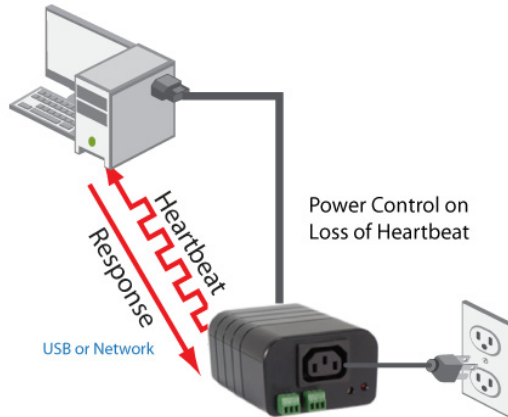


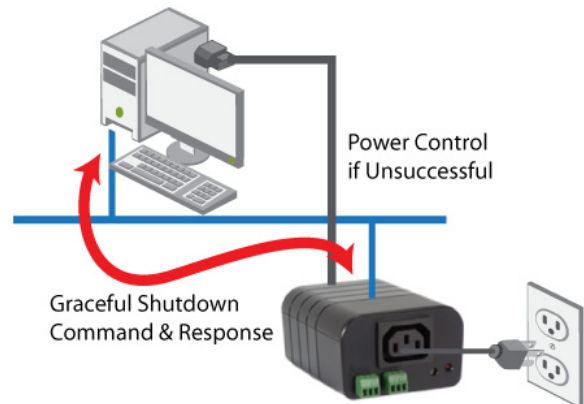
1. General Description

The iBoot Utility program complements the iBoot-G2+ Network Power Switch. It allows implementation of two useful features:

- **iBoot Heartbeat** – With iBoot Heartbeat, the server or PC with this utility installed, will send periodic 'heartbeat' messages to the iBoot-G2 to validate it's functional status. If the iBoot-G2+ does not receive this heartbeat, it will automatically perform a power function (generally one or more reboots).
- **Graceful Shutdown** - With Graceful Shutdown, the iBoot will communicate with the server or PC to do a soft (graceful) shutdown or restart prior to performing a hard power switch. If the computer successfully performs the graceful operation, the hard power operation is aborted.



iBoot Heartbeat



Graceful Shutdown

This version of the iBoot Utility is designed for the model iBoot-G2+ with firmware version 1.10.xxx and above. For earlier versions of the iBoot-G2+, use the iBoot Heartbeat utility.

2. Installation

The iBoot Utility provides the Heartbeat and Graceful Shutdown functions for Operating Systems Windows XP or later.

- Download the iBoot Utility from dataprobe.com/support/
- Install the iBoot Utility
- Run the iBoot Utility
- Set the parameters as required.
- Start the Heartbeat

Download and Install the iBoot Utility (setup_iboot_utility_v2.10.09.exe) from the iBoot-G2+ section of dataprobe.com/support. The iBoot Utility is compatible with computers running Windows XP and later.

Run downloaded program. The installation will create a Start Menu folder Dataprobe with the iBootUtility program.

Run iBootUtility.exe

3. Heartbeat

The Heartbeat Detection feature in iBoot, version 1.6 and above will extend iBoot's automatic capabilities beyond the capabilities of the current AutoPing feature. The Heartbeat Detection feature will function in a similar manner to the AutoPing, except in the opposite direction. iBoot will receive a periodic message (Heartbeat from the computer running the iBoot Utility, or using the Heartbeat protocol with some other software. Upon failure to receive that periodic message, iBoot will perform its programmed function.

Typically, this feature will be used to allow servers to generate a health OK message to iBoot. When this message is no longer received, iBoot will reboot the server. Several setup options will provide great flexibility in configuring this option. This feature will work simultaneously with AutoPing, with independent configuration parameters.

3.1. Heartbeat Status Page

The iBoot Utility displays the current status of the Heartbeat and allows setup of the Heartbeat and Graceful Shutdown parameters. The Utility can be minimized to the system tray using File > Minimize to Tray.

The Heartbeat can be started and stopped using the Start and Stop buttons.

The iBoot Utility displays the current state of the Heartbeat:

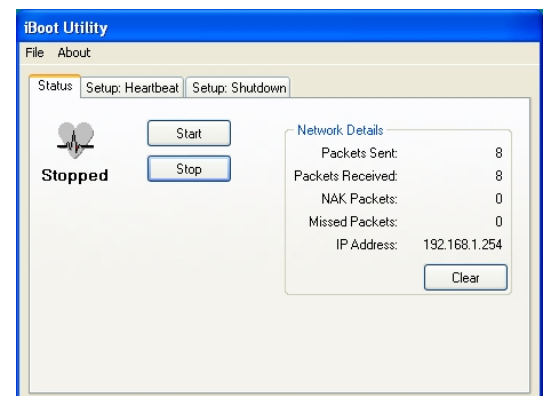
Stopped: The Heartbeat Generator is not running.

