

# The ServSwitch Affinity

Please read this procedure before proceeding.

## The Serial Options Menu

Once you have connected the dedicated terminal or computer running terminal emulation software to one of the ServSwitch Affinity's serial ports, make sure the data rate of the terminal or computer is set to match that of the Affinity's port. **9600, 8 bits, no parity, 1 stop bit, xon/xoff, or no flow control.** (If you're not sure how to do this for your software, refer to its manual or online help for instructions. If you're not sure whether the serial port on the Affinity unit is set to operate at 9600 bps or 57,600 bps, try 9600 bps first. That is the factory-default rate, and should be the rate that all of the serial ports on new ServSwitch Affinity Port Cards start out using.) Then turn on or cycle power to the Affinity. This message should appear on your screen:

**Hit the spacebar within 5 seconds to get serial options menu.**

If garbage characters appear instead, your terminal or software is set to the wrong data rate. Switch to the other one and cycle power to the Affinity again. When the message appears, as it should, press the spacebar. The serial options menu will appear after the Affinity finishes displaying its power-up diagnostic messages. This menu enables you to manipulate certain configuration settings and (if you're using a computer rather than a terminal) to perform flash upgrades.

1. Change starting cpu number.....1
2. Change the serial port baud rate.... [current rate, either "9600" or "57600"]
3. Receive new main program or kernel from serial port (this card only)
4. Send this unit's main program to other units
5. Send this unit's Kernel to other units
6. Reset Configuration data to factory defaults (this card only)
7. Save changes made in 1 and 2 (this card only)
8. Exit (restart the unit)

Enter choice.

## Flash Programming the Kernel and Program files

To download a flash-upgrade file from the computer to the Port Card you're communicating with on the ServSwitch Affinity, **press 3** at the serial options menu. This message will appear:

Waiting for file.....

***Whether you are downloading the flash for the first time, or copying to other cards, Remember to always flash the KERNEL FILE FIRST then the program file.***

The kernel filename will have a K in it; Ex: MXK14A.hex, and the program filename will have a P in it. Ex: MXP14C.hex.

Send your file using a simple ASCII text-file protocol. If you're using HyperTerminal in Windows, under the transfer option be sure to send the file as a text file. **Since these files have a .hex extension, you'll need to select "all files" when the send text file box opens in order to find the appropriate files.** While the file is being sent, the Card sends ASCII period characters back to the computer, as shown above, to indicate copy progress. Once the file has been sent, you should see the message:

Receive successful

Downloaded kernel code [or] Downloaded main code

The new program will now be downloaded from the Port Card's receive memory into flash memory, and the flash will be reprogrammed. You should see these messages:

## Flash programming.....

### Flash programming successful

### Serial options menu

*If something goes wrong during file transmission, see the **Errors** section at the end of this procedure.*

*If reprogramming seems to succeed, the procedure is finished if you're using a single Affinity with only that one Port Card installed in it. But if you're using a daisy chained Affinity system or even a single Affinity with *more than one Card* in it, you **must** use option **5 & 4** of the serial options menu to copy the new firmware to the other Port Cards in your Affinity system. (If you leave different versions of these programs running on different Port Cards in your Affinity system, the system is likely to malfunction, and to fix it you'll have to re-download and distribute the firmware anyway.)*

Once you've copied the new firmware throughout the system, restart the Affinity unit(s) and watch the power-up diagnostic screen (see to make sure that the "Kernel revision" and/or "Program revision" now match the revision number of the file(s) you just downloaded. Then test how the system performs. If it seems to behave properly, you're in business. (And you can continue configuring the Port Card if you need to.) You only need to use the above procedure to upgrade the main program or kernel of one Port Card in one ServSwitch Affinity. Afterward, unless the Affinity is a standalone unit with only a single Card installed, you'll need to use the procedure described here to send the upgrade simultaneously to all other Port Cards in your Affinity system.

### **Remember to always flash the kernel file first then the program file.**

At the serial options menu, to send the kernel program system wide, **press 5**; then to send the main program, **press 4**. These messages will appear for either option:

#### **Boards to update - n**

**You are about to copy the firmware from this board to all other boards in the system.**

**Are you sure? Y/N**

Before responding "Y," make sure that all other Affinity units in your system are attached and powered on. Also make sure that the number of boards (Port Cards)—the number that will appear where the variable "n" is shown in the message above—agrees with the actual number of Port Cards in the system *minus one*. If the number does not agree, reply with "N"; turn on any inactive Affinity units, make sure all Port Cards are securely installed, make sure all Expansion Cables are firmly seated, and press 4 or 5 again. If there is still a mismatch, call Black Box for technical support. But if the number of Cards is now correct, reply with "Y." This message will appear:

#### **Sending flash program code to other units.....**

When the transmission is complete, the system returns you to the serial options menu; wait at least 10 seconds, then cycle power to all of your Affinity units. Check their power-up diagnostic screens, if the new "Kernel revision" and/or "Program revision" number(s) match those of the file(s) you just distributed, all units in the system should now be operational.

## **Errors**

*If something goes wrong during file transmission, you might receive an error message advising you that a "checksum error," "record error," or "data error" has been detected. This message will be followed by:*

#### **Receive failed**

**Try again Y/N**

Error messages may be caused by any of these problems:

- Corrupted firmware-upgrade file
- The RS-232 cable or adapter is loose, too long, defective, or incorrectly pinned: see correct pinning below.
- RS-232 protocol not configured correctly
- Bad transmit or receive levels
- Hardware problem on transmit or receive side

Press "Y" and then [Enter] to try again, and you will be returned to the initial message, at which point you can resend the file:

Waiting for file...

Or press "N" and then [Enter] and the prompt "Hit enter to boot" will appear. Press the [Enter] key to launch the Affinity's diagnostics with the Port Card's firmware unchanged. If the trouble recurs and you can't pinpoint it, **call Black Box for technical support at 724-746-5500 press 1,2,2 for the connectivity group.**

**Adapter pinning is as follows:**

DB-9 FEMALE	RJ-45 FEMALE
RXD 2 -----	4 Transmit Data
TXD 3 -----	6 Receive Data
GND 5 -----	5 Signal Gnd.
CD,DSR,CTS 1,6,8 -----	3 Data Terminal Ready