



Avaya™ Predictive Dialing System and Avaya™ PG230 Proactive Contact Gateway

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Planning for Installation

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Preventing toll fraud

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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 to/through 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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Preface

This section contains the following topics:

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- [Audience](#) on page 9
- [Related documents](#) on page 9
- [Availability](#) on page 10

Purpose

This guide provides detailed information for planning for the installation of the Avaya™ Predictive Dialing System (PDS) and the Avaya™ PG230 Proactive Contact Gateway.

Audience

This guide is intended primarily for users, system integrators, and information technology personnel who are responsible for planning for, installing, and configuring the Avaya Predictive Dialing System and Avaya Predictive Dialing System and Avaya PG230 Proactive Contact Gateway.

Related documents

The following Avaya PDS documents may also be helpful:

- Avaya Predictive Dialing System User's Guide Volume 1
- Avaya Predictive Dialing System User's Guide Volume 2
- Avaya Predictive Dialing System Safety and Regulatory Information
- Avaya PG230 Proactive Contact Gateway Safety and Regulatory Information

Availability

Copies of this document are available from one or both of the following sources:

Note:

Although there is no charge to download documents through the Avaya Web site, documents ordered from the Avaya Publications Center must be purchased.

- The Avaya online support Web site, <http://support.avaya.com>
- The Avaya Publications Center, which you can contact by:

Voice:

+1-207-866-6701

+1-800-457-1764 (Toll-free, U.S. and Canada only)

Fax:

+1-207-626-7269

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Attention: Avaya Account Manager

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totalware@gwsmail.com

Chapter 1: Avaya Predictive Dialing System overview

The Avaya Predictive Dialing System (PDS) is designed to increase productivity in both centralized and distributed call centers. The PDS works with your call center's equipment and operations to perform call center tasks. The following list describes the main functions of the PDS:

- Receives customer records from the call center's host computer
- Selects and sorts customer records based on your call center's business goals
- Allows agents to update customer information on an agent screen or on the host, depending on your configuration
- Passes only specific call types to agents
- Adjusts the calling pace to meet your call center's productivity and quality requirements
- Monitors ACD inbound traffic and predicts when to acquire and release ACD agents for outbound calling (PDS with Agent Blending)
- Supports outbound, inbound, and blend jobs
- Generates a variety of reports, including job, agent, system, and administrative
- Uploads updated record information to the host (optional)

This section contains the following topics:

- [PDS cabinet](#) on page 12
- [Digital switch](#) on page 14
- [Maintenance modem](#) on page 18
- [Administrator console](#) on page 19
- [Personal computers](#) on page 20
- [Printers](#) on page 21

PDS cabinet

The PDS cabinet contains the PDS software and hardware that enables the system to connect agents to customers. The system cabinet components also store system, job, and agent statistics.

Components inside the system cabinet include:

- PDS CPU to run the system software
- DDS drive for backing up and restoring the database and files
- Modem and access server for remote technical support of the system

Note:

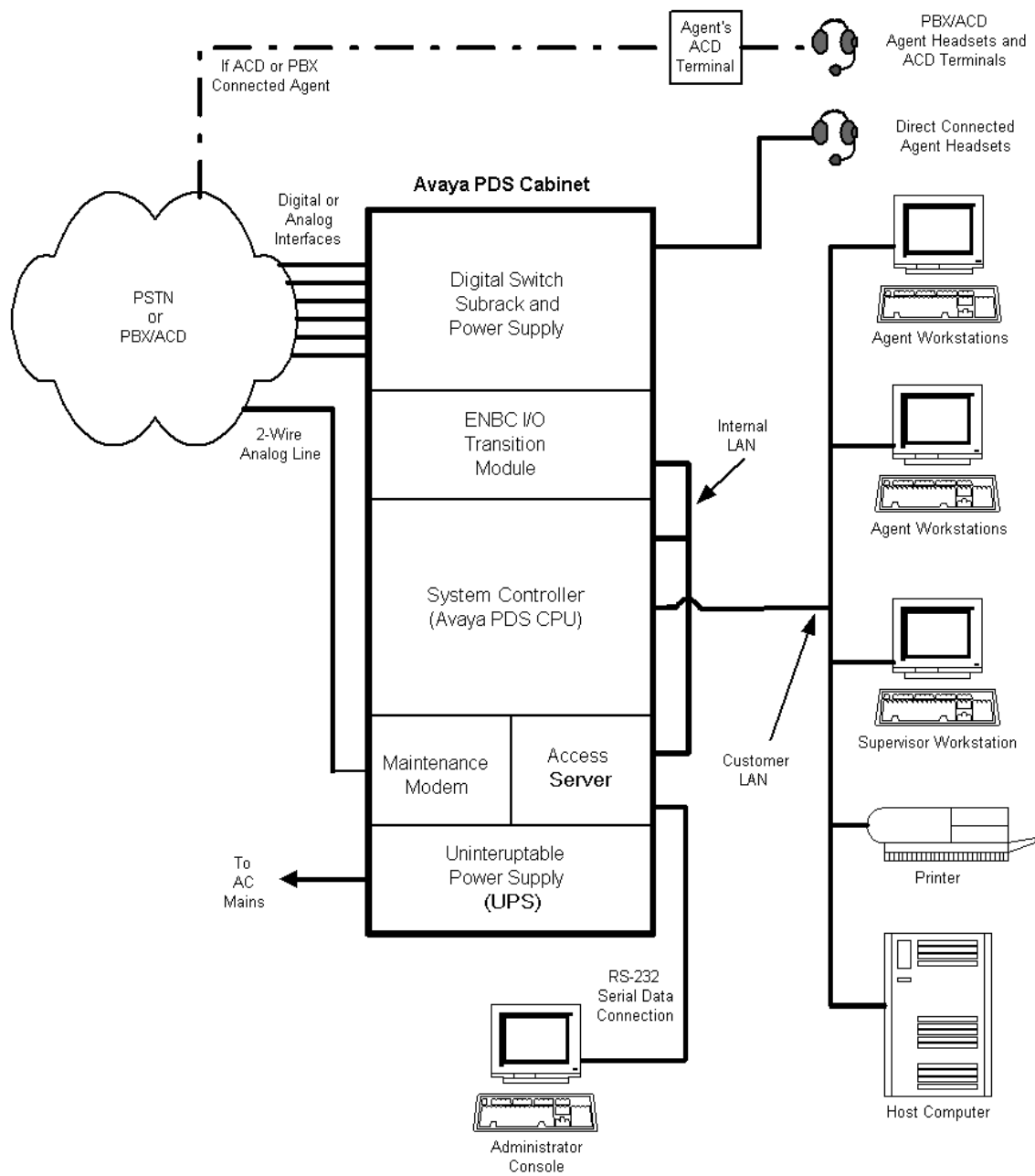
Systems installed in the United States and Canada include a maintenance modem and modem cable. Installations outside the United States and Canada include only a modem cable.

- Uninterruptible Power Supply (UPS) to control power to the cabinet components

Components that connect to the system cabinet include:

- Administrator console for access to the PDS CPU
- Public Switched Telephone Network (PSTN) for placing and receiving calls
- Local Area Network (LAN) for connecting to agent and supervisor workstations
- Agent and supervisor headsets or telephones

The following figure shows a typical PDS cabinet and its connections.



Digital switch

The digital switch places calls, performs call progress analysis, answers calls, processes calls to the PDS, plays messages, and communicates with the system controller (PDS CPU). The digital switch is comprised of two subsystems: the digital switch subrack and the ENBC I/O Transition Module. The digital switch uses an Ethernet connection to communicate with the system controller.

Digital switch subrack

The digital switch subrack, also called the digital switch card file, contains cards that provide the following functions:

- Provides a central processor for the digital switch
- Monitors alarm conditions and provides controls for resetting the digital switch
- Provides interfaces for telephone circuits
- Places, receives, and processes telephone calls
- Plays digitized voice messages
- Switches calls to workstation headsets

All systems have one ENBC and one or two DSP2 cards. The number of LPVC2s depends on your system. The other cards vary from site to site, depending on the number and type of telephone circuits connected to the system.

The following table provides an overview of the function of the most common cards.

Card type	General function	Description
ENBC (Enhanced Network Bus Controller)	Control circuit card	This card controls the operation of the digital switch under the direction of the PDS CPU.
DSP2 Digital Signal Processor)	All DSP functions	EDTG (Enhanced Digital Tone Generator) ECC (Enhanced Conference Card) EDRC (Enhanced DTMF (Dual Tone Multi-Frequency) Receiver Card) ECPA (Enhanced Call Progress Analyzer) DDC (Digital Dialer Card) EMFCR2 (Enhanced MFCR2 (Multi-Frequency Compelled Response R2 signaling) These are now provided by the DSP2 card. Each of the 6 functions is now a separate download to the DSP2 card EDTG2, ECC2, EDRC2, ECPA2, DDC2, EMFCR2-2.
LPVC2 (Large Port Voice Card)	Service circuit card	Plays and records digitized voice messages and ziptones.
EUTC (Enhanced Universal Trunk Card)	Port interface card	Provides an interface to analog ground start or analog loop start telephone trunks. The EUTC card has 16 trunks.
QT1 (Quad T1 card)	Port interface card	Provides interfaces to four digital T1 telephone trunks (non-ISDN).
QE1 (Quad E1 card)	Port interface card	Provides interfaces to four digital E1 telephone trunks (non-ISDN).
QT1-PRI (Quad T1 Primary Rate Interface card)	Port interface card	Provides interfaces to four T1-based Primary Rate Interface (ISDN) telephone trunks.
QE1-PRI (Quad E1 Primary Rate Interface card)	Port interface card	Provides interfaces to four E1-based Primary Rate Interface (ISDN) telephone trunks.
OLIC2 (Operator Line Interface Card)	Port interface card	Provides an interface to 24 direct-connect headsets.

Digital switch buses

The digital switch buses are integrated in the digital switch subrack and controller. The buses control signals and other information within the digital switch.

Digital switch bus name	Description
Ethernet	Carries communication network traffic between the PDS CPU and the digital switch.
SCSI	Connects the ENBC I/O Transition Module to the digital switch subrack. When the call center starts a calling job, the ENBC uses the SCSI bus to download digitized voice messages to the LPVC.
Communication	Carries control signals and data between the ENBC and the cards in the digital switch subrack. When the digital switch is reset, the ENBC uses the communication bus to download application software to cards in the digital switch subrack.
PCM	Carries telephone audio information within the digital switch. The digital switch uses the PCM bus to link the ports on the port interface cards and service circuit cards in the digital switch subrack.

ENBC I/O Transition Module

The ENBC (Enhanced Network Bus Controller) I/O Transition Module provides the following connections to the digital switch:

- Ethernet
- serial RS-232 communication
- SCSI
- external clock for testing

The ENBC I/O Transition Module has the following components:

- hard disk drive
- diskette drive

The hard drive contains the operating system, switch generic software, card download and configuration information used by the digital switch.

PDS CPU

The PDS CPU controls all PDS operations and provides an interface that supervisors and agents use on their workstations. It contains the PDS software that calls customers, connects agents and customers, and stores system, job, and agent statistics.

