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Scalable UPS Card and the R6000

Abstract: The Compaq R6000 UPS offers extended backup protection when combined with the Compaq Scalable UPS Card. This white paper describes the steps necessary to properly set up and configure the R6000 UPS with the Scalable UPS Card.

This paper also details the procedures for setting up *Compaq Power Management*[™] software to work in conjunction with the Scalable UPS Cards for maximum efficiency.

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Firmware Verifications

When setting up the Scalable UPS Card, verify the following for the R6000:

- Control board firmware is at a minimum code REV of 2.00.
- Communications board is at a minimum code of 1.00d.

Note: Use the front LCD panel/Firmware menu to verify the above code revisions.

- Scalable options board is at a minimum code of REV –006.

Note: Verify the above by physically inspecting the ROM chip on the board. The board will have an indicator of MUIU and REV –0XX. If the MUIU is at a lower REV than –006, a ROM upgrade is available (P/N 105998-001).

Hardware Setup

1. Perform a normal system shutdown of **all** servers and devices connected to the UPS units.
2. Power off **all** UPS units using the procedure below:
 - On the rear panel of each UPS, switch from **NORMAL** to **BYPASS** mode.
 - On the front panel of the UPS, depress and hold the **Self-Test/Alarm Reset** button until the audio alarm stops sounding.
 - Verify that the UPS is off by looking at the front LCD panel. The panel should no longer be on.
3. Remove one of the option card access panels on the rear of UPS 1.
4. Install the Scalable UPS Card into the empty access panel slot.
5. Connect the integrated cable labeled **UPS 1** on the Scalable UPS Card to Serial Port 1 on UPS 1.
6. Connect the serial cable supplied with the Scalable UPS Card Kit (P/N 295530-003) from the Scalable UPS Card port labeled **UPS 2** to Serial Port 1 on UPS 2.
7. Connect the serial cable supplied with the Scalable UPS Card Kit (P/N 295530-003) from the Scalable UPS Card port labeled **UPS 3** to Serial Port 1 on UPS 3.
8. Connect the serial cable supplied with the Scalable UPS Card Kit (P/N 295245-004) from the primary server to the Scalable UPS Card port labeled **CPU**.
9. Hardware setup is now complete. Proceed with configuring the R6000. For more information, see the next section, “R6000 Configuration.”

R6000 Configuration

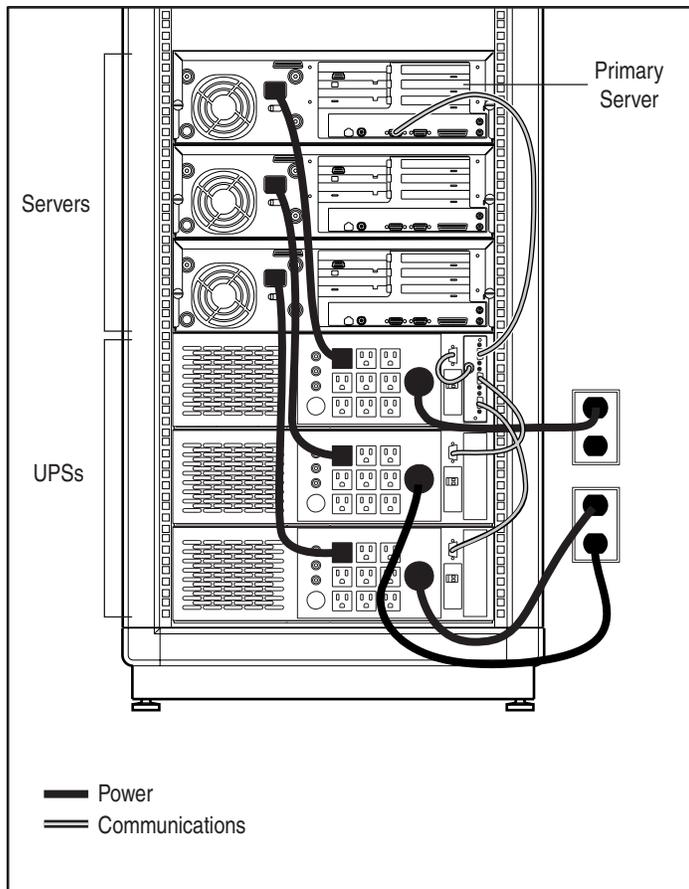


Figure 1. Sample Scalable UPS Card configuration

Note: The above figure is merely a graphical representation of a possible configuration.

The Scalable UPS Card, combined with the *Compaq Insight Manager*[™] software, can independently control up to **nine** load segments. By default, the factory assigns the five load segments on the R6000 to both serial ports. The key to allowing the Scalable UPS Card to have visibility and control of the nine segments is to limit the number of segments communicating via Serial Port 1 to nine (note that Serial Port 1 was called out in the hardware setup section above for all serial cable connection). To accomplish this in a 3-UPS configuration, use the LCD panels on each individual UPS to de-assign six load segments from Serial Port 1.