OK: The Generator is running and receiving acknowledgements from the iBoot.

FAIL: The Generator is running but not receiving acknowledgements from the iBoot

When the iBoot Utility and the iBoot are communicating properly, the status will change from Stopped to OK.

The Status page also indicates:



Packets Sent: The number of heartbeats generated since the last Clear.

Packets Received: The total number of responses to packets since the last Clear.

NAK Packets: The total number of NAK packets received since the last Clear

Missed Packets: The total number of packets sent without response since the last Clear.

IP Address: The destination IP Address of the heartbeats (Network Only)

To reset the counters, click the Clear button.

3.2. Configuring Heartbeat Parameters

To configure the Heartbeat parameters, click on the **Setup: Heartbeat** tab.

Frequency: Enter the Frequency to send the heartbeat, in seconds. Make sure this frequency is less than the Frequency setting for the heartbeat on the iBoot.

Fail Count: Enter the number of times the heartbeat needs to fail for the program to set the status to FAIL. This count works independently from the Fail Count on the iBoot, and does not affect the power status of the iBoot.

Select the mode of transmission of the Heartbeat using the radio buttons.

- Network
- USB
- None

If None is selected, the Start Button on the Status screen will not operate.

Network Setup. Set the parameters to send the heartbeat across the network

IP Address: Enter the IP Address of the iBoot

Port: Enter the UDP Port that the iBoot is looking for the heartbeat. Default is 9100

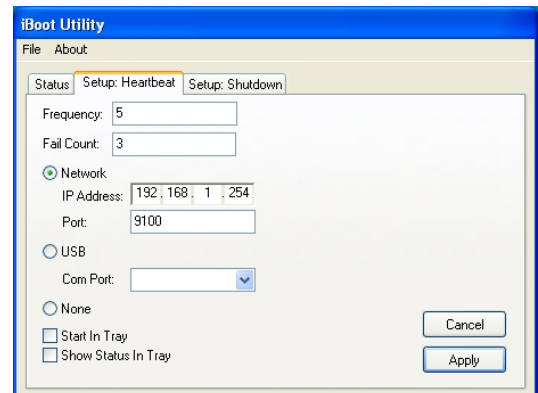
USB Setup. Set the parameters to send the heartbeat via USB.

Com Port: Enter the COM port assigned to the iBoot. Refer to Section 4.4 in the iBoot-G2+ Manual for COM port installation.

Start in Tray. With this checkbox selected, the iBoot Utility will start minimized to the System Tray. When it is not checked, the Utility will open to the Status tab.

Show Status in Tray. With this checkbox selected, the iBoot Utility will display the current status of the Heartbeat in the system tray. If you are only using the Graceful Shutdown feature this checkbox can be de-selected to eliminate the heartbeat status information.

Click Apply to save the features as programmed. Click Cancel to abort making any changes.



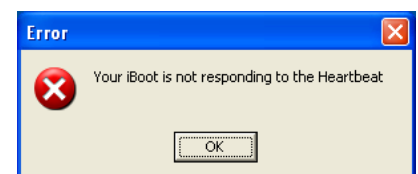
3.3. Failure Messages

When the program detects a lack of responses by the iBoot to heartbeats:

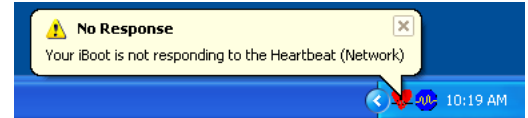
The tray icon will change from green to red

If the program has focus, a popup message will display

If the program is running in the system tray, a message balloon will be displayed.



The popup and balloon identify Network or USB depending on the failure.



3.4. Available Heartbeat Developer Tools

Dataprobe provides several tools to assist developers to make use of the Heartbeat Feature.

- The Heartbeat Protocol allows developers to imbed this capability directly into their software products.
- A windows Dynamic Linked Library (DLL) is available to allow users to quickly develop and deploy heartbeat enabled applications
- A Windows executable program that will run as a tray applet that will transmit heartbeats to an iBoot.

3.5. Heartbeat Protocol

The iBoot heartbeat protocol is a simple ACK/NAK protocol. The host computer sends the heartbeat message to the IP address and Heartbeat port of the iBoot. The iBoot checks the message for validity and responds with an ACK if the message is valid or a NAK if the message was invalid.

Over the network, the message is UDP at the port assigned. Over USB, it is serial data at 9600 bps, 8 data bits, one stop bit, no parity (9600,8,N,1)

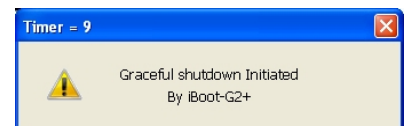
All messages are case sensitive.