The PDS CPU contains a DDS tape drive that provides data storage and is used for backing up system software.

Maintenance modem

The PDS uses a high-speed modem to enable remote access to the system for diagnostic and maintenance purposes. The modem connects an analog telephone line to the access server to provide access to the major subsystems.

Systems installed in the United States and Canada include a maintenance modem and modem cable.

All other installations outside the United States and Canada include only a modem cable. You must provide your own maintenance modem.

Administrator console

The administrator console provides access to the PDS CPU and digital switch. It connects directly to the access server inside the system cabinet. This console consists of a monitor and keyboard. The system administrator uses it to perform basic system operations such as backing up system files, shutting down the system, and setting the system's time and date. Do not use the administrator console to run jobs, select records, or similar tasks.

Systems installed in the United States and United Kingdom include the administrator console. For installations outside the United States and United Kingdom, you may provide your own console or purchase one through Avaya.

Personal computers

Personal computers (PCs) can be network-connected or serial-connected (direct-connected). The PDS provides the best service using network connected PCs. The PDS supports connections to either an Ethernet or Token Ring type of network. The PDS uses TCP/IP to move data between itself and the agent workstations. These systems can use Avaya's graphical user interface or one designed by an application developer using Agent API. You are responsible for the purchase, installation and maintenance of PCs.

Supervisor workstation

Supervisor workstations are network-attached PCs. Supervisor workstations require a headset or telephone. System supervisors use these workstations to set up and manage system settings, set up jobs, monitor calling activity, and produce call center reports.

Agent workstation

Each agent workstation consists of a computer and voice connection. During calling jobs, agents use the workstation to talk to customers and update customer records.

Printers

The printer connected to the PDS is used to print status messages, error messages, diagnostic information, and reports on call center operations. You are responsible for the purchase, installation, and maintenance of the printer.

The printer is connected to your call center's LAN, which makes it available to other application software. The printer connects to the PDS CPU by an Ethernet LAN connection.

Chapter 2: Avaya PG230 Proactive Contact Gateway overview

This section describes the Avaya PDS system components that are used in conjunction with the Avaya PG230 Proactive Contact Gateway.

The PDS software is installed on an HP 9000/e3000 server or HP B2600 workstation running HP-UX 11i. The workstation and the Avaya PG230 Proactive Contact Gateway communicate through an Ethernet connection using the built-in lan0 interface on the workstation. A PCI-based Ethernet or Token Ring card in the workstation provides network access for PG230 system users. A remote access server provides serial-based console access to both the workstation and the PG230 for diagnostic and maintenance purposes. An ASCII terminal connected to the remote access server provides local access.

This section includes the following topics:

- [PG230 workstation](#) on page 24
- [Remote access hardware](#) on page 25
- [System console](#) on page 26
- [Ethernet hub](#) on page 27
- [Token Ring network interface](#) on page 28
- [Ethernet and serial connections](#) on page 29
- [Printers](#) on page 33
- [Optional equipment](#) on page 34

PG230 workstation

When the PG230 configuration for the PDS is used, an HP 9000/e3000 server or an HP B2600 workstation is required.

The minimum configuration includes the following:

- a PA-8600 microprocessor with an operating frequency of 500Mhz,
- .5Mb instruction cache and 1.0Mb data cache.
- four memory slots supporting 256Mb, 512Mb and 1GB DIMMS, for a total configuration of up to 4GB.
- Four slots (two 32-bit and two 64-bit) are provided in the PCI bus.

The minimum configuration includes the following:

- 2 GB RAM. (Additional 2 GIG RAM is required for POD Dialer Primary)
- 36 GB Internal Hard Drive Disk.
- At least one PCI-based network interface (Ethernet or Token Ring). For more information, see [Ethernet and serial connections](#) on page 29 or [Token Ring network interface](#) on page 28.

For more information on the HP B2600 workstation, go to:

<http://www.hp.com/workstations/risc/b2600/b2600.pdf>

Remote access hardware

Avaya support services must be able to remotely obtain system console and network access to both the workstation and the PG230. Remote access is usually provided by through a remote access server. The remote access server must have four asynchronous serial ports and one Ethernet port.

Note:

The PG230 does not have an internal modem. You will need to obtain a modem.

The following items are recommended:

Order number	Description
SCS400-11	Lantronix Secure Console Server (with North America power cord)
SCS400-12	Lantronix Secure Console Server (with international power cords)

For details regarding the SCS400 see:

<http://www.lantronix.com/data-center-management/console-servers/scs100-scs200-scs400.html>

System console

Some provision for local system console access to the workstation is required. Generally, this is accomplished through an ASCII terminal connected to the remote access hardware.

The following item is recommended:

Order number	Description
WY-55	WYSE terminal

Ethernet hub

For network interconnection between the workstation's built-in interface, the PG230 and the remote access server, an Ethernet hub that supports 10Mbit half-duplex (three ports minimum) must be installed.

The following item is recommended:

Order number	Description
J4097B	HP Ethernet Switch (8 port, 10/100BaseT)

Token Ring network interface

You must install and configure the required Token Ring network components, but do not exceed the four PCI-card limit in the HP B2600 workstation.

The following item is required:

Order number	Description
A5783A	HP 802.5 Token Rin 4, 16, 100 Mb/s Adapter

Note:

The required Token Ring software is located in the software bundle supplied on the *HP-UX 11i Bootable Archive* CD-ROM but not installed.

Ethernet and serial connections

You must install and configure the required Ethernet network components, but do not exceed the four PCI-card limit in the HP B2600 workstation.

The following item is required:

Order number	Description
B5509BA	HP 100Base-T Single Port LAN Adapter

Note:

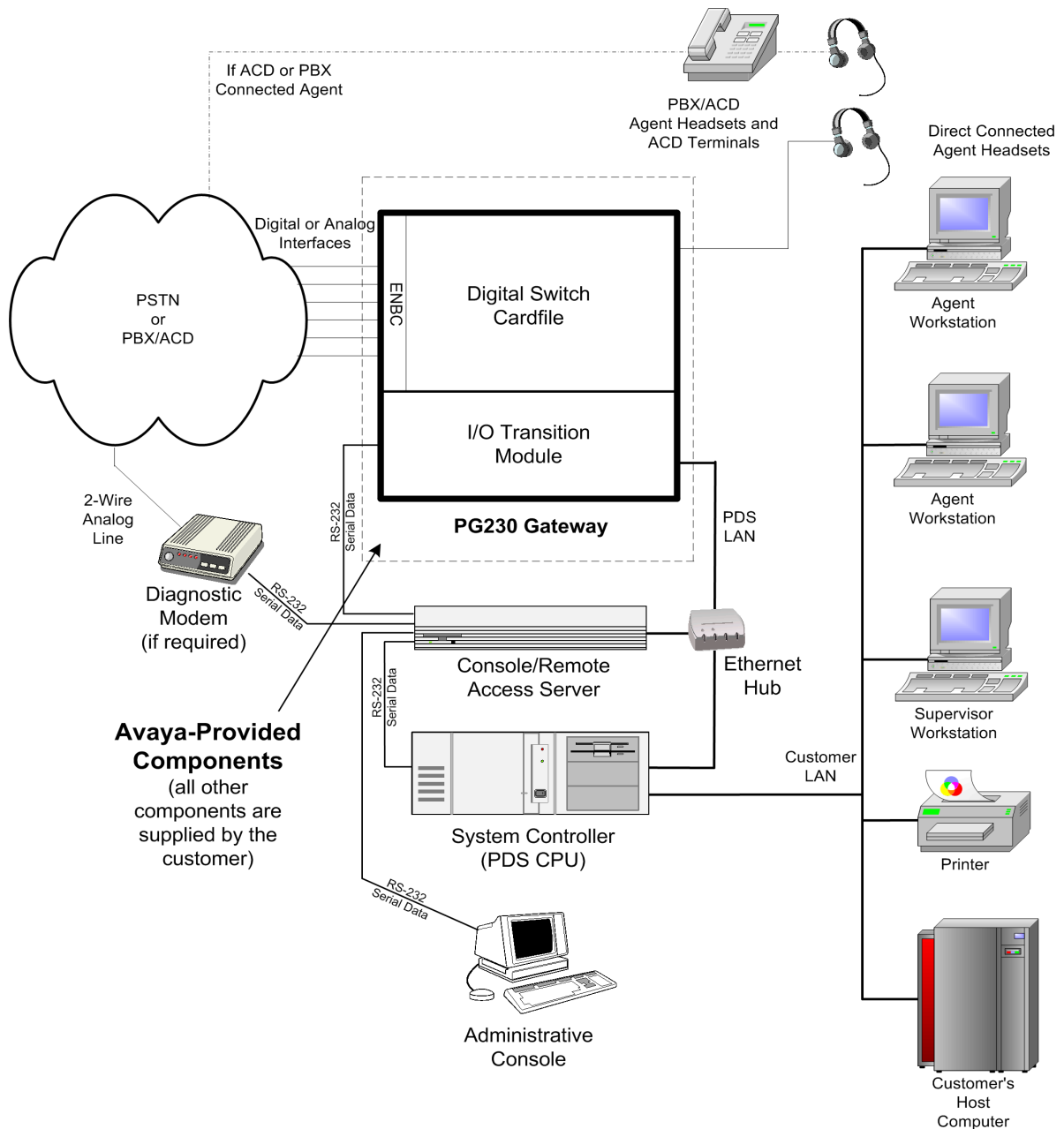
The necessary Ethernet software is automatically enabled within the bundle supplied on the *HP-UX 11i Bootable Archive* CD-ROM.

The following figure shows the Ethernet and serial connections for a PDS system using a PG230.



Important:

No connections are made to the Ethernet hub other than the three connections in the following figure.



Serial cable length restrictions

The components described in the PG230 configuration must be positioned so that no more than 50 feet of serial cables can be used wherever serial cables are specified.

Ethernet cable length restrictions

The three Ethernet segments, workstation-to-hub, PG230-to-hub, and remote access server-to-hub must be as short as is practical.

The following network performance restrictions also apply for all Ethernet segments:

- The average round trip time between the workstation and the PG230 for one-hundred packets of 1,500-bytes each must not be greater than 5 ms. This network performance metric must be met or exceeded for all Ethernet segments.
- The network performance measurements must be made using the ping (1 M) utility on the workstation when:
 - No jobs or call selections are running
 - Only the root user is logged in to the workstation

Example ping command syntax:

```
ping switch1 1500 100
```

Agent workstations

Network Agent workstation must be provided to the specifications listed below. This is for the Avaya Agent, VLterm, or Agent API solution.

PC hardware requirements

The minimum PC hardware requirements are as follows:

- Pentium III 450 MHz processor
- 2 GB Hard drive
- 64 MB RAM at minimum

PC software requirements

One of the following Windows operating systems must be installed:

- Windows 95, 98 SE, NT 4.0 SPK 4-6
- Windows 2000 SPK 2

Printers

Avaya requires at least one network printer connected to the PG230 to be used for printing PDS reports.

