Providing telecommunications security

Telecommunications security (of voice, data, and video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or person working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either throughput synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Use (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including, but not limited to, human and data privacy, intellectual property, material assets, financial resources, labor costs, and legal costs).

Your responsibility for your company's telecommunications security

The final responsibility for securing both this system and its networked equipment rests with you, an Avaya customer's system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources, including, but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

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Preparing for installation

This section contains the following information that will help you prepare for the computer installation:

- **Safety precautions** on page 3
- **System precautions** on page 4
- **Required tools** on page 5
- **Electrical specifications** on page 5
- **Physical specifications** on page 6
- **Service access specifications** on page 6

⚠️ **Important:**

DO NOT install any internal hardware shipped with the Sun machine during customer site assembly and power up. Any internal hardware shipped will be installed under the direction of an Avaya CMS Provisioning Engineer at the scheduled provisioning appointment time.

### Safety precautions

For your protection, observe the following safety precautions when setting up your equipment:

- Follow all cautions, warnings, and instructions that are marked on the equipment.
- Never push objects of any type through openings in the equipment. Objects might touch dangerous voltage points or short out components, resulting in fire or an electric shock.
- When moving the computer, be careful not to unplug any power or data cables.
- Refer servicing of equipment to qualified personnel.
- To protect both yourself and the equipment, observe the following precautions.

<table>
<thead>
<tr>
<th>Item</th>
<th>Problem</th>
<th>Precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrist or foot strap</td>
<td>ESD</td>
<td>Wear a conductive wrist strap or foot strap when handling printed circuit boards.</td>
</tr>
<tr>
<td>Cover panels</td>
<td>System damage and overheating</td>
<td>Reinstall all cabinet cover panels after you perform any service work on the system.</td>
</tr>
<tr>
<td>Card slot filler panels</td>
<td>System damage and overheating</td>
<td>Ensure that a filler panel is installed on all empty card slots.</td>
</tr>
</tbody>
</table>
System precautions

Ensure that the voltage and frequency of the power outlet that is used matches the electrical rating labels on the equipment.

Wear antistatic wrist straps when handling any magnetic storage devices, CPU/Memory boards, or other printed circuit boards.

The V880 computer has three autoranging power supplies that use nominal input voltages of 100 to 240 V AC at 47 to 63 Hz. The V890 computer has three autoranging power supplies that use nominal input voltages of 200 to 240 V AC at 47 to 63 Hz.

⚠️ WARNING:
You cannot interchange power supplies between a V880 and V890 computer.

Sun products are designed to work with single-phase power systems that have a grounded neutral conductor. To reduce the risk of electrical shock, do not plug Sun products into another type of power source. Contact your facilities manager or qualified electrician if you are unsure of what type of power is supplied to your building.

Avaya recommends that you use one of the following power schemes:

- For a V880, use two (2) 2KVA Uninterruptible Power Supplies (UPS) (or equivalent), each powered by a nonswitched, dedicated, 15-amp circuit. Connect two of the power supplies to one UPS, and the third power supply to the second UPS. The monitor and external peripherals can also be connected to the second UPS.
- For a V890, use one 6KVA UPS (or equivalent), powered by a nonswitched, dedicated, 15-amp circuit. Connect all of the power supplies to the UPS. The monitor and external peripherals can also be connected to the UPS.

Note:
If not using a UPS, connect each power supply to a nonswitched, dedicated, 15-amp circuit. Connect the monitor and external peripherals to a separate circuit.

Each of the following items require a separate power cord:

- Power supplies in the computer (3 power cords)
- External peripherals
- Monitor

⚠️ WARNING:
Do not make mechanical or electrical modifications to the cabinet. Sun Microsystems is not responsible for regulatory compliance of modified cabinets.
Required tools

You need the following tools to do the installation:

- Phillips #2 screwdriver
- Needle-nose pliers
- ESD grounding wrist strap
- Antistatic mat

Electrical specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>V880</strong></td>
<td><strong>V890</strong></td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td></td>
</tr>
<tr>
<td>Nominal voltage range</td>
<td>100-240 V AC, autoranging</td>
</tr>
<tr>
<td>Maximum current AC RMS</td>
<td>15.0 A @100 VAC</td>
</tr>
<tr>
<td>AC operating range</td>
<td>90-264 V rms, 47-63Hz</td>
</tr>
<tr>
<td>Nominal frequencies</td>
<td>50 Hz or 60 Hz</td>
</tr>
<tr>
<td>Maximum DC power output</td>
<td>2240 W</td>
</tr>
<tr>
<td>Maximum system AC power consumption</td>
<td>3000 W</td>
</tr>
<tr>
<td>Maximum system heat dissipation</td>
<td>10308 BTU/hr</td>
</tr>
<tr>
<td>Volt-ampere rating</td>
<td>1515 VA with 1120 Watt load (PF=0.99)</td>
</tr>
<tr>
<td>Wall plug type</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>NEMA 5-15P</td>
</tr>
<tr>
<td>Non-United States</td>
<td>Power cords must be obtained locally</td>
</tr>
<tr>
<td>CPU plug type</td>
<td>IEC 320</td>
</tr>
</tbody>
</table>
Physical specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>English value</th>
<th>Metric value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (with casters)</td>
<td>28.1 inches</td>
<td>71.4 centimeters</td>
</tr>
<tr>
<td>Width</td>
<td>18.9 inches</td>
<td>48.0 centimeters</td>
</tr>
<tr>
<td>Depth</td>
<td>32.9 inches</td>
<td>83.6 centimeters</td>
</tr>
<tr>
<td>Weight (min-max)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>194-288 pounds</td>
<td>88-130.6 kilograms</td>
</tr>
<tr>
<td>Power cords</td>
<td>8.2 feet</td>
<td>2.5 meters</td>
</tr>
</tbody>
</table>