Heartbeat Message: iBootHB
ACK Message: iBootACK
NAK Message: iBootNAK

4. Graceful Shutdown

The Graceful Shutdown features allows the user to attempt a graceful shutdown or restart prior to the iBoot-G2+ making a hard power switch to accomplish the same function. When Graceful Shutdown feature is enabled in the setup of the iBoot-G2+, any operation that would cause the iBoot to switch power off, or cycle power from on to off to on (reboot) will first be attempted gracefully.

The Utility has a notification feature that alerts a desktop user that their computer is about to undergo a shutdown or restart process. This notification appears as pop-up window. The notification includes a 10 second countdown timer. **The computer operator does not have the ability to delay or about the programmed action.**



4.1. Graceful Shutdown

Each time a Power Off command is received through the iBoot-G2+, The iBoot-G2+ will first issue a 'Shutdown' command to the iBoot Utility. After a fixed amount of time, as programmed in the iBoot-G2+ under Hard Shutdown Delay, the iBoot-G2+ will turn the power off.

If the iBoot-G2+ is not able to communicate with the iBoot Utility software to issue the Shutdown command, the power will be turned off immediately.

4.2. Graceful Restart

Each time the iBoot-G2+ receives a Cycle command with the power status currently ON (reboot) the iBoot-G2+ will first issue a 'Restart' command to the iBoot Utility. The iBoot-G2+ will wait a preprogrammed amount of time to allow the graceful restart to occur. If the iBoot-G2+ does not detect that the target computer has restarted, the iBoot-G2+ will perform the hard cycle command as programmed. If the iBoot-G2+ does not communicate with the iBoot Utility it will perform the hard reboot immediately.

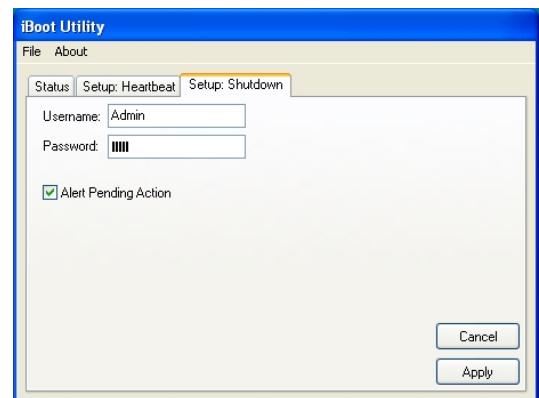
The delay time to allow the graceful restart is programmed in the iBoot-G2+ as the Hard Reboot Delay. Set this time to be long enough for a complete restart, including re-loading of the iBoot Utility.

4.3. Configuring Graceful Parameters

Use of the iBoot Graceful Shutdown feature requires a shared set of username and password with the iBoot-G2+. Program these credentials exactly as set in the iBoot-G2+

The Alert Pending Action checkbox enables the warning message of a pending action by the iBoot Utility. The alert box adds 10 seconds to the time before the graceful shutdown or restart occurs. Check the programming of the Hard Shutdown and Hard Restart parameters of the iBoot-G2+ to accommodate this extra 10 seconds.

Click Apply to save the features as programmed. Click Cancel to abort making any changes.



5. Technical Support and Warranty

Dataprobe Technical Support is available 8:30AM to 5:30PM ET to assist you in the installation and operation of this product. To obtain Technical Support call 201- 934-5111, or Email us at tech@dataprobe.com. Please have the following information available when you call:

- Model of Product
- Lot and Version Numbers
- Data of Purchase
- Name of Seller (if other than Dataprobe)

If you purchased this product through an Authorized Dataprobe Reseller, you should contact them first, as they may have information about the application that can more quickly answer your questions.

5.1. WARRANTY

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship for a period of One Year from the date of initial purchase. If the product should prove defective within that period, Seller will repair or replace the product, at its sole discretion.

Service under this Warranty is obtained by shipping the product (with all charges prepaid) to an authorized service center. Seller will pay return shipping charges. Call Dataprobe Technical Service at (201) 934-5111 to receive a Return Materials Authorization (RMA) Number prior to sending any equipment back for repair. Include all cables, power supplies and proof of purchase with shipment.

THIS WARRANTY DOES NOT APPLY TO NORMAL WEAR OR TO DAMAGE RESULTING FROM ACCIDENT, MISUSE, ABUSE OR NEGLIGENCE. SELLER MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY EXPRESSLY SET FORTH HEREIN. EXCEPT TO THE EXTENT PROHIBITED BY LAW, ALL IMPLIED WARRANTIES, INCLUDING ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE; AND THIS WARRANTY EXPRESSLY EXCLUDES ALL INCIDENTAL AND CONSEQUENTIAL DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from jurisdictions to jurisdiction.

WARNING: The individual user should take care to determine prior to use whether this device is suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, the manufacturer makes no representation or warranty as to the suitability of fitness for any specific application.

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