



**iBoot  
Heartbeat Detection  
Feature Description & Protocol  
Version 1.6 and above**

## General Description

The Heartbeat Detection feature in iBoot, version 1.6 and above will extend iBoot's automatic capabilities beyond the capabilities of the current Auto Ping 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). 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 Auto Ping, with independent configuration parameters.

## Setup Options

**Frequency:** How often iBoot should expect the Heartbeat

Range: 1-99 Seconds

**Fail Counter:** How many missed heartbeats before Action is performed

Range 1-99

**Port:** TCP Port used for Heartbeat messages.

**Action:** What Action iBoot takes when number of missed heartbeats equals the Fail Counter

None: Heartbeat not used

Power On – Latch: Upon loss of heartbeat, iBoot will power on and remain so until changed via the web, ibootctl.exe or direct messaging.

Power On – Follow: Upon loss of heartbeat, iBoot will power on. When the heartbeat returns, iBoot will power off.

Power Off – Latch: Upon loss of heartbeat, iBoot will power off and remain so until changed via the web, ibootctl.exe or direct messaging.

Power Off – Follow: Upon loss of heartbeat, iBoot will power off. When the heartbeat returns, iBoot will power on.

Power Cycle: Upon loss of heartbeat, iBoot will cycle the power. iBoot will wait the Heartbeat Frequency; if the response does not return, the power will be cycled again. This will continue until the heartbeat returns or Heartbeat Feature is turned off. The Heartbeat Frequency will need to be longer than the time required to reboot the device.

Power Cycle Once: Upon loss of heartbeat, iBoot will cycle power one time. It will not cycle again automatically until the heartbeat returns and is lost again.

REF: protocols/ibootHB.doc

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## Heartbeat Generator

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

- The Heartbeat Protocol below will allow developers to imbed this capability directly into their software products.
- A Windows .dll file will also be available as a function call by another program. This will generate one heartbeat. The calling program will pass the IP address and port to the .dll.
- A Windows executable program (ie. i Boothb.exe) that will run as a tray applet that will transmit either continuous or single heartbeats to an iBoot.
- A Windows executable that will run as a tray application, monitor a specific process. If the monitored process stops responding the application will stop transmitting the heartbeat to the iBoot.

## Heartbeat Protocol

The iBoot heartbeat protocol is a simple UDP 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.

All messages are case sensitive.

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