

PowerChute® Network Shutdown with more than 50 Computers connected to one

Abstract

PowerChute® Network Shutdown works with the UPS Network Management Card to provide graceful shutdown of computers powered by a UPS. The number of computers is limited only by the number of available outlets on the UPS; however, if you wish to have more than 50 computers powered by one UPS, some consideration must be given to the system configuration. Knowledge of the communication between PowerChute and the UPS Network Management Card is necessary.

How UPS Information is Sent over the Network

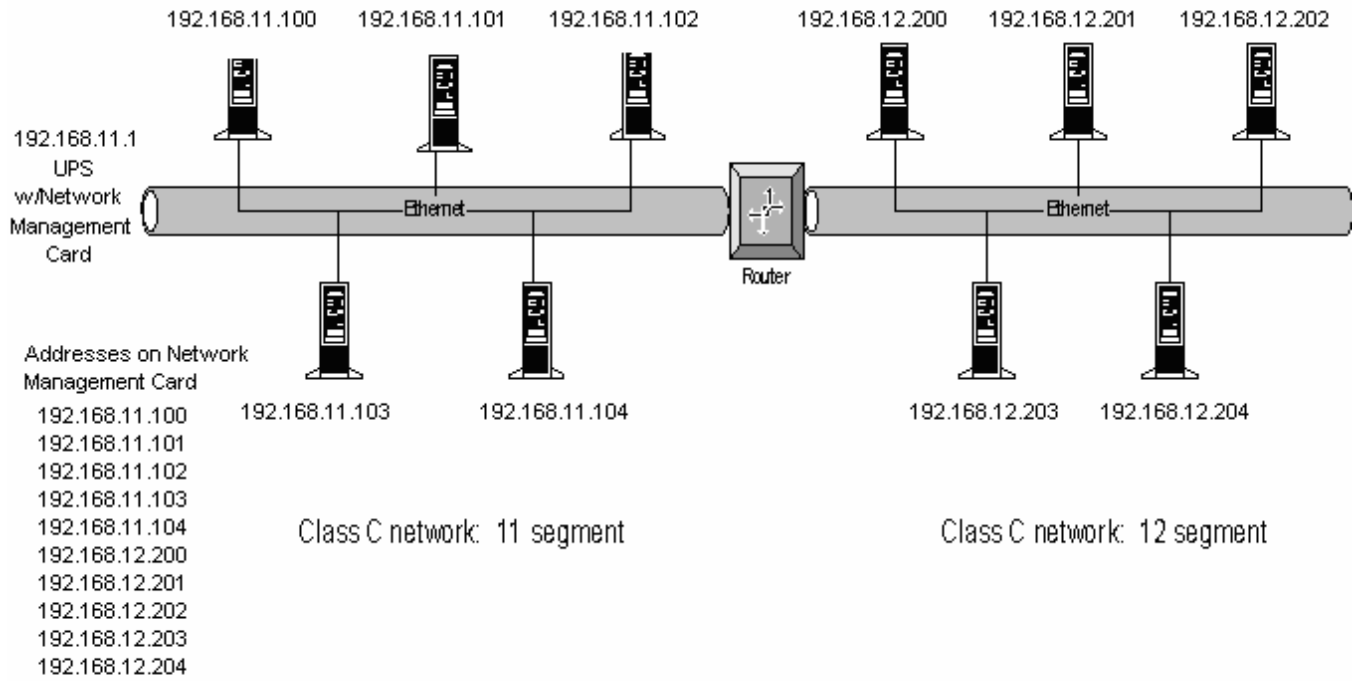
The UPS Network Management Card provides an interface between the UPS and your network. The UPS Network Management Card has an IP address, and is accessible by FTP, Telnet, SNMP, and the Web. The UPS Network Management Card sends UPS information to PowerChute Network Shutdown over the network in the following manner:

- The UPS Network Management Card in the UPS has a list of IP addresses (up to 50) of computers running PowerChute Network Shutdown. The UPS Network Management Card broadcasts UPS information on the local network segment (the segment on which the UPS Network Management Card resides), as long as it has at least one IP address on its list that is on the local segment. It will also send uni-cast messages to each address on the list that is on a different network segment.
- Each PowerChute Network Shutdown computer that receives a uni-cast message from the UPS Network Management Card will rebroadcast that message on the local network segment (the segment on which the PowerChute computer resides). Other PowerChute computers on that segment will receive this broadcast message, regardless of whether they received a uni-cast message.
- A PowerChute computer will not rebroadcast the message if it has already received a broadcast message from another computer. This is done to reduce the amount of broadcast traffic on a segment.

Broadcast and uni-cast messages are sent every 25 seconds.

In **Figure 1** below, all 11 segment computers will receive broadcasted UPS data every 25 seconds while PowerChute computers on the 12 segment will receive uni-casted UPS data every 25 seconds.

