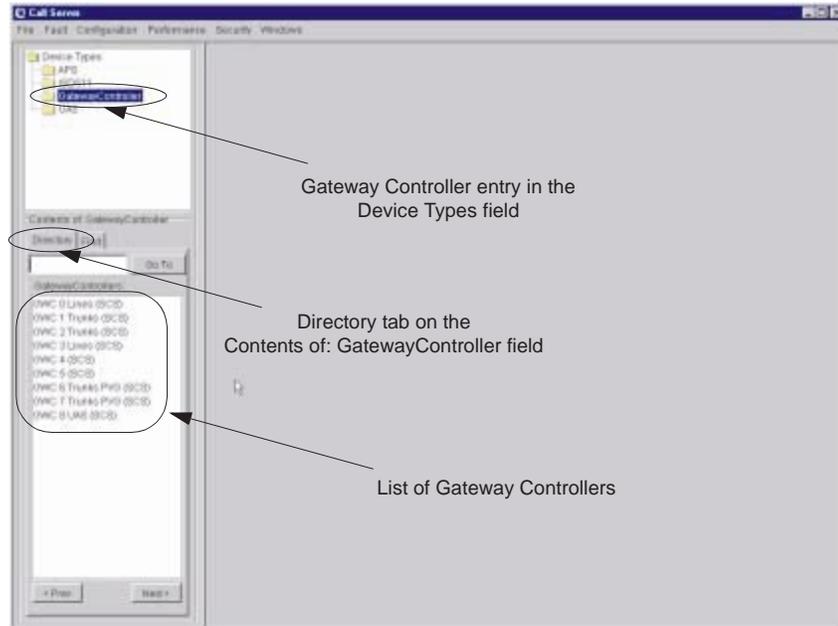
*The **Contents of:** field on the left of the window, below the **Device Type** field, lists the GWCs used in the solution.*

b select the **Directory** tab on the **Contents of: Gateway Controller** field

The list of Gateway Controllers appears

- c select the first GWC in the list displayed in the **Contents of: Gateway Controller** field

The GWC is highlighted and the related Maintenance or Provisioning information, depending on the active tab, appears in the large right hand field.



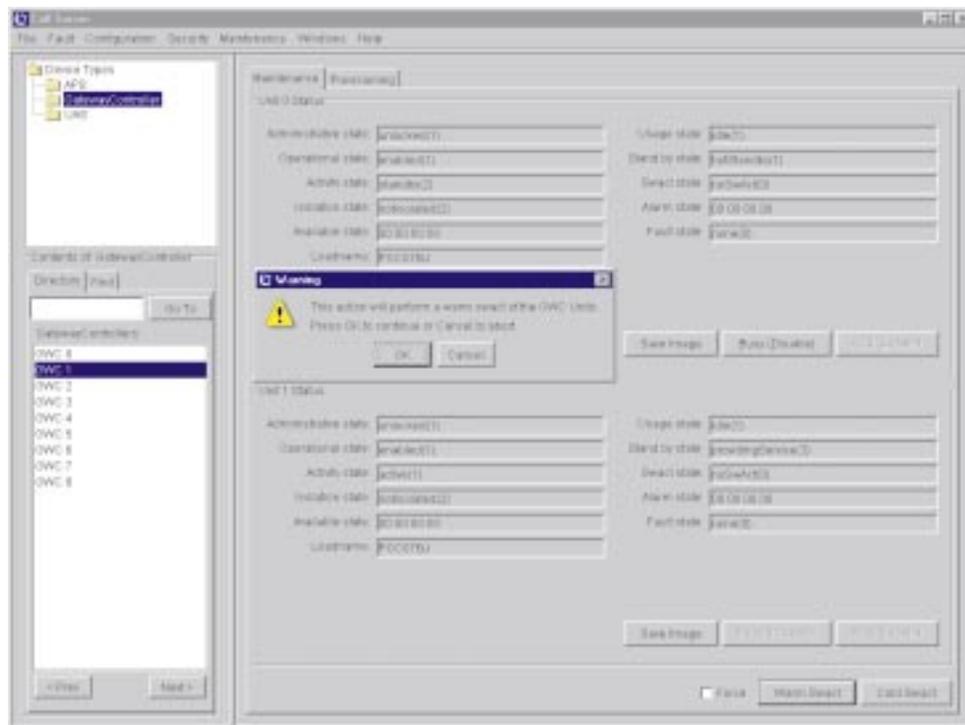
- d select the **Maintenance** tab to make sure the Maintenance information is active.
- 10 Move all traffic onto the master PP8600 as follows:
- Note:** This step makes the following assumptions:
- Unit 0 network elements subtend PP8600 Chassis 0
 - Unit 1 network elements subtend PP8600 Chassis 1
 - N = 0 for the first iteration of this procedure
 - N = 1 for the second iteration of this procedure
- a check the **Activity State** field for the highlighted GWC to determine which unit is **active** and which is **standby**
- Note:** if the **Activity State** field for **Unit: N Status** is **active** go to sub-step e
- b press **WarmSwact**

