

Cisco OEM Servers – Cisco Logo'd Cisco AON 8340-K9

IMPORTANT! Service Instructions

You must print and follow these instructions **BEFORE** taking a service call on this machine.

Machine data:

MT = 0159-080

IBM MT = 8863-PDH

The Cisco AON server has no keyboard, monitor or mouse!

Attachment of a remote terminal connection using a laptop computer is required to service the machine

Tool Requirements

Listed below are the tools that an SSR **MUST** have to prior to taking a call on the AON server:

- Laptop computer with Windows XP or Windows 2000 installed with HyperTerminal application available. (HyperTerminal comes standard in Windows XP and Windows 2000)
- Cable Kit (IBM Tool P/N 62H4857)
- USB Serial/Parallel adapter (FRU P/N 22P9036) if using a laptop without a serial port
- USB Floppy Drive (FRU P/N 05K9283) if using diskette images for BIOS and code updates

Note: AON has no on-board floppy drive

Product Overview

The Cisco 0159-080 server is a single fixed configuration of IBM's eServer x366 with Cisco branding and custom Cisco content. The Cisco branded model is called AON (Application Oriented Network). This unique IBM model 8863-PDH is based on the xSeries x366 model 8863-1RU with the following modifications:

- Custom bezel with Cisco color, logo, product name and product ID
- Customized Cisco BIOS (based on IBM standard BIOS)

Note: Always check with GSSC for latest release level

- 128MB Compact Flash module with Cisco boot code
- Custom PCI adapter card that hosts the compact flash (slot 2)
- NetXtreme 1000T+ Copper Ethernet adapter (slot 1)
- 2 x 36GB 10K rpm 2.5" SAS Hot-Swap HDDs with Cisco color bezel
- Custom CMOS settings on the I/O card
- Preloaded Cisco AON OS image – **Cisco service responsibility**
- Tarari PCI card (slot 6) – **Cisco service responsibility**
- **No keyboard**
- **No mouse**
- **No monitor**

All of the IBM serviced components of the server have IBM FRU/CRU parts.

Service Information

Service Deliverables

Cisco is requesting IBM to provide On Site Services per Contract # MSA MW00101 between IBM and Cisco Systems. The following On Site Service levels are required:

- 7x24x4 Same Day
- 5x9 NBD
- 5x9x4

Call Flow

The "Cisco xSeries" call flow follows the same call flow as standard IBM xSeries machines, going thru the Atlanta Service Support Center for call screening. MT is 0159.

Cisco TAC (Technical Assistance Center) will place all service requests to IBM, not end users. Cisco TAC is responsible for L1/L2 of the AON integrated product. Once a problem is isolated to the IBM manufactured hardware, Cisco TAC will place a service request to the GSSC. The support flow will be: End User→Cisco TAC→GSSC L1→WWBO→PE

Advance Notice of Installation Address

Because the AON server requires special tools and service procedures, Cisco has agreed to give IBM approximately 30 days advance notice of the installation address for any AON system to be serviced. OEM Service Planning and the NSO will communicate this information to the affected IBM service geography location.

Special Service Considerations

The Cisco 0159-080 AON server is essentially an IBM xSeries 8863 with some custom content. Standard x366 PD, diagnostic and part replacement procedures should be employed to service this model. The following outlines the unique service procedures that are required due to the custom content and unique Cisco field environment.

Attaching a Laptop Computer as a Remote Console Device

In the Cisco field environment, there is no keyboard or monitor available to the SSR. A laptop computer will need to be connected as a terminal emulation device. Use the following procedure to launch and configure HyperTerminal and attach the laptop to the server.

Launch and Configure HyperTerminal from Windows XP or Windows 2000

1. From the **Start** menu select **Programs** → **Accessories** → **Communications** → **HyperTerminal**
2. Enter a name (e.g. AON Server) and select an icon for the connection in the **Connection Description** dialogue box
3. Press **OK**
4. In the **Connect To** dialog box select **COM1** (or active COM port on your laptop) from the **Connect using:** drop down menu
5. Press **OK**
6. Select the following from the COM(X) Properties Port Settings drop down menus
 - Bits per second:** → **9600**
 - Data bits:** → **8**
 - Parity:** → **None**
 - Stop bits:** → **1**
 - Flow control:** → **None**
7. Press **OK**
8. Select **File** → **Properties** from the HyperTerminal task bar
9. Click on the **Settings** tab
10. Select VT100 in the **Emulation** drop down menu
11. Press **OK**

Connect the laptop using a null modem cable

1. Obtain cable kit with null modem cable Tool # 62H4857. The null modem cable is the cable with female DB25 & DB9 pigtailed on each end.
2. Connect one end of the null modem cable to the COM port on your laptop that was selected when configuring the HyperTerminal session.