The printer requirements are as follows:

- A laser printer that has either an internal or external HP Jet Direct Card. (This printer must be able to communicate PCL 4, which is HP's Printer Control Language version 4.0.).
- The printer must have network access via TCP/IP. Provide either the static IP address or DNS name to be entered into the PDS hosts table.

Optional equipment

This section describes the requirements for equipment that you might want to install to enhance the PG230.

Uninterruptible power supply

Avaya strongly recommends that all equipment be sufficiently protected by an uninterruptible power supply (UPS). Avaya recommends that you monitor the UPS through its serial cable interface by using optional software that you can configure on the workstation. If you do this, you can automatically shut down the system in the event of a power interruption.

The following item is recommended:

Order number	Description
SUA2200	American Power Conversion (APC)

For more information refer to:

http://www.apc.com/resource/include/techspec_index.cfm?base_sku=SUA2200RM2U

Disk mirroring

You can set up a RAID Level 1, disk mirrored, system by using optional software and an additional internal disk drive. When disk mirroring is functional, all of the logical volumes on the existing root disk will be mirrored to the new disk and the new disk will be fully functional as a bootable device if necessary.

Required hardware and software:

- Hard disk drive to match the existing root disk. The disk drive model must be determined on a case-by-case basis.
- Disk mirroring software delivered on a CD-ROM

Chapter 3: Environmental and hardware specifications

In preparing for your PDS or PG230, you may find it helpful to develop a facilities floor plan that includes the location of each component. Use the specification sheets in this chapter to determine the requirements of each component and to identify heating, ventilation, and air conditioning requirements.

In addition to the requirements in this guide, you are responsible for complying with the requirements in the *Safety and Regulatory Information* guides and all local regulations that govern the installation of your PDS or PG230.



CAUTION:

Failure to comply with these requirements could lead to severe damage of your equipment

This sections contains the following topics:

- [PDS environmental and hardware specifications](#) on page 36
- [PG230 environmental and hardware specifications](#) on page 41

PDS environmental and hardware specifications

The environment for the PDS can influence system performance and reliability. Temperature, humidity, and other environmental factors must be controlled to meet the PDS operating requirements.

PDS environmental specifications

Electrical

Connect the PDS cabinet ground to the building ground. Use a minimum of 10 AWG (2.60 mm) ground conductor (green insulated wire with at least 1 yellow stripe).

Air conditioning

A qualified air conditioning engineer must determine the exact requirements. Use the following guidelines to estimate air conditioning requirements.

Air conditioning must handle the heat produced by the components in the system cabinet, personnel in the room, and lighting. You must also consider the heat that comes through walls, windows, floors, and ceilings. Because the system requires constant power (even if the system is idle), it continuously generates heat. Air conditioning requirements must be met at all times.

We recommend a stable ambient operating temperature of approximately 72 degrees Fahrenheit (22 degrees Celsius). A temperature in the range of 45 degrees to 80 degrees Fahrenheit (7 degrees to 26 degrees Celsius) is acceptable. The temperature variation in the equipment room should not exceed ± 5 degrees Fahrenheit (± 3 degrees Celsius).

Heat dissipation from a system is estimated in BTUs per hour. Estimate the amount of air conditioning required based on the heat generated in the equipment area and square feet of occupied floor space. Remember, each person in the occupied area generates heat. Consult your HVAC representative for specific air conditioning, heating, and ventilation requirements.

For all pieces of hardware listed within this chapter, please use the following guidelines.

- 45° to 80° F (7° to 26° C)
- 15% to 80% relative humidity
- Protect from heat, cold, and water exposure
- Avoid direct sunlight

Other environmental factors

In addition to temperature, the following environmental factors must be controlled in the equipment areas:

Environmental factors	Descriptions
humidity	Low humidity can increase static electricity buildup, while high humidity can affect the performance of disks and printers. Maintain a relative humidity between 15 percent and 80 percent, noncondensing.
static electricity	Avaya recommends placing the system cabinet on an antistatic electrical grade matting and using an antistatic wrist strap when you work on PDS equipment.
lighting	Avoid direct sunlight.
ventilation	Do not block the vents on the system cabinet.

Grounding and power requirements

In addition to information in this guide, the PDS requirements in the *Avaya Regulatory & Safety* guide must also be met.



WARNING:

If you fail to follow grounding procedures, the installation can be unsafe for personnel, unprotected from lighting or power transients, subject to service interruptions, and/or degraded performance. We strongly recommend that power supply conductors be dedicated and uninterrupted from the service panel to the system cabinet.

PDS system cabinet specifications

The system cabinet contains the system software and hardware required to call clients, handle incoming client calls, connect agents and clients, and maintain client information.

Dimensions

The dimensions for the system cabinet are:

4.7 ft x 2.16 ft x 3.33 ft (1.42 m x 0.66 m x 1.04 m)

Placement

Allow sufficient space to open and close the front and rear doors. Each door is the full width of the cabinet and is hinged on the left side. The doors require a 24-inch arc from the left side of the front and rear of the cabinet.

- Minimum of 3 ft (0.92 m) of work space at the front and back of the cabinet
- Minimum 2.34 ft (0.75 m) of ventilation space on sides
- Minimum 5 ft (1.5 m) from air conditioning or heating ducts
- Raised floors must support 550 pounds (250 kilograms) for each system cabinet

Clearance

Access and entry ways (including doors, hallways, stairs, elevators, and lifts) must be at least 5.5 ft x 3.16 ft x 4 ft (1.69 m x 1 m x 1.23 m) to accommodate the crated system cabinet.

We recommend moving the system cabinet in the shipping crate.

Note:

After the initial installation, use the shipping crate any time you need to move your system. Prior to moving your system after the initial installation, you must first contact your Customer Support Engineer or risk non-compliance.

IP address requirements

Provide the required IP addresses for the PDS.

Electrical connections

The system cabinet is equipped with one power cord and a standard three-prong grounded electrical plug. Use one separate, dedicated circuit with the appropriate receptacle for the system cabinet.

Use the following guidelines for electrical connections.

Power Input	Cord	Plug	Receptacle
105 to 125 V at 60 Hz	16 A, 6 ft provided	NEMA 5-20P, provided	NEMA 5-20R
85 to 110 V at 50 Hz	20 A, 5 ft provided	NEMA 15-30P, provided	NEMA L5-30R
210 to 250 V at 50 Hz	8 A	locking, not supplied	IEC320/C-20

Note:

The circuit must accommodate the appropriate power input requirements. Any change to the supplied electrical connection is your responsibility and must be completed by a qualified electrician where the call center is located. The local authorities must approve all electrical connections and components to ensure that they meet local electrical requirements.

These guidelines also include:

- One earth grounded outlet within 5 ft (1.5 m) of the system cabinet
- One dedicated, separate circuit breaker

Power consumption

The PDS uses approximately 1500 watts.

Grounding

Install wire to connect the system cabinet to the building earth ground. Use minimum 10 AWG (2.60 mm) ground conductor (green insulated wire with one or more yellow stripes).

In addition to information in this guide, you must comply with the requirements in Avaya *Regulatory & Safety Information* guide.

In the United States: Comply with grounding connections listed in Article 250 of the National Electric Code, NFPA70. Outside the United States: Comply with applicable national electrical codes.

Uninterruptible Power Supply (UPS)

The system cabinet contains one UPS that protects against power supply fluctuations and outages. The UPS provides approximately seven minutes of power reserve. This should allow a system administrator time to shut down the system.

Floor mounting

An optional floor mounting kit is available. Each kit includes detailed installation instructions and the parts required to secure the system cabinet to a concrete floor. Please contact your Avaya vendor for details.

Telephony

The telephony specifications are included in the section [Ethernet and serial connections](#) on page 29.

Environmental and hardware specifications

Heat output

The PDS cabinet may produce up to 5000 BTUs per hour.

Security

We recommend placing the system cabinet in a secure location with controlled access.

PG230 environmental and hardware specifications

PG230 environmental specifications

The environment for the PG230 can influence system performance and reliability. Temperature, humidity, and other environmental factors must be controlled to meet the PDS operating requirements.

Electrical

Connect the PG230 cabinet ground to the building ground. Use a minimum of 10 AWG (2.60 mm) ground conductor (green insulated wire with at least 1 yellow stripe).

Air conditioning

A qualified air conditioning engineer must determine the exact requirements. Use the following guidelines to estimate air conditioning requirements.

Air conditioning must handle the heat produced by the components in the system cabinet, personnel in the room, and lighting. You must also consider the heat that comes through walls, windows, floors, and ceilings. Because the system requires constant power (even if the system is idle), it continuously generates heat. Air conditioning requirements must be met at all times.

We recommend a stable ambient operating temperature of approximately 72 degrees Fahrenheit (22 degrees Celsius). A temperature in the range of 45 degrees to 80 degrees Fahrenheit (7 degrees to 26 degrees Celsius) is acceptable. The temperature variation in the equipment room should not exceed ± 5 degrees Fahrenheit (± 3 degrees Celsius).

Heat dissipation from a system is estimated in BTUs per hour. Estimate the amount of air conditioning required based on the heat generated in the equipment area and square feet of occupied floor space. Remember, each person in the occupied area generates heat. Consult your HVAC representative for specific air conditioning, heating, and ventilation requirements.

For all pieces of hardware listed within this chapter, please use the following guidelines.

- 45° to 80° F (7° to 26° C)
- 15% to 80% relative humidity
- Protect from heat, cold, and water exposure
- Avoid direct sunlight

Other environmental factors

In addition to temperature, the following environmental factors must be controlled in the equipment areas:

Environmental factors	Descriptions
humidity	Low humidity can increase static electricity buildup, while high humidity can affect the performance of disks and printers. Maintain a relative humidity between 15 percent and 80 percent, noncondensing.
static electricity	Avaya recommends placing the system cabinet on an antistatic electrical grade matting and using an antistatic wrist strap when you work on PDS equipment.
lighting	Avoid direct sunlight.
ventilation	Do not block the vents on the system cabinet.

Grounding and power requirements

In addition to information in this guide, the PG230 requirements in the *Avaya Regulatory & Safety* guide must also be met.



WARNING:

If you fail to follow grounding procedures, the installation can be unsafe for personnel, unprotected from lighting or power transients, subject to service interruptions, and/or degraded performance. We strongly recommend that power supply conductors be dedicated and uninterrupted from the service panel to the system cabinet.

PG230 system cabinet specifications

The PG230 system cabinet contains the system software and hardware required to call clients, handle incoming client calls, connect agents and clients, and maintain client information.

Dimensions

The dimensions for the system cabinet are:

33.75" x 23" x 26"

Placement

Allow sufficient space to open and close the front and rear doors. Each door is the full width of the cabinet and is hinged on the left side. The doors require a 24-inch arc from the left side of the front and rear of the cabinet.

- Minimum of 3 ft (0.92 m) of work space at the front and back of the cabinet
- Minimum 2.34 ft (0.75 m) of ventilation space on sides
- Minimum 5 ft (1.5 m) from air conditioning or heating ducts
- Raised floors must support 300 pounds for each system cabinet

Clearance

Access and entry ways (including doors, hallways, stairs, elevators, and lifts) must be at least 43" x 36" x 32" to accommodate the crated system cabinet.