A warning window appears stating

This action will perform a WarmSwact of the GWC Units. Press OK to continue or Cancel to abort.



- c press OK and wait for the activity change to complete
The selected GWC undergoes a change of activity. The change of activity can take a minute or two.
- d press **Busy (Disable)** button for the inactive unit of the GWC to force it to the manually busy state (the button is located at the bottom of the **Maintenance** information window).



The selected inactive unit of the GWC is set to the manually busy state

- e from the **Contents of: Gateway Controller** list select the next GWC and repeat sub-step a to sub-step d until the **Activity State** field for **Unit: N Status** is **active** for all GWCs.
- 11 On the slave PP8600, disable ports connected to the XA-Core (so that active link(s) subtend the master PP8600) by typing:

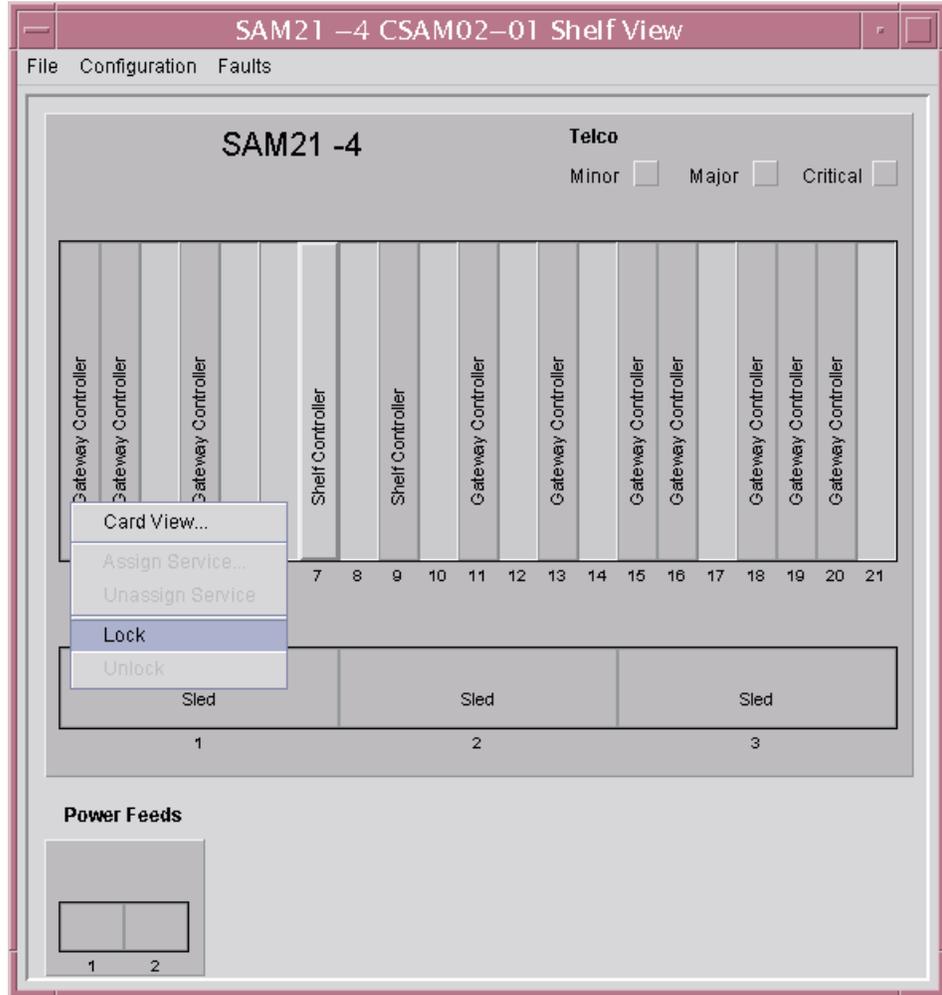
config eth <ports> state disable

where <ports> is the port list for the I/O interfaces connected to the IOP with Ethernet packetlet(s) or the HIOP.