In a 3-UPS configuration, individual customer needs will dictate the exact configuration, but a typical configuration may consist of three segments on each of the three UPSes. Uncontrolled segments may still be powered and used for low-draw peripheral equipment but will not be controlled via Compaq Insight Manager and the Scalable UPS Card.

The steps below offer detailed configuration instructions:

Note: Do not turn on any devices connected to the UPS units during the configuration process.

1. Apply AC power to all UPSes.
2. On the rear panel of the UPS, switch from **BYPASS** to **NORMAL** mode.
3. Press and hold the **ON** button for 3 to 5 seconds. The UPS will go immediately to the ON condition. The LCD panel should display “Compaq R6000 UPS” on the top line and “Main Menu” on the second line.
4. Verify that the UPS is powered on.
 - Press the **Enter** button to access the submenu choices for the **Main Menu**. “Main Menu” will now appear on the top line of the LCD panel, and “Status” will appear on the second line.
 - Press the **Enter** button to select “Status.” If the UPS is powered on, “Normal” should display on the LCD panel.
 - If the status is not “Normal,” repeat step 3.
 - Press the **Escape** button until the LCD panel display again reads “Compaq R6000” and “Main Menu.”
5. Press the **Enter** button to access the submenu choices for the **Main Menu**. “Main Menu” will now appear on the top line of the LCD panel, and “Status” will appear on the second line.
6. Using the **Center** button, scroll through the menu selections until the “System Setup” selection appears on the second line of the LCD panel.
7. Press the **Enter** button to select “System Setup.” “Enter Password” will appear on the top line of the LCD panel, and “AAAAAA” will appear on the second line.
8. Enter the password (default password is “COMPAQ”). “System Setup” will appear on the top line of the LCD panel, and “Set HW Config” will appear on the second line.
9. Using the **Center** button, scroll through the **System Setup** menu choices until “Comm Setup” appears on the second line.
10. Press the **Enter** button. “Serial Port 1” will appear on the second line of the LCD panel.
11. Press the **Enter** button to choose **Comm Setup** choices for Serial Port 1. “Serial Port 1” will appear on the first line of the LCD panel, and “Baud Rate” will appear on the second line.
12. Using the **Center** button, scroll to “Assigned Segs.”

Note: If the electronics module is not at least at code REV 2.00, the **Assigned Segs** selection will NOT be available. As a result, you will not be able to de-assign segments, and Compaq Insight Manager/Compaq Power Management software will not display the proper number of manageable segments.

13. Press the **Enter** button to select the **Assigned Segs** menu. “Assigned Segs 1” will appear on the first line, and “* 1” will appear on the second line.

Note: “* 1” translates as follows:

“*” = Indicates that segment is assigned to the serial port

“1” = The load segment

14. Using the **Center** button, scroll to the load segment(s) you wish to de-assign.
15. Press the **Enter** button to de-assign the load segments from Serial Port 1. The “*” will turn off. (The absence of the “*” confirms that the load segment is no longer assigned to Serial Port 1 and will no longer be available as one of the nine manageable segments.)
16. Repeat steps 1-15 for UPS 2 and UPS 3 until you have configured all desired load segments.
17. Power down **all** UPSes.
 - On the rear panel of each UPS, switch from **NORMAL** to **BYPASS** mode.
 - On the front panel of the UPS, depress and hold the **Self-Test/Alarm Reset** button until the audio alarm stops sounding.
 - Verify that the UPS is off by looking at the front LCD panel. The panel should no longer be on.

Note: The order in which the UPSes are powered back on will **directly** impact the functionality of the UPS units! Ensure that the Master UPS 1 is the first UPS to be powered back on and that it is allowed to completely power up (complete POST) **prior** to powering on UPS 2 and UPS 3. The Scalable UPS Card must discover the HOST UPS (UPS 1) and other UPS(es) connected as part of its initial power-up sequence.

18. Power on the UPS using the following procedures:
 - Apply AC power to the UPS.
 - On the rear panel, switch from **BYPASS** to **NORMAL** mode.
 - Press and hold the **ON** button for 3 to 5 seconds. The UPS will go immediately to the ON condition. The LCD panel should indicate “Compaq R6000 UPS” on the top line and “Main Menu” on the second line.
19. Power on UPS 2 and UPS 3 using the procedure outlined in step 18.
20. R6000 configuration is now complete. Press the **Escape** button on each UPS until the LCD panel display reads “Compaq R6000” and “Main Menu.”
21. Power on all attached devices.

Power Management Software Setup

1. Install the Compaq Power Management Agents (minimum version 1.80c), and refer to instructions for your specific operating system provided with the software package.
2. Confirm that communication has been established with the UPS, per the software instructions.
3. Configuration of the nine load segments is now possible through the Compaq Power Management Snap-In for Compaq Insight Manager 32 console. Refer to the instructions provided with the software for complete details.

For additional information on the R6000, see the *Removing and Installing the Battery and Electronics Module on the R6000* white paper.