We recommend moving the system cabinet in the shipping crate.

Note:

After the initial installation, use the shipping crate any time you need to move your system. Prior to moving your system after the initial installation, you must first contact your Customer Support Engineer or risk non-compliance.

IP address requirements

Provide the required IP addresses for the PG230.

Electrical connections

The system cabinet is equipped with a IEC 320/C14 electrical connector.

Use one separate, dedicated circuit with the appropriate receptacle for the PG230 cabinet.

Use the following guidelines for electrical connections.

Power Input	Cord	Plug	Receptacle
105 to 125 V at 60 Hz	10 A, 8 ft provided	NEMA 5-15P, provided	NEMA 5-15R
85 to 110 V at 50 Hz	10 A, 8ft provided	NEMA 5-15P, provided	NEMA 5-15R
210 to 250 V at 50 Hz	8 A not provided	locking, not supplied	IEC320/C-13

Environmental and hardware specifications

Note:

The circuit must accommodate the appropriate power input requirements. Any change to the supplied electrical connection is your responsibility and must be completed by a qualified electrician where the call center is located. The local authorities must approve all electrical connections and components to ensure that they meet local electrical requirements.

These guidelines also include:

- One earth grounded outlet within 5 ft (1.5 m) of the system cabinet
- One dedicated, separate circuit breaker

Power consumption

The PG230 uses approximately 800 watts.

Grounding

Install wire to connect the system cabinet to the building earth ground. Use minimum 10 AWG (2.60 mm) ground conductor (green insulated wire with one or more yellow stripes).

In addition to information in this guide, you must comply with the requirements in *Avaya Regulatory & Safety Information* guide.

In the United States: Comply with grounding connections listed in Article 250 of the National Electric Code, NFPA70. Outside the United States: Comply with applicable national electrical codes.

Heat output

The PDS cabinet may produce up to 3000 BTUs per hour.

Security

We recommend placing the system cabinet in a secure location with controlled access.

The environmental requirements for the HP B2600 workstation are listed in the following table. Excluding the PG230, all of the components described are subject to these requirements.

Environmental specifications	Operating requirements	Non-operating requirements
Altitude	0 to 3000 meters (0 to 10,000 feet)	0 to 4500 meters (0 to 15,000 feet)

Environmental specifications	Operating requirements	Non-operating requirements
Temperature	+5 to +35 degrees Celsius	-40 to +70 degrees Celsius
Humidity	15% to 80% non-condensing	-

Enclosure requirements

There is no requirement for an enclosure. You can house some or all of the equipment described in this section in an enclosure, but you must comply with the cable length and environmental requirements.

Administrator console specifications

The administrator console consists of a monitor and keyboard. The administrator console displays system status messages and provides direct access to the PDS operating system.

Systems installed in the United States and United Kingdom include the administrator console. For installations outside the United States and United Kingdom, you, your VAR, or your partner provides the console or purchases it through Avaya.

Your Avaya representative will install the administrator console at your site.

Dimensions

The dimensions included are for the monitor and the keyboard.

Monitor - 14 in. x 13 in. x 13 in. (35 cm x 33cm x 33 cm)

Keyboard - 2 in. x 19 in. x 8 in. (5 cm x 49 cm x 20 cm)

Placement

The following is recommended:

- a minimum 2 ft x 3 ft (0.6 m x 0.9 m) table or computer stand space.
- a maximum of 10 ft (3 m) from the system cabinet.
- a minimum weight of 19.5 (9 kilograms).

Table placement

Many companies place the administrator console and the printer on the same table. If you choose to do this, use the following recommended guidelines.

- Table: 4 ft x 2 ft (1.3 m x 0.6 m)
- Weight: the table must support 50 pounds (18.65 kilograms)
- Distance: the table must not be more than 8 ft (2.66 m) from the system cabinet.

Electrical

The console power cord plugs directly into the system cabinet UPS.

Data connectivity

The console connects directly to the system cabinet through an RS-232 serial bus connection.

Avaya supplies a 20 foot (6.1 meters) serial cable. Ten feet (3 meters) of this cable is for use inside the system cabinet.

Security

The administrator username and password are required.

Chapter 4: PDS and PG230 telephony

To prepare your site, work with your telephone company representative to install the correct telephone circuits and equipment.

This section contains the following topics:

- [Terminology](#) on page 50
- [General information](#) on page 51
- [T1 circuits](#) on page 54
- [T1 connection specifications](#) on page 57
- [E1 circuits](#) on page 61
- [E1 connection specifications](#) on page 65
- [Supported telephone circuits and connector pinouts](#) on page 69
- [Analog connection specifications](#) on page 70
- [Analog direct-connect headset connection specifications](#) on page 75

Terminology

Telephony terminology may vary from country to country. Following is a list of common terms, abbreviations, and definitions.

Automatic Call Distributor (ACD) - A specialized phone system used for handling incoming calls. An ACD performs the following:

- Recognizes and answers incoming calls
- Handles the calls based on your instructions
- Plays a message to callers
- Holds a call in a wait queue until the agent is available

Central Office (CO) - A telephone company facility where subscribers' lines are joined to switching equipment for connecting other subscribers to each other, locally and long distance. Also referred to as public exchange or telephone exchange.

Centrex - A business telephone service offered by a local telephone company from a local central office. Centrex is a single line telephone service delivered to individual desks with PBX-like features that often include intercom, call forwarding, call transfer, toll restriction, least cost routing, and call hold.

Companies lease Centrex instead of buying or leasing a PBX, key system, or ACD.

Computer Telephony Integration (CTI) - A term for connecting a computer to a telephone switch and having the computer issue the switch commands to move calls around.

Local Access and Transport Area (LATA) - One of 161 local geographical areas in the US within which a local telephone company may offer telecommunications services. Some telephone companies are prohibited from offering intra-LATA calls. The rules vary by state.

Interexchange Carrier (IXC) - A telephone company that is allowed to provide long-distance telephone service between LATAs but not within any one LATA.

Private Branch Exchange (PBX) - A private telephone switching system normally used within a building or campus environment. It directs calls between building residents and allows access to the public telephone network. Also referred to as PABX (Private Automatic Branch Exchange.)

General information

General information is required before telephony specifications can be met. Discuss the following areas with your Avaya representative.

Telephone circuits

The PDS and PG230 support both digital and analog circuits to place and receive calls. During the sales process, you and your Avaya vendor determined the number of telephone circuits required for your PDS configuration.

Your telephone company representative can help you order and install telephone network cables and equipment. If you are using a PBX, work closely with your PBX representative to purchase and install the appropriate PBX cables and equipment.

You can connect telephone and agent voice circuits to a central office, Interexchange Carrier, PBX or other switch, or Centrex equipment.

If your circuits go through a local central office and you want telephone transfer or conference features, we recommend that you order Centrex service to accommodate hook flash capability.

Distribution panel

Install a distribution panel at each PDS site. Locate the panel within 150 feet (50 m) of the PDS.

You will use this panel to install telephone communication equipment and telephone cables. The panel can then serve as a demarcation point that allows you, your Avaya vendor, and other vendors to test telephone equipment.

Agent voice circuits

The circuit types available for agent voice connections depend on the connection type. There are two connection types as follows.

Direct connect agents

Direct connect agents connect to the PDS through a proprietary 4-wire analog card. The agents reside locally on the PDS and are permanently connected to the system.

Dialback or dial-in agents

If your PDS uses dialback or dial-in agent voice connections, the PDS uses an agent port identification number or extension number to establish a relationship between an PDS agent workstation and a telephone. You define the identification number or extension numbers during the software planning process.

When a dialback agent logs into the PDS, the system prompts the agent to type an identification number or extension number in the login window. The system matches the number against your list of valid identification numbers or extension numbers. It then calls the agent at that number to complete the login.

When a dial-in agent logs in to the PDS, the telephone network routes the call to the first available headset port coming into the system. The digital switch answers this call and the agent hears a dial tone. The agent enters a unique key code on the telephone keypad and then logs into the workstation. The agent is again prompted for the key code. When the system matches the headset and data session, the agent hears a welcome message on the headset.

Transfer trunks

Transfer trunks are dedicated telephone circuits that allow agents to transfer calls. The trunks are installed between the PDS and the customer's PBX or CO.

When hook flash is not available, use E&M or Ground Start circuits for T1 and Ground Start circuits for analog transfer trunks from the PDS to a telephony switch or the central office. Transfer trunks must support disconnect supervision.

For E1 transfer trunks, use ISDN (DPNSS or Q.SIG) or non ISDN (E1 CAS) circuits to connect the PDS to a switch. Depending on your call center requirements, designate 1 to 30 channels within the E1 span as transfer trunks.

Hunt group

A hunt group is an organized group of inbound telephone circuits. When the central office or PBX finds the first circuit busy, it hunts for the next available circuit.

For example, a company has two 800 numbers (main access numbers) associated with one inbound T1 trunk. When a customer calls one 800 number, the central office hunts for an available circuit among channels 1 through 10. When a customer calls the other 800 number, the central office hunts for an available circuit among channels 11 through 20.

If your PDS will use Intelligent Call Blending, arrange with your telephone company or PBX contact to set up your inbound trunks as one or more hunt groups. If the PDS will run multiple inbound jobs for different campaigns at the same time, using different main access telephone numbers, define a hunt group for each of these telephone numbers.

During the setup process, determine the following information and provide it to your project manager:

- The total number of inbound trunks coming into your call center
- The number of inbound circuits in each hunt group set up by your telephone company or PBX contact

Note:

Request a cyclic hunt type that spreads inbound calls evenly over inbound circuits. Round Robin and Least Used are typical cyclic hunt types.

ANI and DNIS

The PDS supports Automatic Number Identification (ANI) and Dialed Number Identification Service (DNIS). ANI information shows the inbound caller's telephone number. DNIS information shows the number the inbound caller dialed.

ANI and DNIS numbers can appear on an agent's screen and be stored in the customer record.

To use ANI and DNIS with your PDS, your installation requires the following:

- ANI and DNIS information available from your carrier.
- If you have a switch, equip and configure it to collect ANI and DNIS information.
- The PDS requires that ANI and DNIS fields contain delimiters to mark the end of the fields. The symbols # and * are typical delimiters.

The PDS also supports sending ANI through Caller ID. To set up a Caller ID number, use the character-based interface (not available in Campaign Director) to set up a job; enter the Caller ID number as an outbound job parameter. The PDS sends the Caller ID (ANI) when the system dials the outbound number.

Note:

If you add Caller ID, your outbound phone line must be reconfigured by the CO to recognize and use Caller ID digits. This typically requires the outbound lines to be ISDN or Feature Group D lines. Contact your telephone company for more information.

T1 circuits

This section discusses the supported telephone circuit, Channel Service Unit (CSU), and ISDN PRI. The specification sheet in this section contains additional information to help you complete the T1 and network headset connections.

Telephone circuits

The available circuit types depend on the destination: local central office, IXC, PBX or other switch, or Centrex service.