Wait until the change of activity completes before continuing.

Use the SAM21 Element Manager to lock the inactive GWCs:

- 12 Launch the SAM21EM client.
The SAM21 EM GUI appears.
- 13 Lock the inactive GWCs as follows:
 - a from the SAM21 EM shelf view, right click on each **standby** Gateway Controller Unit in turn (see step 10, sub-step a)
 - b select **Lock** from the drop-down menu that appears.



c repeat sub-step a and sub-step b until all **standby** Gateway Controller Units are locked.

d continue as follows:

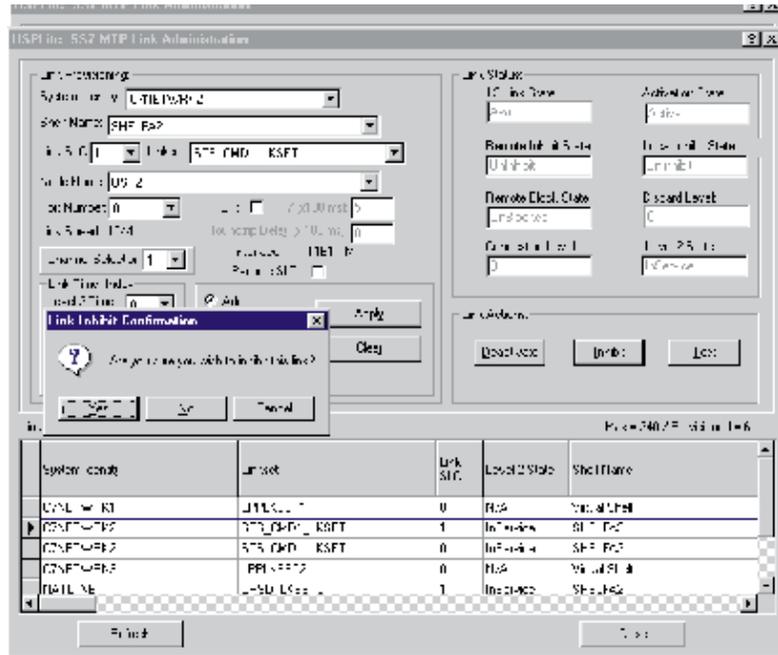
If USP Compact is	Do
used with more than one link	step 14
used with one link	step 17
not used	step 19

Note: If the Succession solution uses the Compact Universal Signaling Point (USPc), refer to step 14 to step 18 to disable the USPc GUI before continuing this procedure.

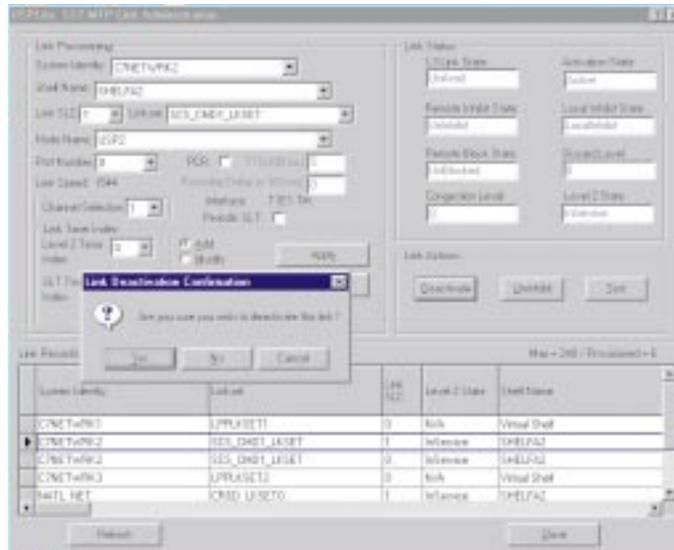
Use the USPc GUI to perform the following additional steps (for USP Compact only):