Figure 1 – Broadcasts

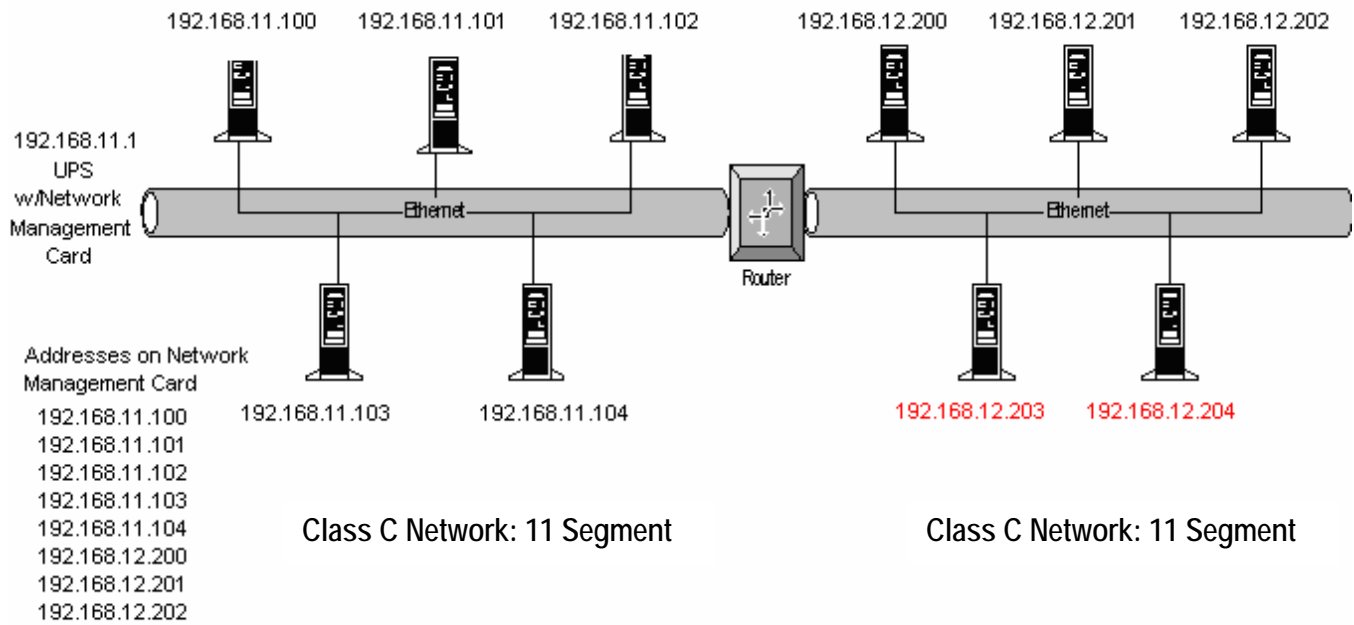


In **Figure 2** below, computers 192.168.11.100, 192.168.11.101, 192.168.11.102, 192.168.11.103, and 192.168.11.104 will receive broadcast information from the UPS Network Management Card.

Computers 192.168.12.200, 192.168.12.201, and 192.168.12.202 will receive uni-cast information containing the UPS data.

Computers 192.168.12.203 and 192.168.12.204 will receive re-broadcasted data from PowerChute computers on the 12 segment only. These computers will not receive uni-cast information from the web card.

Figure 2 – Broadcasts



IP Addresses Stored on the UPS Network Management Card

The UPS Network Management Card can store 50 IP addresses. One of these should be the IP address of a PowerChute computer on the local segment, which will cause the UPS Network Management Card to broadcast on that segment. The UPS Network Management Card will send uni-cast messages to the remaining addresses (or ignore them, if they are on the local

segment). If you have more than 50 computers connected to the UPS, you must determine which computers will receive broadcast messages, and which will receive uni-cast messages. To make this decision, notice the following conventions:

- Computers that are on the same network segment as the UPS Network Management Card will receive broadcast messages from the UPS Network Management Card. Only one of these computers needs to have its IP address stored in the UPS Network Management Card.
- Computers that are not on the same network segment as the UPS Network Management Card can receive uni-cast messages from the UPS Network Management Card, or broadcast messages from another PowerChute computer on the same network segment. You must decide which computers will have their IP addresses stored on the UPS Network Management Card. For reliability, it is recommended that at least two computers on each segment have their IP addresses stored on the UPS Network Management Card.

UPS Turnoff

In the event of an extended power failure or a UPS fault, it is desirable to shut down the powered computers gracefully and then turn off the UPS. The powered computers will be rebooted when the UPS is turned back on, either when power returns or the fault is corrected.

Only computers with IP addresses stored on the UPS Network Management Card are allowed to order the UPS to turn off. In **Figure 2** above, computers 192.168.11.100, 192.168.11.101, 192.168.11.102, 192.168.11.103, 192.168.12.200, 192.168.12.201, 192.168.12.202, and 192.168.11.104 will be able to turn off the UPS. Computers 192.168.12.203 and 192.168.12.204 will not be allowed to turn off the UPS.

Putting the IP Addresses on the UPS Network Management Card

When you execute the PowerChute Network Shutdown installation program, it will add the IP address of the computer to the list stored on the UPS Network Management Card. If the list is already full (contains 50 addresses), then the new address will not be added.

When you execute the silent installation (command line installation) for PowerChute Network Shutdown, you can choose whether or not to add the computer IP address to the UPS Network Management Card's list. Refer to the PowerChute Network Shutdown installation guide for details on how to do this.

You can add or delete IP addresses from the UPS Network Management Card at any time through the UPS Network Management Card user interface. Refer to the UPS Network Management Card installation guide or the PowerChute Network Shutdown installation guide for details on how to do this.