When planning your telephone circuits, consider the following:

- If your circuits go through a local central office and you want telephone transfer or conference features, we recommend that you order Centrex service to accommodate hook flash capability.
- If your headsets are network-attached, use E&M signaling for T1 trunks from the PDS to the switch. This provides the PDS with answer and disconnect supervision.

The following table summarizes the T1 signaling methods that the PDS supports. For detailed information, contact your Avaya representative.

Signaling type	Features
Loop Start Foreign Exchange Station (FXS)	Emulates a 2500 telephone. Accesses switch or Centrex features (transfer, conference) through hook flash signaling. Answer and disconnect supervision are not available in most cases.
Loop Start Foreign Exchange Office (FXO)	Emulates a central office or PBX that supports a 2500 telephone.
Ground Start FXS	Provides disconnect supervision.
Ground Start FXO	Provides remote party disconnect supervision.
E&M	Provides answer and disconnect supervision. Supports automatic or wink start. Provides access to the transfer and conference features of the PDS digital switch.
ISDN PRI	Provides fully featured ISDN service 23 B+D and supports NFAS operation.

The following table shows how you can use each T1 signaling type for outbound and inbound calling.

Signaling type	PBX station	PBX trunk	CO station	Centrex station	CO trunk	IXC trunk
Loop Start FXS/FXO	X		X	X		
Ground Start FXS/FXO			X	X	X	X
E&M		X		X	X	X
E&M with 500 ms hookflash				X		
ISDN PRI without NFAS		X		X	X	X
ISDN PRI with NFAS		X		X	X	X

Channel Service Units (CSU)

The CSU connects the PDS to a T1 trunk. The T1 may originate at a central office or switch, such as a PBX.

The CSU performs the following functions:

- Regenerate the digital (T1) signal
- Provide loopback testing capabilities and test jack points for T1 test equipment
- Perform line conditioning and equalization functions
- Respond to loopback commands from the telephone network

A CSU is required for any T1 circuit connecting the PDS to a central office. The CSU transforms long haul (DS-1) signaling on the central office side to short haul (DSX-1) signaling on the PDS side.

A CSU is recommended for any T1 circuit connecting to a private network or PBX.

ISDN PRI for T1 circuits

The PDS also supports ISDN PRI T1 circuits with optional Non-Facility Associated Signaling (NFAS - this feature available for installations in the United States and Canada depending on your carrier). In inbound environments using ANI and DNIS, your carrier may require T1 connections that provide ISDN PRI to make ANI and DNIS information available.

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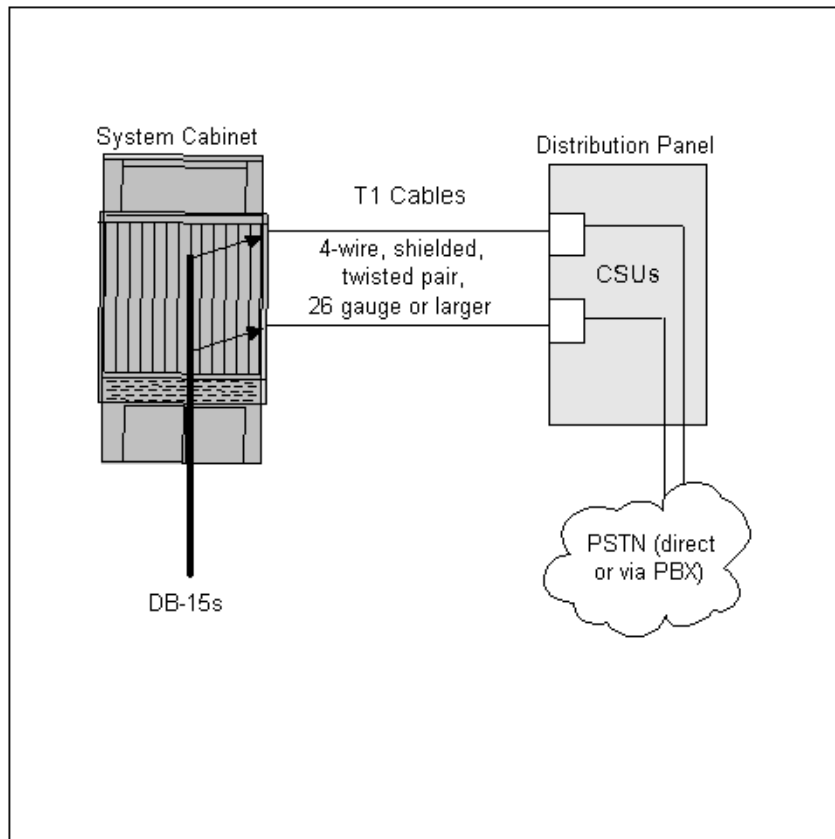
In an NFAS environment, configure T1 circuits without D channels (24 B circuits) for 64 Clear Channel Signaling (CCS). Set the T1 circuits for the following:

- Extended Superframe Format (ESF)
- Binary 8 Zero Substitution (B8ZS)
- No robbed bit signaling
- A maximum of 192 channels. For more than 192 channels, split the outbound lines into two NFAS groups

T1 connection specifications

The PDS can use T1 circuits to place outbound calls or receive inbound calls from customers. Access to a headset connected to a PBX or ACD can be made over a T1 connection between the PDS and the PBX or ACD.

T1 cables connect the PDS to the central office, PBX, or ACD through your distribution panel and telephone network terminator.



Cable requirements

Cable is a 4-wire (minimum), shielded, twisted pair, 26-gauge (0.404 mm) or larger, Teflon or PVC coated (data grade).

Attach the shield of the T1 cables to the shell of the straight, metallized DB-15 connector and to ground at the CSU end.

Use one T1 cable for every 24 telephone channels (23 channels is ISDN PRI).

Leave 10 feet (3 m) of slack on each cable terminating at the PDS.

Connectors

Using the following table, terminate each cable with a straight, metallized DB-15P male connector using the DB-15 Pinouts pin assignments.

Pin #	Signal
1	PDS to network; transmit tip
9	PDS to network; transmit ring
3	Network to PDS; receive tip
11	Network to PDS; receive ring
2, 4-8, 10, 12-15	PDS does not use

Note:

Use the 8-pin RJ-45 modular jack only for local diagnostic testing of the interface. Do not use this modular jack to connect to the CSU, PBX, or network. Use of this connector results in non-conformance to our EMC test results (CISPR 22) and violates the EMC Directive in the European Union.

Network equipment

Your T1 circuits may connect to either a central office (Centrex, LXC, IXC) or to a switch (such as a PBX, PABX or CBX).

Central Service Unit (CSU)

A CSU is required for any T1 circuit connecting the PDS to a central office and is recommended for any T1 circuit connecting to a private network or PBX.

Each CSU has two interfaces. The DS-1 interface connects to the T1 circuit from the central office or switch. The DSX-1 interface connects to the PDS. Connect cables from the PDS to the DSX-1 interface.

Equalize each CSU for the distance to the PDS. You generally do this through a configuration menu or by setting dip switches on the CSU. Equalization keeps the signal that the CSU passes to the PDS from being too strong or too weak.

Consult your telephone company representative or switch vendor for information on cabling from the distribution panel to a central office or ACD.

The following table lists the maximum distance between the PDS switch and CSU or customer switch.

Distance	Cable gauge
380 ft (116 m)	26 (0.404 mm)
520 ft (158 m)	24 (0.511 mm)
655 ft (220 m)	22 (0.643 mm)

If required, terminate each T1 cable from the PDS at a CSU on the distribution panel. Install the CSUs at the distribution panel using type-66 punchdown blocks.

If your site requires other switched telephone network equipment, such as a DS-3 concentrator or smart jacks, you can also connect to these devices through the panel.

Connect the T1 cables to each CSU with the connector type specified by the CSU manufacturer.

Cable identification

Clearly label each T1 cable. During installation, the installer connects the DB-15P male connector to the PDS.

- Label outbound T1 cables as “outbound”
- Label inbound T1 cables as “inbound”
- Label agent voice T1 cables with the voice connection type

Labeling example

At the DB-15P male connector for the T1 circuit connecting dialback agent voice connections to the PDS ports 01 through 24:

```
01-24-AGvoice/dialback
```

At the DB-15P male connector for the T1 carrying agent headsets 01 through 24:

```
AgentHeadsets 01-24
```



Tip:

If you are connecting to a PBX:

- The PDS transmit-pairs connect to the PBX receive-pairs.

PDS and PG230 telephony

- The PDS receive-pairs connect to PBX transmit-pairs. (Some CSU models switch transmit and receive pairs internally.)
- Set the configuration or dip switches on each CSU to reflect the correct distance to the PDS. Distance cannot exceed 655 ft (220 m).
- Connect each cable from the PDS to each CSU DSX-1 interface.
- If you are not using a CSU for your T1 circuits, consult with your switch vendor regarding connectors or equipment at the distribution panel.

E1 circuits

This section discusses the supported telephone circuits, Network Termination Points (NTP), and ISDN PRI circuits for E1 technology. The specification sheet in this section contains additional information to help you complete the E1 and network headset connections.

Telephone circuits

You can connect E1 telephone circuits to a local telephone office, other common carriers, PBX, ACD, or other switch.

The E1 Signaling table below summarizes the E1 signaling methods that the PDS supports. For detailed information, contact your Avaya project manager.

E1 signaling type	Features
CAS-DTMF	Channel Associated Signaling (CAS) with Dual Tone Multi-Frequency (DTMF) signaling. Provides simple tone signaling over the audio path for station-like interface applications. This interface mimics standard telephone operation.
CAS-MFCR2	Channel Associated Signaling (CAS) with Multi-Frequency, Compelled R2 signalling (MFCR2). Provides a more complex audio tone signaling method, using R2 tones, for interfacing to the PSTN and PBX.
ISDN-DASS2 (United Kingdom only)	Digital Access Signaling System2 (DASS2). Provides direct Primary Rate ISDN access to the PSTN with simple call setup facilities supported.
ISDN-DPNSS	Digital Private Network Signaling System (DPNSS). Provides private Primary Rate ISDN connectivity between PBXs with simple call setup facilities supported.
ISDN-TBR4	ISDN-TBR4 is a common name for Euro-ISDN and is a modern ISDN interface that complies with the Q.931 specification. TBR4 provides full-featured Primary Rate ISDN connectivity between the PDS and the PSTN. This signaling type is also known as Euro-ISDN, CTR4, iCTR4, ETS 300, NET5, and other names. Use for connecting to the Public Switched Telephone Network whenever possible.
ISDN-Q.SIG	Provides ISDN connectivity between PBXs using a Q.931 compliant protocol.
ISDN-DPNSS	This signaling type is widely used in many countries. Use DPNSS for E1 tie trunks between PBXs and the PDS. ISDN-DPNSS can also be used on a Private Leased Line in a Centrex-like mode to connect to remote PBXs and other switches.

ISDN-NET

This signaling type is also known as Euro-ISDN, CTR4, iCTR4, ETS 300, NET5, and other names. Use for connecting to the Public Switched Telephone Network whenever possible.

E1 circuit usage

The E1 circuit usage table shows how you can use each E1 signaling type for outbound and inbound calling.