14 Inhibit all links on the slave USPc

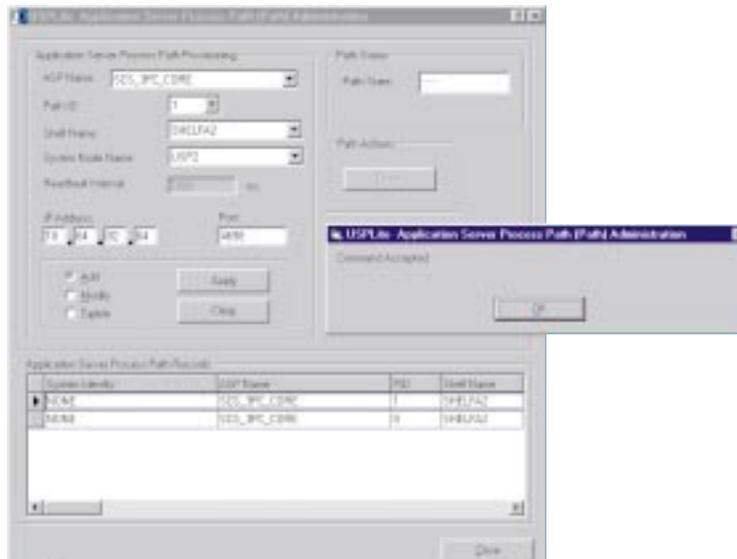
Note: At least one of the linkset links must be available.



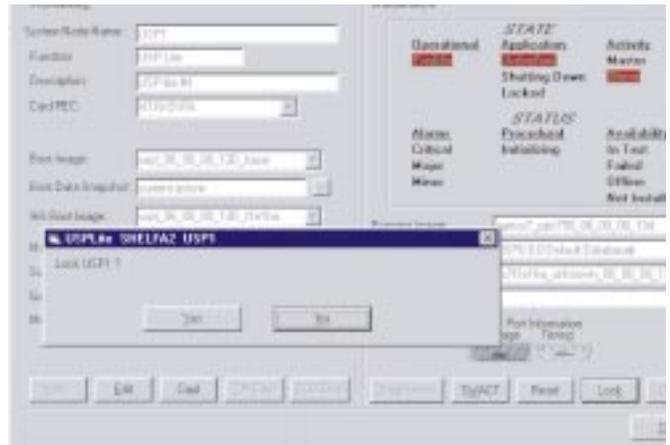
15 Deactivate all links on the slave USPc