Note: If your laptop does not have a serial port, obtain USB Serial/Parallel adapter (FRU# 22P9036) and connect using a USB port.

Here is a link to the IBM web to download the driver for installing the USB Serial/Parallel adapter if you have not previously installed the device.

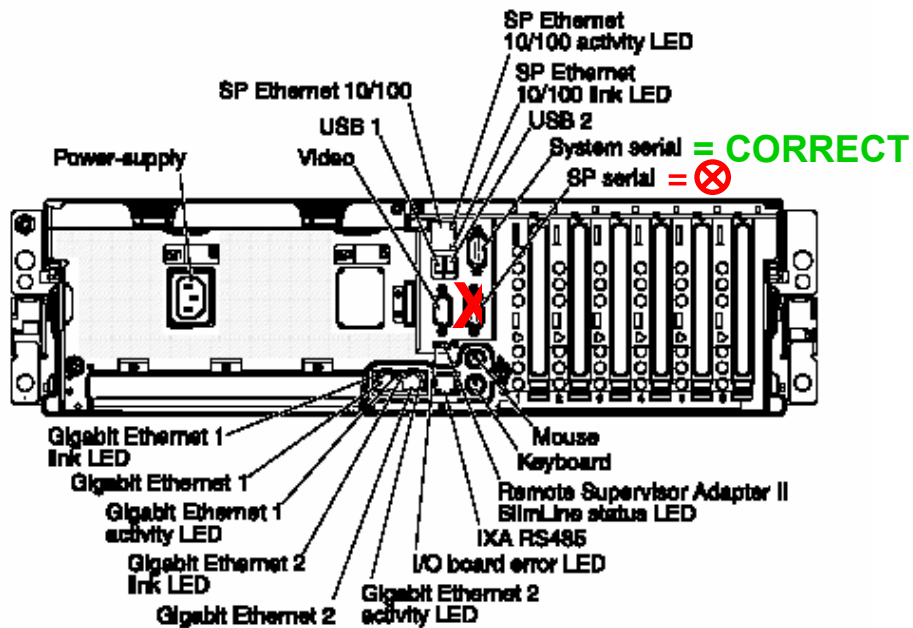
<http://www-307.ibm.com/pc/support/site.wss/document.do?sitestyle=ibm&Indocid=MIGR-41778>

3. Connect the other end of the cable to System Serial Port on the AON server. The System Serial Port is the upper serial port on the rear panel of the AON server. See Figure 1. If the customer has a remote console connected to the System Serial Port, unplug the customer connection and attach the cable.



CAUTION: The System Serial Port is the upper serial port connector and is identified with a teal color bezel. The lower, SP Serial Port is not active and cannot be used for this function.

Figure 1. Location of System Serial Port Connector for Remote Terminal Attachment



4. Laptop can now be used as a remote console. Proceed with x366 service activity.

Custom Cisco AON BIOS

The BIOS on the Cisco AON server is a custom BIOS based on the standard IBM BIOS. It is mandatory to use the Cisco AON BIOS CD iso-image or BIOS flash diskette when updating BIOS during a service call.



CAUTION: Always flash a replacement planar FRU with the Cisco BIOS using the CD or diskette image. See Appendix 3.

The latest level CD and diskette images for the Cisco BIOS flash utility can be downloaded from CORE and InfoTips.

Note: Always check with GSSC for latest release level

The flash utility works the same as the standard IBM BIOS for the x366. When flashing BIOS, update the Serial Number when prompted to the IBM seven digit serial number located on the chassis (e.g. 26K8806). Also update the Machine Type/Model when prompted to **8836PDH**. Make sure to save settings.



CAUTION: The Cisco AON application will not run without the IBM Serial Number and Machine Type/Model correctly set in BIOS. Always verify settings are correct.

Verify the Machine Type Model and Serial Number are correct:

- Boot to F1 Setup
- Select System Information
- Select Product Data
- Verify Serial Number and Machine Type/Model fields are correct
- If Serial Number and/or Machine Type/Model are incorrect, rerun BIOS flash

I/O Card Replacement

The I/O card contains the BIOS CMOS settings.



CAUTION: The settings for the Cisco AON server are different then the standard IBM default settings. When replacing an I/O card FRU in an AON machine, it is necessary to run a bootable CMOS settings utility to update the I/O card to the Cisco defaults. The bootable CD and diskette image utility can be downloaded from CORE and InfoTips.

Use the following procedure to update the CMOS settings.

Note: The utility will flash the CMOS settings and warm reboot. This takes approximately 4 minutes. During this period, there will be no video directed to the laptop.