Signaling type	PBX station	PBX trunk	CO station	Centrex station	CO trunk	IXC trunk
CAS-DTMF	X		X	X		
CAS-MFCR2		X	X	X	X	X
ISDN-DASS2 (United Kingdom only)				X	X	X
ISDN-DPNSS	X	X		X		
ISDN-TBR4				X	X	X
ISDN-Q.SIG	X	X				

Network Termination Point

A Network Termination Point (NTP) is a device used to connect the PDS to an E1 circuit that goes off premise or exceeds the allowable length of an E1 cable. The E1 may come in from the telephone office or from a distant switch (such as a remote PBX). NTPs do the following:

- Regenerate the digital (E1) signal
- Provide loopback testing capabilities and test jack points for E1 channel test equipment
- Perform line conditioning and equalization functions
- Respond to loopback commands from the telephone network

The telephone company normally provides the NTP as part of its E1 service. An NTP is required for access between remote switches that use private circuits for long distance connectivity.

The PDS supports two types of E1 circuit interfaces: 75 ohm and 120 ohm. The following table describes how they are used.

	75 ohm	120 ohm
Cabling	Coaxial cable and BNC connectors to connect the E1 cable to the interface card and to the PBX, NTP, or distribution panel	4-wire, shielded, twisted pair wire

	75 ohm	120 ohm
Interface	Typically, the E1 DPNSS and DASS2 circuits use 75 ohm coax interfaces, especially in the UK	E1 ISDN TBR4 (EuroISDN) interface is usually 120 ohm twisted pair
E1-CAS and MFCR2 interfaces are typically 75 ohm; however, 120 ohm is occasionally requested (such as in South Africa and Korea)		

ISDN PRI for E1 circuits

The PDS supports several implementations of ISDN PRI for E1 circuits. These circuits are useful for environments using ANI and DNIS and for connecting switches.

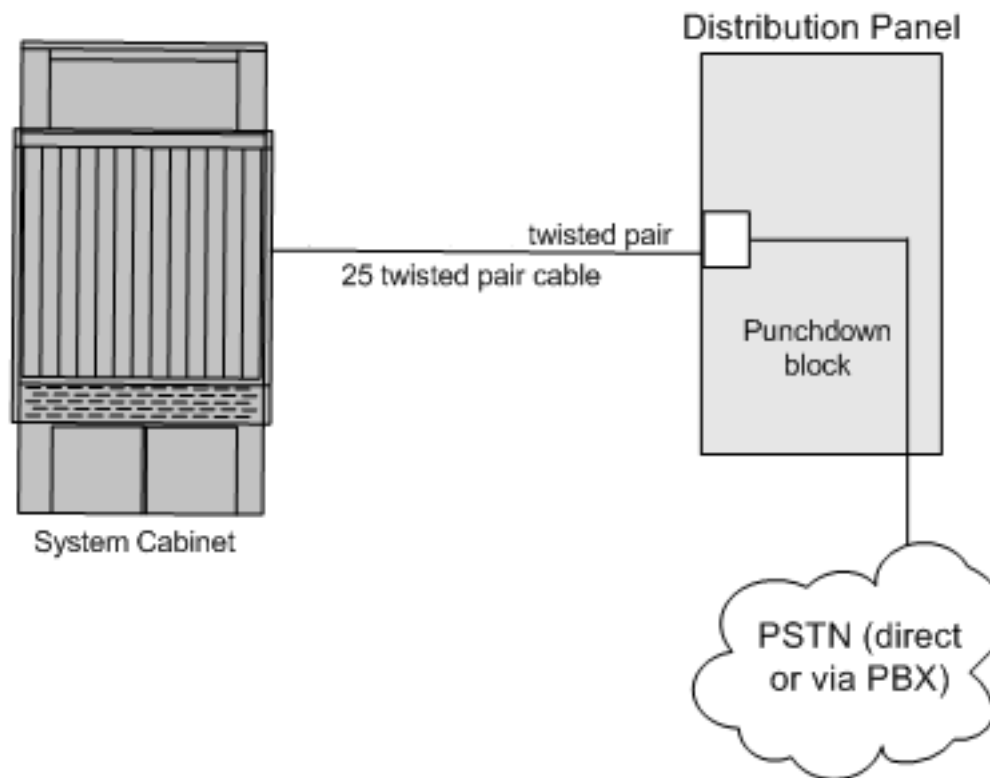
The PDS supports the following PRI ISDN protocols:

- ISDN TBR4 (also referred to as Euro-ISDN, CTR4, iCTR4, ETS 300, NET5, and other names)
- Q.SIG
- DASS2
- DPNSS

E1 connection specifications

The PDS can use E1 circuits to place outbound calls or receive calls from customers. Access to a headset connected to a PBX or ACD can be made over an E1 connection between the PDS and the PBX or ACD.

E1 cables connect the PDS to the central office, PBX, or ACD through your distribution panel and telephone network terminator.



75 ohm interface cable requirements

Cable is 75 ohm coaxial, RG-59/U Type. There are many versions of this cable that have similar characteristics. Some have higher breakdown voltages between the shield and center conductor and some exhibit slightly more or less loss per cable foot. The Belden RG-59/U Type (8241) has 2 dB loss per 100 meters (0.6 dB of loss per 100 feet). This is typical for this type of cable.

Use two coaxial cables for each E1 circuit, a Transmit (Tx) cable and a Receive (Rx) cable. Each cable is independent of the other.

Leave 10 feet (3 m) of slack on each cable terminating at the PDS.

75 ohm interface connectors

The standard PDS E1 cable connector is a BNC-type connector, Belden BNC0041 or equivalent.

120 ohm interface cable requirements

Cable is 4-wire (minimum), shielded, twisted pair, 26-gauge (0.404 mm) or larger, Teflon or PVC coated (data grade).

Use one E1 cable for every E1 circuit.

Leave 10 feet (3 m) of slack on each cable terminating at the PDS.

120 ohm interface connectors

The standard PDS E1 cable connector is a straight, metallized DB 15P male connector using the DB-15 Pinouts pin assignments.

Pin #	Signal
1	PDS to network; transmit tip
9	PDS to network; transmit ring
3	Network to PDS; receive tip
11	Network to PDS; receive ring
2, 4-8, 10, 12-15	PDS does not use

Note:

Use the 8-pin RJ-45 modular jack only for local diagnostic testing of the interface. Do not use this modular jack to connect to the NTP, PBX, or network. Use of this connector results in non-conformance to our EMC test results (CISPR 22) and violates the EMC Directive in the European Union.

Network equipment

Your E1 circuits may connect to either a telephone office (Centrex, LXC, IXC) or to a switch (such as a PBX, PABX, CBX, or ACD). Consult your telephone company representative or switch vendor for information on cabling from the distribution panel to a central office or switch.

If the E1 circuit leaves a building or exceeds the allowable length of the E1 cable, you may need to install a Network Termination Point (NTP). The telephone network provider is typically responsible for NTP devices.

Your Avaya vendor makes no recommendation for the NTP type and manufacturer.

Install the NTP at the distribution panel using punchdown blocks. We recommend KRONE Insulation Displacement Connection (IDC) blocks.

If your site requires other telephone network equipment, such as higher rate digital transmission equipment, optical fiber, or smart jacks, you can install them at the distribution panel.

Cable identification

Clearly label each cable pair for each span. During installation, the installer connects DB-15 or BNC connectors to the PDS:

- Label one outbound E1 cable “outbound Tx” (transmit) and another “outbound Rx” (receive).
- Label one inbound E1 cable “inbound Tx” (transmit) and another “inbound Rx” (receive).
- Label agent voice E1 cables with the voice connection type.

Labeling examples

The following label identifies the telephone cable that connects dial-in agent voice connections to PDS ports 01 through 30:

01-30-AG voice/dial-in

At the BNC connector for the E1 carrying agent headset lines 01 through 30:

AgentHeadsets 01-30

At the NTP or the switch for the same cable:

AgentHeadsets 01-30.

Tip:

Remember the following points when working with E1 connections.

- If you are connecting to a PBX, the PDS transmit cables connect to the PBX receive cables and the PDS receive cables connect to PBX transmit cables.

PDS and PG230 telephony

- Set the configuration values on the E1 card configuration menu and any switches (software or hardware) at the NTP for the proper distance and equalization required for the length of the cable, if applicable. Ask your telephone network provider for assistance, if needed.

Supported telephone circuits and connector pinouts

This section discusses the supported telephone circuits and connector pinouts for call centers using analog technology. The specification sheets in this section contain additional information to help you complete the analog and network headset connections.

Analog circuits

The PDS supports analog circuits to place and receive calls. The system also uses dedicated analog 2-wire circuits to connect its maintenance modem to the telephone network.

The following table summarizes the analog telephone signaling types that the PDS supports. For detailed information, contact your Avaya vendor.

Signaling type	Features
Loop Start	Emulates a 2500 telephone.
Ground Start	Provides a PBX-like ground start circuit with disconnect supervision.

The following table shows the analog circuit usage for each analog signaling type for outbound and inbound calling.

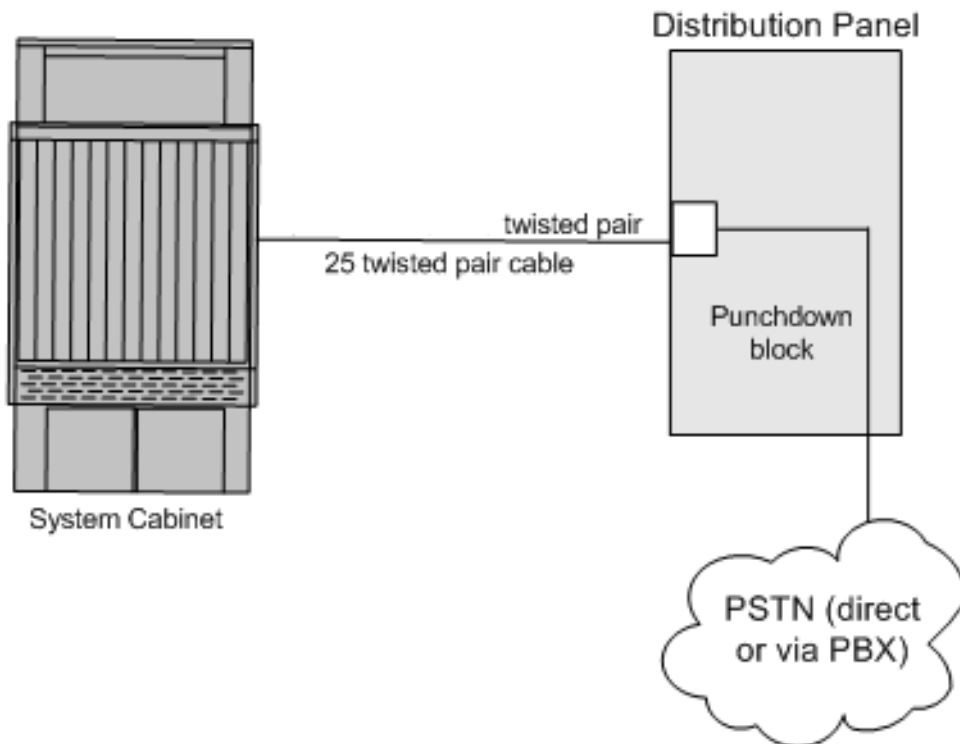
Analog circuit usage

Signaling type	PBX station	PBX trunk	CO station	Centrex station	CO trunk	IXC trunk
2-W Loop Start	X		X	X		
2-W Ground Start		X	X	X	X	X

Analog connection specifications

The PDS can use analog circuits for either ground start or loop start signaling for outbound or inbound calls. Circuit connections are made from the PDS to the central office, PBX, or ACD through your distribution panel.