16 Deactivate all paths on the slave USPc.

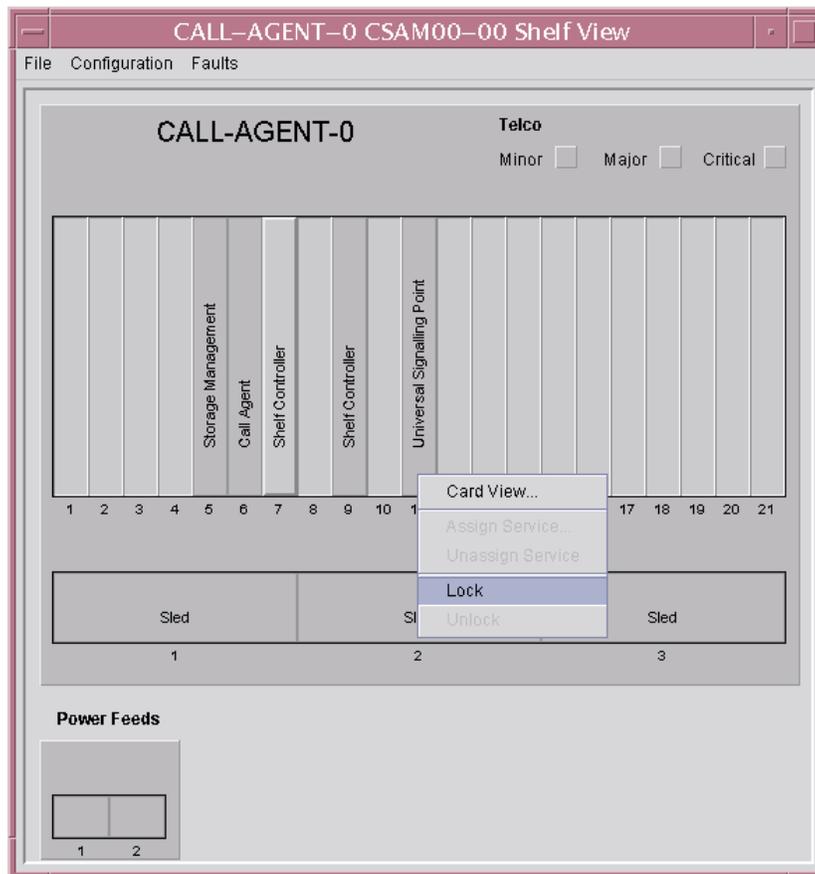


- 17** Lock the slave USPc as follows:
- a** from the main menu, select System Management
 - b** click on the USPc circuit card (blade)
 - c** click Lock



Use the SAM21 EM to perform the following additional steps (for USP Compact only):

- 18 Lock the slave USPc to disable the USPc GUI.



Use the PP8600 CLI to make sure that the devices subtending the master PP8600 are active and the slave PP8600 are inactive:

- 19 Recheck the address resolution protocol information by typing:

sho ip arp info

The IP ARP file appears. Verify that active units are subtending the master PP8600 and inactive units are subtending the slave PP8600. If any units do not meet this requirement, redo step 10. If the problem persists, contact your next level of support.

Use the PP8600 CLI to restore the original software load on the slave PP8600:

- 20 Prepare to reboot the slave PP8600 as follows:
- if and only if the original software has already been deleted from the PP8600 type:

copy /flash/<oldload> /pcmcia/<swloadbkup>

where <oldload> is the original software load.

- type:

**config bootconfig choice primary image-file
/flash/<oldload>**

- save the bootconfig file by typing:

sav bootconfig

- 21 Reboot the slave PP8600 to rollback the software upgrade by typing:



boot /flash/<oldload> [config /pcmcia <bootbkup>]

Note: Include the optional **config /pcmcia <bootbkup>** in the command if the original configuration changed during the upgrade process

The PP8600 reboots loading the original software image. The reboot takes approximately 15 to 20 seconds. Serial connectivity is maintained during the reboot.

Note: If the reboot is unsuccessful make sure the path is correct and try again. If the problem persists contact your next level of support.

Use the PP8600 CLI to verify all hardware and software on the master PP8600:

22 Make sure the master PP8600 is still operating correctly as follows:

a check the log file by typing:

sho log file

Note: Review the log file and correct any errors or problems reported (see the illustration supporting step 2).

b check the configuration by typing:

sho config

Review the configuration file (showing network topology and configuration) and correct any incorrect configurations.

c check the address resolution protocol information by typing:

sho ip arp info

Review the IP ARP file and correct any MAC address problems.

Use the SAM21 Element Manager to unlock the inactive GWC units:

23 Launch the SAM21EM client.

The SAM21 EM GUI appears.

24 From the SAM21 EM shelf view, right click on each of the locked Gateway Controller Units in turn and do the following:

a Select **Unlock** from the drop-down menu that appears.

b Repeat sub-step a until all locked Gateway Controller Units are unlocked.

Note: The shelf view shows a padlock icon at the bottom of a locked GWC unit. Unlocking GWC units automatically returns them to service.

c continue as follows:

If the USP Compact is:	Do
used	step 25
not used	step 30

Use the SAM21 EM to perform the following additional steps:

- 25 Unlock the slave USPc.

Note: Unlocking the slave USPc from the SAM21 EM enables the USPc GUI.

Use the USP Compact (USPc) GUI to perform the following additional steps:

- 26 Unlock the slave USPc as follows:
- a from the main menu, select System Management
 - b click on the USPc circuit card (blade)
 - c click Unlock
- 27 Activate all paths on the slave USPc.
- 28 Activate all links on the slave USPc.
- 29 Uninhibit all links on the slave USPc.

Use the PP8600 CLI to enable ethernet ports on the slave PP8600:

- 30 On the slave PP8600, enable the ports connected to the XA-Core by typing:

```
config eth <ports> state enable
```

where <ports> is the port list for the I/O interfaces connected to the IOP with Ethernet packetlet(s) or the HIOP.

Note: The active link(s) subtend the master PP8600.