<sup>1</sup> The actual weight depends on the installed options.

Service access specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>English value</th>
<th>Metric value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front&lt;sup&gt;1&lt;/sup&gt;</td>
<td>36 inches</td>
<td>91 centimeters</td>
</tr>
<tr>
<td>Rear</td>
<td>36 inches</td>
<td>91 centimeters</td>
</tr>
<tr>
<td>Left</td>
<td>36 inches</td>
<td>91 centimeters</td>
</tr>
<tr>
<td>Right</td>
<td>36 inches</td>
<td>91 centimeters</td>
</tr>
</tbody>
</table>

<sup>1</sup> 48 inches (122 centimeters) for rack mounted systems.
Front panel

The following figure shows the front of the computer with the disk drive door open.
Back panel - V880

The following figure shows the back panel of the V880 computer. The slots designated for optional ethernet cards can house the FastEthernet, Quad GigaSwift, or single Gigabit ethernet cards.
Back panel - V890

The following figure shows the back panel of the V890 computer. The slots designated for optional ethernet cards can house the Quad GigaSwift or single Gigabit ethernet cards.
Setting up power

To set up the AC power:

1. Locate the key switch, insert the key, and turn the key switch to the Forced Off position. See the following figure.

2. Connect the IEC 320 end of each power cord to the AC connector of each power supply.

   For installations outside the United States and Canada, obtain three power cords for your local configuration.

3. Route the power cord through the strain-relief tie-wrap loop located to the right of the supply. Tighten the tie-wrap to secure the connection.

4. Connect the power using one of the following schemes:

   - For a V880, use two (2) 2KVA Uninterruptible Power Supplies (UPS) (or equivalent), each powered by a nonswitched, dedicated, 15-amp circuit. Connect two of the power supplies to one UPS, and the third power supply to the second UPS. The monitor and external peripherals can also be connected to the second UPS.

   - For a V890, use one 6KVA UPS (or equivalent), powered by a nonswitched, dedicated, 15-amp circuit. Connect all of the power supplies to the UPS. The monitor and external peripherals can also be connected to the UPS.

   **Note:**

   If not using a UPS, connect each power supply to a nonswitched, dedicated, 15-amp circuit. Connect the monitor and external peripherals to a separate circuit.

   **Important:**

   Do not turn on power at this time.
Peripheral connectivity

The following figure shows in general how equipment is connected to the computer. The callouts are described in Parts list on page 12.

⚠️ Important:
DO NOT install any internal hardware shipped with the Sun machine during customer site assembly and power up. Any internal hardware shipped will be installed under the direction of an Avaya CMS Provisioning Engineer at the scheduled provisioning appointment time.

For detailed switch link connectivity, see CMS Switch Connections, Administration, and Troubleshooting.

X.25 switch links (R3V11 only)
One HSI/P card is used for up to four ACDs. A second HSI/P card is needed for five to eight ACDs.

Important:
Black Box RS-449 - RS-232 interface converter
Black Box RS-449 - RS-232 interface converter

External SCSI devices
External SCSI tape drive for data migration only

System console
Monitor
Mouse
Keyboard
Graphics card
USB port
Serial Port A
AC power

Remote console
Required telephone line to remote maintenance center

Ethernet LAN connections
To customer network for CMS Supervisor, network printers, and LAN backup

To serial terminals, printers, and modems (R3V11 and earlier; R12 and later, permissive use only)

For detailed network hub and NTS connectivity, see CMS Terminals, Printers, and Modems

NTS
Ethernet port for R7 and later switch links (supports up to eight ACDs)

For detailed switch link connectivity, see CMS Switch Connections, Administration, and Troubleshooting

Network hub
Optional ethernet port (two cards maximum)

For detailed network hub and NTS connectivity, see CMS Terminals, Printers, and Modems

External SCSI devices
External SCSI tape drive for data migration only

For detailed switch link connectivity, see CMS Switch Connections, Administration, and Troubleshooting

Monitor
Modem
Required telephone line to remote maintenance center

For detailed network hub and NTS connectivity, see CMS Terminals, Printers, and Modems
## Parts list

The following table lists the parts that are required to connect most external devices to the computer. For information about connecting terminals, printers, and modems to the computer, see *Avaya CMS Terminals, Printers, and Modems*. For information about switch connections for CMS, see *Avaya Call Management System Switch Connections, Administration, and Troubleshooting*.