Prepare cables from the distribution panel to the switched telephone network as specified by your telephone company representative.



Cable requirements

Install cables from the PDS to a punchdown block at the distribution panel. Use one cable for every sixteen 2-wire circuits.

Leave 10 feet (3 m) of slack for each cable terminating at the PDS.

The installer connects the Amphenol (Telco 50-pin) connectors to the PDS.

Distribution panel

Attach the 25-pair cable to the block with another 50-pin male 90 degree Amphenol connector. The pinouts on the 25-pin cable follow the RJ-21 cabling standard. Do not forget to install bridge clips at the punchdown block.

Consult your telephone company representative or switch vendor for information on cabling from the distribution panel to a central office or switch.

Cable identification

Clearly label each analog cable. During installation, the installer connects the Amphenol connectors to the PDS.

Refer to the 50-pin Amphenol Pinout table later in this section.

2-wire connections for amphenol connector

Color codes: BL-blue, BK-black, BR-brown, G-green, O-orange, R-red, SL-slate gray, V-violet, W-white, Y-yellow

Pin #	Line #	Tip/Ring	Wire color
1	1	Ring	BL-W
2	2	Ring	O-W
3	3	Ring	G-W
4	4	Ring	BR-W
5	5	Ring	SL-W
6	6	Ring	BL-R
7	7	Ring	O-R
8	8	Ring	G-R
9	9	Ring	BR-R
10	10	Ring	SL-R
11	11	Ring	BL-BK
12	12	Ring	O-BK
13	13	Ring	G-BK
14	14	Ring	BR-BK

Pin #	Line #	Tip/Ring	Wire color
15	15	Ring	SL-BK
16	16	Ring	BL-Y
17	not used	Ring	O-Y
18	not used	Ring	G-Y
19	not used	Ring	BR-Y
20	not used	Ring	SL-Y
21	not used	Ring	BL-V
22	not used	Ring	O-V
23	not used	Ring	G-V
24	not used	Ring	BR-V
25	not used	N/A	SL-V
26	1	Tip	W-BL
27	2	Tip	W-O
28	3	Tip	W-GR
29	4	Tip	W-BR
30	5	Tip	W-SL
31	6	Tip	R-BL
32	7	Tip	R-O
33	8	Tip	G-R
34	9	Tip	R-BR
35	10	Tip	R-SL
36	11	Tip	BK-BL
37	12	Tip	BK-O
38	13	Tip	BK-G
39	14	Tip	BK-BR
40	15	Tip	BK-SL
41	16	Tip	Y-BL

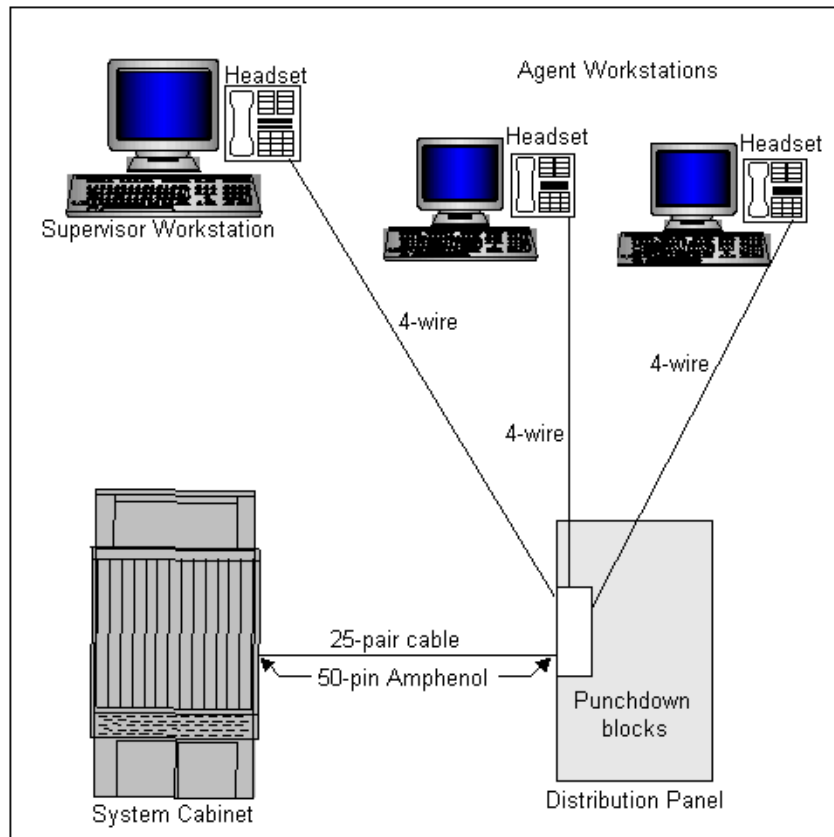
Pin #	Line #	Tip/Ring	Wire color
15	15	Ring	SL-BK
16	16	Ring	BL-Y
17	not used	Ring	O-Y
18	not used	Ring	G-Y
19	not used	Ring	BR-Y
20	not used	Ring	SL-Y
21	not used	Ring	BL-V
22	not used	Ring	O-V
23	not used	Ring	G-V
24	not used	Ring	BR-V
25	not used	N/A	SL-V
26	1	Tip	W-BL
27	2	Tip	W-O
28	3	Tip	W-GR
29	4	Tip	W-BR
30	5	Tip	W-SL
31	6	Tip	R-BL
32	7	Tip	R-O
33	8	Tip	G-R
34	9	Tip	R-BR
35	10	Tip	R-SL
36	11	Tip	BK-BL
37	12	Tip	BK-O
38	13	Tip	BK-G
39	14	Tip	BK-BR
40	15	Tip	BK-SL
41	16	Tip	Y-BL

Pin #	Line #	Tip/Ring	Wire color
42	not used	Tip	Y-O
43	not used	Tip	Y-G
44	not used	Tip	Y-BR
45	not used	Tip	Y-SL
46	not used	Tip	V-BL
47	not used	Tip	V-O
48	not used	Tip	V-G
49	not used	Tip	V-BR
50	not used	N/A	V-SL

Analog direct-connect headset connection specifications

The PDS can use special 4-wire analog voice circuits for direct-connect (dedicated) agent headsets.

Analog voice cables for direct-connect agent headsets connect from the PDS to the distribution panel. From the panel, they connect to agent headsets at individual PDS agent workstations.



Cable requirements

Install cables from the PDS to a punchdown block at the distribution panel. Use one 25-pair cable for every 12 direct-connect headsets.

Install cables from the distribution panel to each agent workstation and supervisor workstation that will use a direct-connect headset.

Total cable length from the PDS to any headset may not exceed 3,000 feet (900 m). Leave 10 feet (3 m) of slack for each cable terminating at the PDS.

Distribution panel

From the PDS to the distribution panel, connect one 50-pin male 90 degree Amphenol connector to a 25-twisted pair Telco, 26 gauge or larger cable for every twelve headsets.

At the distribution panel, attach the 25-pair cable to the block with another 50 pin male Amphenol connector.

Wire the cable that runs from the distribution panel to the headsets directly into the punchdown block.

Connect one 4-wire (minimum), shielded, twisted-pair cable to the punchdown block for each headset. Run the cable to within 6 feet (1.8 m) of each headset. Connect two pairs of wires for each headset. The connector at the headset will vary depending on model selected.

RJ-11 pinouts at headset

The following table shows the RJ-11 pinouts at the headset.

Tip/Ring	Ear/Mouth	Pin	Wire color
Ring	Ear	3	Red
Tip	Ear	4	Green
Ring	Mouth	2	Black
Tip	Mouth	5	Yellow

Cable identification

Clearly label each cable. During installation, the installer connects each 25-pair cable to the PDS.

Example

At the PDS, the label on the connector for the headsets at agent workstations 1 through 12 is AgentHeadsets 1-12. At agent workstation number 7, the label on the jack for that headset is Headset 7.

50-pin amphenol pinouts for dedicated headset connections

Color codes: BL-blue, BK-black, BR-brown, G-green, O-orange, R-red, SL-slate gray, V-violet, W-white, Y-yellow

Pin #	Headset #	Ear/Mouth	Tip/Ring	Wire color
1	1	Ear	Ring	BL-W
2	1	Mouth	Ring	O-W
3	2	Ear	Ring	G-W
4	2	Mouth	Ring	BR-W
5	3	Ear	Ring	SL-W
6	3	Mouth	Ring	BL-R
7	4	Ear	Ring	O-R
8	4	Mouth	Ring	G-R
9	5	Ear	Ring	BR-R
10	5	Mouth	Ring	SL-R
11	6	Ear	Ring	BL-BK
12	6	Mouth	Ring	O-BK
13	7	Ear	Ring	G-BK
14	7	Mouth	Ring	BR-BK
15	8	Ear	Ring	SL-BK
16	8	Mouth	Ring	BL-Y
17	9	Ear	Ring	O-Y
18	9	Mouth	Ring	G-Y
19	10	Ear	Ring	BR-Y
20	10	Mouth	Ring	SL-Y
21	11	Ear	Ring	BL-V
22	11	Mouth	Ring	O-V
23	12	Ear	Ring	G-V
24	12	Mouth	Ring	BR-V

Pin #	Headset #	Ear/Mouth	Tip/Ring	Wire color
25	not used	N/A	N/A	SL-V
26	1	Ear	Tip	W-BL
27	1	Mouth	Tip	W-O
28	2	Ear	Tip	W-GR
29	2	Mouth	Tip	W-BR
30	3	Ear	Tip	W-SL
31	3	Mouth	Tip	R-BL
32	4	Ear	Tip	R-O
33	4	Mouth	Tip	G-R
34	5	Ear	Tip	R-BR
35	5	Mouth	Tip	R-SL
36	6	Ear	Tip	BK-BL
37	6	Mouth	Tip	BK-O
38	7	Ear	Tip	BK-G
39	7	Mouth	Tip	BK-BR
40	8	Ear	Tip	BK-SL
41	8	Mouth	Tip	Y-BL
42	9	Ear	Tip	Y-O
43	9	Mouth	Tip	Y-G
44	10	Ear	Tip	Y-BR
45	10	Mouth	Tip	Y-SL
46	11	Ear	Tip	V-BL
47	11	Mouth	Tip	V-O
48	12	Ear	Tip	V-G
49	12	Mouth	Tip	V-BR
50	not used		N/A	V-SL

Chapter 5: PDS and PG230 network communications

The PDS and PG230 need to be prepared to connect to your network. Preparations include ordering and installing data cables, isolating the network traffic, and providing data connectivity.