Use the PP8600 CLI to swap the PP8600 master/slave status:

- 31 Make sure the slave PP8600 is in service as follows:
- a check the IP route information by typing:

```
sho ip route info
```

The IP route information file appears. Review the file and verify that the route information is correct.

- b check the IP VRRP information by typing:

```
sho ip vrrp info
```

The IP vrrp information file appears. Review the file and verify that the information is correct.

- 32 Swap the PP8600 master/slave status by typing:

config vlan <vid> ip vrrp <vrid> priority <prio>

where <prio> is priority information that determines which PP8600 is master and which is slave.

Note: The PP8600<prio> is higher for master than for slave.

The master PP8600 becomes the new slave PP8600 at the same time as the old slave PP8600 becomes the new master.

Note: GWC Units that were in standby status on the old slave PP8600 WarmSwact to active on the new master PP8600.

- 33 Increment the iteration index ($N = N+1$) and select the next step as follows:

If	Do
N = 1	step 2
N = 2	step 34

Note: In the iteration where $N = 1$, read Master for Slave and Slave for Master.

Use the PP8600 CLI to reset the VRRP priority settings and OSPF cost metrics:

- 34 Reset the VRRP priority and OSPF cost metrics to the values noted in step 5 as follows:

Note: Use the metrics for the current iteration ($N=0$ for the first, $N=1$ for the second).

- a type:

config vlan <vid> ip vrrp <vrid> prio <setting>

where <setting> is the original OSPF metric for the MLT link.

The VRRP priority metric is reset to its operational value.

- b type:

config vlan <vid> ip ospf info

where <vid> is the VLAN identifier of each VLAN configured with VRRP.

The OSPF cost metrics reset to their original value.

- c Save the PP8600 configuration by typing:

sav config

Use CS 2000 Management Tools to re-establish OSI Level 2 load-sharing between the master and slave PP8600s:

- 35** Use CS 2000 Management Tools to launch the PTM/SESM application from your web browser.
Enter your username and password when prompted.
- 36** Activate the **Maintenance** information window for the GWCs.
Note: Refer to step 9 for stepwise instructions to activate the GWC **Maintenance** information window.
- 37** Select the first GWC in the **Contents of: Gateway Controller** field and complete the “GWC Activity Status Worksheet”:
- for the selected GWC, check the **Activity State** field for each GWC in turn
 - enter the contents of the **Activity State** field for **Unit 0 Status** sub-window in the **Unit 0 Status** column of the worksheet
 - enter the contents of the **Activity State** field for **Unit 1 Status** sub-window in the **Unit 1 Status** column of the worksheet
 - select the next GWC from the **Contents of: Gateway Controller** field and repeat sub-step a to sub-step c until the worksheet is complete
- Note 1:** GWC_N represents the last GWC listed in the **Contents of: Gateway Controller** field
- Note 2:** The “GWC Activity Status Worksheet” provides the resource to determine how to complete OSI Level 2 load sharing between the master and slave PP8600s.

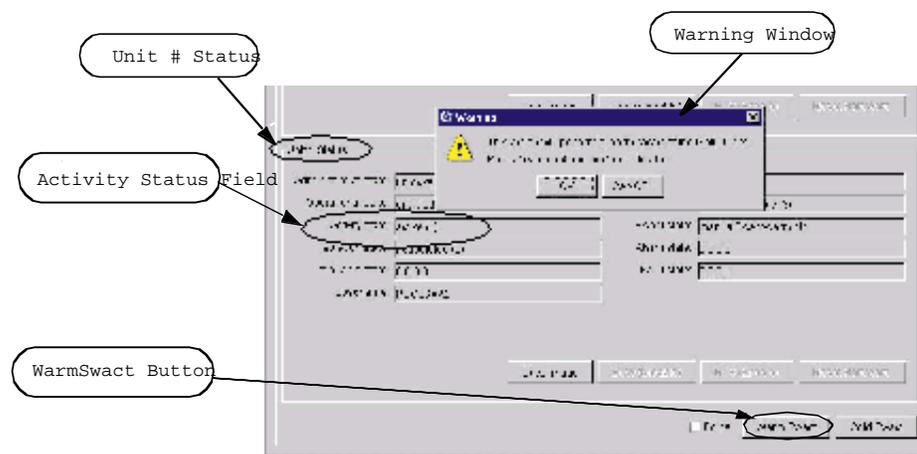
GWC Activity Status Worksheet

Gateway Controller	Unit 0 Status	Unit 1 Status
GWC ₀		
GWC ₁		
GWC _{N-1}		
GWC _N		