1. Obtain a copy of the CMOS settings utility from CORE: See Appendix 3
2. Insert the CD or diskette into the drive
3. Boot the server
4. Wait until the “Cisco AON CMOS Settings Updated Successfully” message appears.
5. Remove CD or diskette
6. Proceed with normal service activity

Compact Flash PCI card with flash module

The PCI card in slot 2 is an IBM designed and supported adapter that contains a 128MB flash memory module. The flash module contains the Cisco AON boot image. If “O/S cannot be found” errors occur, reseal / replace the flash module with FRU P/N 39Y6827 and/or PCI card with FRU P/N 40K2498. Contact Atlanta GSSC for assistance.



CAUTION: The compact flash module FRU (P/N 39Y6827) cannot be substituted since the FRU contains the Cisco boot code.

Tarari PCI Card

The PCI card in slot 6 is a third party adapter made by Tarari. Although IBM integrates this card into the machine as an accommodation to Cisco, IBM has no warranty or service responsibility for this card. Cisco should screen for failing Tarari cards prior to placing a service request to IBM. If during IBM PD a problem is isolated to this card, the IBM action is to turn this problem over to Cisco TAC.



CAUTION: IBM does not stock this service part. If IBM determines the PCI card is failing, the SSR should contact the Front Office to have this communicated to Cisco Systems for resolution.

APPENDIX 1

AON Trouble Shooting Guide

Use the following table to diagnosis and correct some unique problems found in servicing the Cisco AON server.

| PROBLEM | CAUSE | ACTION |
|---|--|--|
| Remote laptop console not operational (No video or key entry over serial connection) | <ul style="list-style-type: none"> • Straight serial cable used instead of a null modem cable • Null modem cable connected to the SP Serial connector; not the System Serial Connector • COM port on laptop is disabled • COM port selected in HyperTerminal setup does not match the laptop active COM port | <ul style="list-style-type: none"> • Make sure cable is a null modem cable • Connect null modem cable into the System Serial connector (Top serial port connector). • Using the Windows Device Manager, make sure that the COM port is enabled and that no conflicts exist. • Make sure the COM port used by HyperTerminal matches the active COM port connected to the null modem cable |
| Remote console video characters appear erroneous (No readable text) | <ul style="list-style-type: none"> • COM port settings in HyperTerminal are incorrect • HyperTerminal Emulation is set incorrectly | <ul style="list-style-type: none"> • Relaunch HyperTerminal and select the following COM port settings <ul style="list-style-type: none"> - Bits per second: 9600 - Data Bits: 8 - Parity: None - Stop Bits: 1 - Flow Control: None • Set Emulation to VT100 from the HyperTerminal Properties / Settings menu. |
| Cisco OS will not load/run after flashing BIOS or replacing a planar board | <ul style="list-style-type: none"> • Serial Number and/or Machine Type / Model not set correctly in BIOS | <ul style="list-style-type: none"> • Boot to F1 Configuration and Set Up to verify Serial Number and Machine Type / Model are set correctly in the Product Data. Run BIOS flash utility if changes are required. |

| | | |
|---|---|--|
| OS cannot be found error | <ul style="list-style-type: none"> • PCI Flash card or compact flash memory module defective | <ul style="list-style-type: none"> • Reseat/replace the PCI card in slot 2 or the flash module on the PCI card |
| Remote Console not working after replacing the Super I/O card | <ul style="list-style-type: none"> • Replacement FRU contains IBM CMOS defaults which do not enable console redirection to the serial port | <ul style="list-style-type: none"> • Run the CMOS Settings flash utility available on CORE. |
| PCI Card in slot 6 appears defective | <ul style="list-style-type: none"> • Unknown | <ul style="list-style-type: none"> • Contact IBM Remote Support to have Cisco take over Service responsibility |
| My laptop has no serial port to connect the null modem cable | <ul style="list-style-type: none"> • No onboard serial connector | <ul style="list-style-type: none"> • Obtain USB Serial/Parallel adapter (FRU# 22P9036) and connect through a USB port |

APPENDIX 2

Service Parts

IBM owned service parts will be used for service.



CAUTION: Cisco Systems TAC should be consulted before replacing any part a second time. Many functions of this server are under control of the Cisco application and OS.