<table>
<thead>
<tr>
<th>Connectivity diagram call out</th>
<th>Material ID or part of Material ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(^1)</td>
<td>408128288</td>
<td>HSI/P card (V880 only; up to two may be installed)</td>
</tr>
<tr>
<td>B(^1)</td>
<td></td>
<td>HSI/P quad cable (V880 only; 1 per HSI/P card)</td>
</tr>
<tr>
<td>C</td>
<td>407086818</td>
<td>RS-449 cable (V880 only; 10 feet, 3 meters)</td>
</tr>
<tr>
<td>D(^1)</td>
<td>N/A(^2)</td>
<td>SunSwift card (V880 only), or Dual FastEthernet and Dual SCSI card (V880 only), or Dual Ultra320 SCSI card (V890 only)</td>
</tr>
<tr>
<td>E(^1)</td>
<td>700230105</td>
<td>FastEthernet 10/100 Mbps card (V880 only), or Quad GigaSwift Ethernet card, or Single Gigabit Ethernet card</td>
</tr>
<tr>
<td></td>
<td>700352933</td>
<td></td>
</tr>
<tr>
<td></td>
<td>700362403</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>407086826</td>
<td>Category 5 UTP cable (10 feet, 3 meters)</td>
</tr>
<tr>
<td>G</td>
<td>846362754</td>
<td>DB25-to-RJ45 ACU modem adapter</td>
</tr>
<tr>
<td>H</td>
<td>846983039</td>
<td>10-wire modular cord (10 feet, 3 meters)</td>
</tr>
<tr>
<td>I</td>
<td>846362770</td>
<td>RJ45-to-DB25 remote console adapter</td>
</tr>
<tr>
<td>J</td>
<td>407633999</td>
<td>Sportster Model 839 33.6 remote console modem, Comsphere 3910 remote console modem</td>
</tr>
<tr>
<td></td>
<td>Varies</td>
<td></td>
</tr>
<tr>
<td>K(^1)</td>
<td>N/A(^2)</td>
<td>Graphics card</td>
</tr>
<tr>
<td>L(^1)</td>
<td>N/A(^2)</td>
<td>Monitor cable</td>
</tr>
<tr>
<td>M(^1)</td>
<td>N/A(^2)</td>
<td>Monitor</td>
</tr>
<tr>
<td>N(^1)</td>
<td>N/A(^2)</td>
<td>Monitor AC power cord</td>
</tr>
<tr>
<td>O(^1)</td>
<td>N/A(^2)</td>
<td>USB keyboard with cable</td>
</tr>
<tr>
<td>P(^1)</td>
<td></td>
<td>USB mouse with cable</td>
</tr>
</tbody>
</table>

1. Sun Microsystems provides maintenance sparing for these parts.
2. The comcode for this bundle changes regularly and may not be ordered for maintenance spares, so it is not listed in the table. This bundle includes the processor, peripherals, and other equipment.
Connecting the monitor, keyboard, and mouse

To connect the monitor, keyboard, and mouse to the computer:

1. Attach the monitor video cable to the graphics card. Tighten the thumbscrews to secure the connection. See the following figure.

2. Connect the monitor power cord to an approved AC power outlet.
3. Attach the USB keyboard cable to one of the USB ports.

4. Attach the USB mouse cable to the other USB port.
Connecting the remote console modem

The remote console modem allows personnel at a remote support center to dial in and perform maintenance on the computer. The modem is a U.S. Robotics Sportster 33.6 Faxmodem, a Paradyne Comsphere 3910 modem, or a modem provided locally.

The following figure shows remote console modem connectivity.

To connect the remote console modem:

1. Connect the DB25-to-RJ45 ACU modem adapter (A) to the serial port on the back of the computer.
2. Connect the 10-wire modular cord (B) to the modular end of the ACU modem adapter (A).
3. Connect the other end of the 10-wire modular cord (B) to the modular end of the RJ45-to-DB25 remote console adapter (C).
4. Connect the remote console adapter (C) to the RS-232C port on the modem. The RS-232C port on the Comsphere 3910 is labeled "DTE1."
5. Connect the telephone line to the jack labeled "LINE" on the Sportster modem, or labeled "DIAL" on the Comsphere 3910 modem.
6. Connect the power cable to the modem and plug the cable into a socket.

Do not turn on the power until instructed by provisioning personnel.
Connecting the switch link

Use either of the following two ways to connect the CMS computer to a switch:

● TCP/IP over a dedicated local area network (LAN) segment. A LAN connection is supported for R7 and later switch releases, and is required for CMS R12 and later.

● X.25 protocol over a hard-wired or switched link. This is not supported for CMS R12 and later.

One CMS computer can collect data from several switches. To the CMS computer, each switch represents one ACD. You can have all switches connected using TCP/IP, all switches connected using X.25 protocol (not supported for CMS R12 and later), or some combination of the two protocols.

For detailed information about how to connect and administer the switch link, see Avaya Call Management System Switch Connections, Administration, and Troubleshooting.