- 38** Review the information in the “GWC Activity Status Worksheet” completed in step 37 and continue as follows:

If the Unit0 status entries are	Do
approximately half active	step 42
less than half active	step 39
more than half active	step 40

- 39** Use the “GWC Activity Status Worksheet” from step 37 to re-establish OSI Level 2 load sharing as follows:
- a** identify a GWC with **Unit 0 Status** of **standby** that need to WarmSwact to **active**
- Note:** Consider making even numbered GWC Unit 0s **active** (Unit 1s **standby**) for OSI Level 1 load sharing.



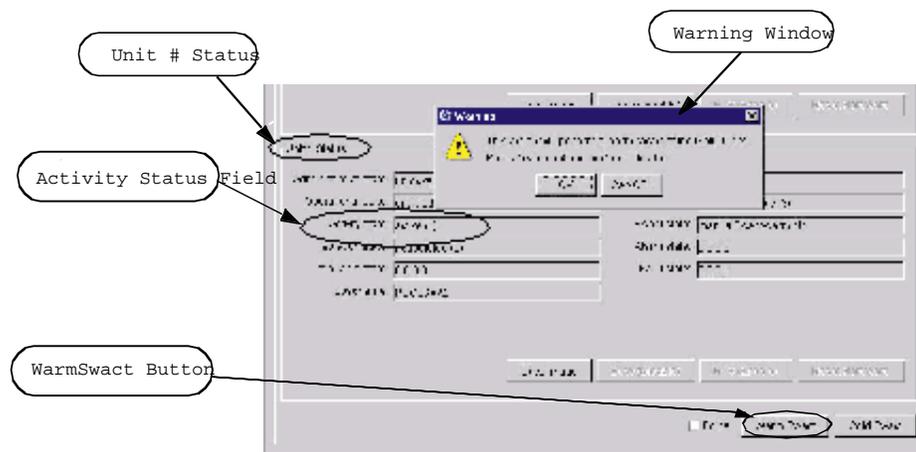
- b** press the WarmSwact button for the selected GWC
- A warning window appears stating*
- This action will perform a WarmSwact of the GWC Units. Press OK to continue or Cancel to abort.
- c** press OK and wait for the activity change to complete
- The selected GWC undergoes a change of activity. The change of activity can take a minute or two.*
- d** update the “GWC Activity Status Worksheet” from step 37 with GWC status change



Note: The updated worksheet assists in validating OSI Level 2 load sharing (see step 41).

- e repeat sub-step a to sub-step d until approximately half of the **Unit 0 Status** entries are set to **active**
 - f go to step 41 and validate OSI Level 2 load sharing
- 40** Use the “GWC Activity Status Worksheet” from step 37 to re-establish OSI Level 2 load sharing as follows:
- a identify a GWC with **Unit 0 Status** of **active** that need to WarmSwact to **standby**

Note: Consider making odd numbered GWC Unit 0s **standby** (Unit 1s **active**) for OSI Level 2 load sharing.



- b press the WarmSwact button for the selected GWC

A warning window appears stating

This action will perform a WarmSwact of the GWC Units. Press OK to continue or Cancel to abort.

- c press OK and wait for the activity change to complete

The selected GWC undergoes a change of activity. The change of activity can take a minute or two.

- d update the “GWC Activity Status Worksheet” from step 37 with GWC status change

Note: The updated worksheet assists in validating OSI Level 2 load sharing (see step 41).



- e repeat sub-step a to sub-step d until approximately half of the **Unit 0 Status** entries are set to **active**
 - f go to step 41 and validate OSI Level 2 load sharing
- 41 Validate the amendments made to the “GWC Activity Status Worksheet” in step 39 (or step 40) as follows:
 - a examine the updated “GWC Activity Status Worksheet”
 - b make sure that approximately half of the entries indicate **Unit 0 Status** of **active** (**Unit 1 Status** of **standby**)

If OSI Level 2 sharing is	Do
successful	step 42
unsuccessful	step 38

- 42 The procedure is complete.