The FRU list is as follows:

* = Cisco unique part

| FRU P/N | DESCRIPTION | CRU/FRU |
|---------|--|----------|
| 00N6996 | Serial Cable Assembly - Chassis | FRU |
| 01R1479 | Baffle, Air Block | CRU – T2 |
| 03K9050 | PCI Spacer | CRU – T1 |
| 13M7878 | Processor – 3.16GHz Cranford (4) | FRU |
| 13M7880 | Backplane Card SAS HDD | CRU – T2 |
| 13M7881 | Backplane Card Media Interposer | CRU – T2 |
| 13N2233 | RAID 8i Card | CRU – T2 |
| 13N2256 | Battery Pack – RAID 8i | CRU – T2 |
| 23K4105 | Planar – Scalable Viper | FRU |
| 23K4107 | Memory Card | CRU – T1 |
| 23K4109 | I/O Planar (SAS Super I/O) | CRU – T2 |
| 23K4111 | Backplane Card Rack Power | FRU |
| 24P1067 | Cable – PCI Hot Swap | CRU – T2 |
| 24P1295 | Lift Handle Kit | CRU – T1 |
| 24R2715 | Power Supply – 1300 Watt subs to 39Y7341 | CRU – T1 |
| 25K9610 | Cable – SAS 4X | FRU |
| 25K9618 | Cable – Zeus USB | FRU |
| 25K9622 | Cable – SAS Power | CRU – T2 |
| 25K9626 | Cable – DVD | CRU – T2 |
| 25K9628 | Cable – OP Panel | FRU |
| 25R5236 | Rack Kit | CRU – T1 |
| 25R5238 | Cable Management Arm | CRU – T1 |
| 26K5413 | DVD – ROM Drive 8x24X | FRU |
| 26K8805 | Heat Sink | FRU |
| 26K8836 | Retention Module | FRU |
| 26K8923 | System Label | CRU – T1 |
| 26K8941 | AC Inlet Filler Plug | FRU |
| 26K8943 | Scalability Filler | FRU |
| 26K8946 | Chassis Assembly | FRU |
| 26K8947 | Top Cover | CRU – T1 |
| 26K8948 | Bracket – EIA Mounting | FRU |
| 26K8950 | PS Support Assembly | CRU – T2 |

| | | |
|----------|---|----------|
| 26K8951 | PCI Card Guide | CRU – T2 |
| 31P6309 | Card – Ethernet | CRU – T2 |
| 33F8354 | Battery – 3.0V CMOS Coin Cell | CRU – T1 |
| 36L8886 | Line Cord | CRU – T1 |
| *39M2637 | Bezel Kit – Cisco | CRU – T1 |
| *39M2638 | HDD Filler – Cisco | CRU – T1 |
| 39M2521 | Operator Panel Assembly with bracket | CRU – T2 |
| *39Y6827 | Compact Flash Module w/ Cisco AON image | CRU – T1 |
| 39Y7341 | Power Supply -1300W | CRU – T1 |
| *40K1004 | HDD, 36GB 10K SCSI - Cisco | CRU – T1 |
| *40K2498 | PCI Card – Compact Flash - Cisco | FRU |
| 48P9687 | Fan – 92mm High Speed | CRU – T1 |
| 59P4739 | Alcohol Wipe | FRU |
| 59P4740 | Thermal Grease | FRU |
| 73P2870 | Memory – 1GB PC2-3200, ECC, SDRAM RDIMM | CRU – T1 |
| 73P6869 | PCI Hot Switch Card Assembly | CRU – T2 |
| 74P4485 | VRM 2U/105A | FRU |
| 90P5051 | Fan – 80mm High Speed | CRU – T1 |

APPENDIX 3

AON Machine Code

The following are the supported machine code levels for the Cisco AON server. The highlighted files are unique to the Cisco server. The non-highlighted files are common code for the 8836 Machine Type.

Note: Always check with GSSC for latest supported level. The Cisco BIOS and I/O Card CMOS Settings Utility can be downloaded from CORE and InfoTips.

Cisco BIOS 45A

- **ZUJC45A.img** → BIOS 45A flash utility diskette image for Cisco AON (**unique to Cisco**)
- **ZUJC45A.iso** → BIOS 45A flash utility CD image for Cisco AON (**unique to Cisco**)
- **ZUJC45A.txt** → BIOS 45A flash utility Text file for Cisco AON (**unique to Cisco**)

I/O Card CMOS Settings Utility

- **IBM Service CMOS Settings Cisco AONs-V1.img** → CMOS Settings Utility diskette image for Cisco AON (**unique to Cisco**)
- **IBM Service CMOS Settings Cisco AONs-V1.iso** → CMOS Settings Utility CD image for Cisco AON (**unique to Cisco**)

BMC Firmware

- ZUBT34A.img → BMC 34A for IBM (and Cisco)

CPLD Code

- HEUD10A.img → CPLD 10 for IBM (and Cisco)

Diagnostics Code

- ZUY120A.img → Diags 20 diskette 1 of 2 for IBM (and Cisco)
- ZUY220A.img → Diags 20 diskette 2 of 2 for IBM (and Cisco)

ServeRAID BIOS

- 5.02.8110 → ServeRAID BIOS (on RAID 8i Card) Hollywood CD build ID 3332