This section contains the following topics:

- [Prepare your network](#) on page 80
- [IP address requirements](#) on page 81
- [Ethernet II network connection specifications](#) on page 82
- [IBM Token Ring network connection specifications](#) on page 84
- [Serial-attached agent workstation specifications](#) on page 86

Prepare your network

Your company provides the necessary cabling and components to connect the PDS to your network. PDS components include the system cabinet with administrator console, supervisor workstations, and agent workstations. You may find it helpful to prepare a network diagram that shows all cables, connectors, and devices. Since network and telephone cables often share a cable run, you may want to combine this diagram with the telephony diagram.

To prepare your network for installation, do the following:

- Identify which components will connect to your network
- Identify the appropriate network connector for each component
- Order and install network connectors, devices, and cables
- Reserve a dedicated, static IP address for the PDS CPU.

Network isolation

The PDS cabinet internal network is Ethernet 10BaseT. The connection to your network is 10/100BaseT. For multi-dialer, the recommended connection is 100BaseT.

For optimal PDS operation in Token Ring LAN environments, the PDS provides an optional Token Ring card as an interface to your Token Ring LAN.

Multi-dialer network isolation

In a multi-dialer environment, the connection to your network is 100BaseT. Token Ring is not supported in a multi-dialer environment.

IP address requirements

The PDS requires an IP address for the CPU to allow communication to your network. Ask your network administrator for a dedicated, static IP address. The other PDS internal components will be assigned IP addresses by Avaya to separate internal and external work traffic. However, your installation may require additional IP addresses based on the features you purchased.

IP address requirements for PDS components

Use the following table to determine which IP addresses are required for other PDS components.

PDS components	IP address
Supervisor workstation	Required for each PC, can be dynamic or static
Agent workstation	Required for each network-attached workstation
Host or enterprise data source	Alias and IP address
CTI link	Required if present
ASPI server	Required if present
Network printer	Required if present, can be static or dynamic

Network domain name service requirements

To network data between the PDS CPU, the mid-tier, supervisor workstations and any other PDS units within a pod, the following DNS information is needed:

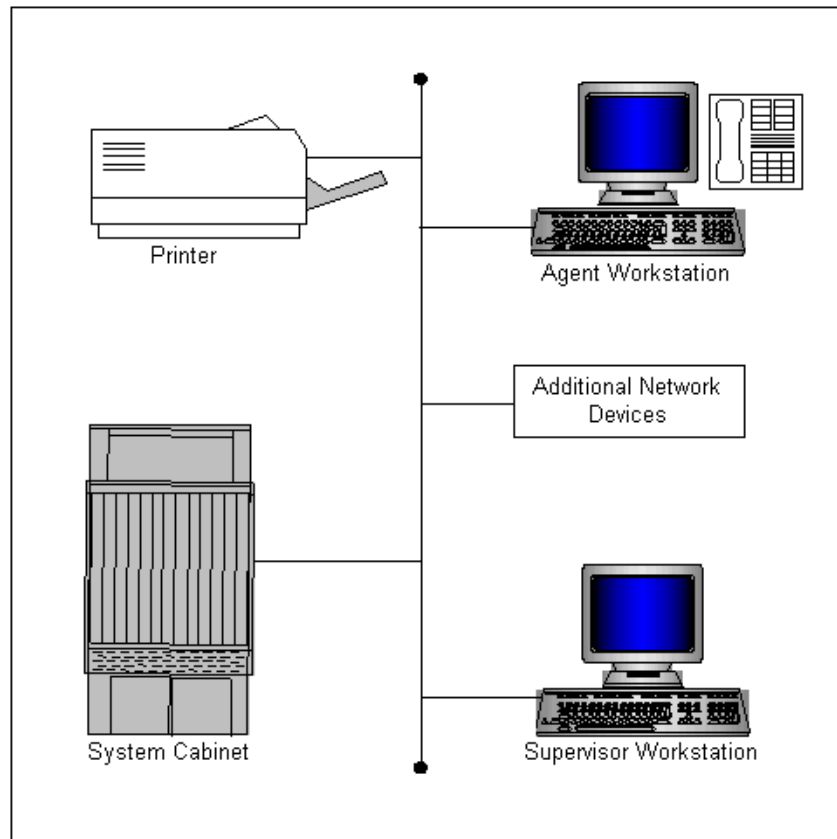
- Domain name and DNS server IP address
- Dialer DNS name
- CD DNS name
- Network printer DNS name
- Administration Manager DNS name (if applicable)

Ethernet II network connection specifications

The PDS cabinet internal components connect to an Ethernet II network. This internal network transfers data between these components only. A separate PCI Ethernet card is used to connect to your network.

Connect your Ethernet II network to the system cabinet. Supervisor and agent workstations connect to your network.

For PG230 Gateway information refer to [Ethernet and serial connections](#) on page 29



Network requirements

Obtain dedicated, static IP addresses for each component connected to the PDS and your network.

The PDS supports Ethernet II networks that meet the following requirements:

- Ethernet II

- Address Resolution Protocol (ARP)
- TCP/IP
- User Datagram Protocol (UDP)
- Telnet and FTP
- PDS compatible sockets (Consult with your Avaya vendor for the most current list of required sockets Ref. Doc. 90-0295)
- Provide a location for the switch (your Avaya vendor has placement and environmental requirements)

Supervisor workstation

Supervisor workstations connect directly to your network and should match the connections used on your network.

Agent workstations

Serial-attached agent workstations should match the connections used on your network.

Cable identification

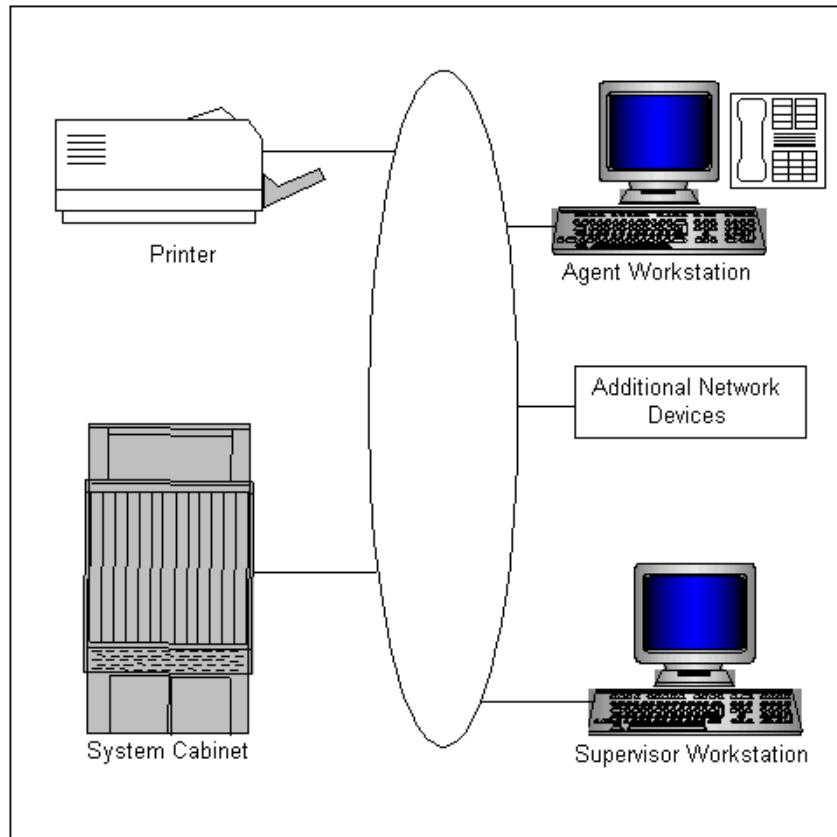
To make connecting the cables easier, clearly label each cable end with the component, number/location, and cable type.

IBM Token Ring network connection specifications

The PDS cabinet internal components connect to an Ethernet II network. This internal network transfers data between these components.

The optional Token Ring card provides connectivity between the system cabinet and your network.

For PG230 Gateway information refer to [Token Ring network interface](#) on page 28.



Network requirements

Obtain dedicated, static IP addresses for each component connected to the PDS and your network.

The PDS supports IBM Token Ring networks that meet the following requirements:

- IEEE 802.5-compliant

- Address Resolution Protocol (ARP)
- TCP/IP
- User Datagram Protocol (UDP)
- Telnet and FTP
- Category 5 cables

Supervisor workstations

Supervisor workstations connect directly to your network and should match the connections used on your network.

Agent workstations

Agent workstations connect to your network and should match the connections used on your network.

Cable identification

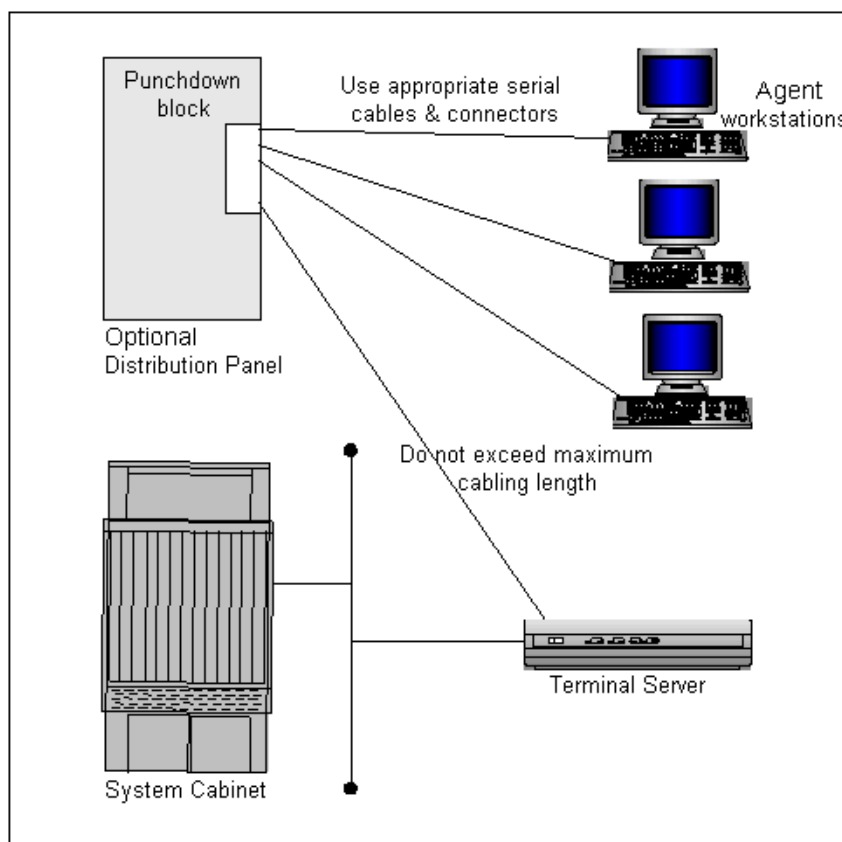
To make connecting the cables easier, clearly label each cable end with the component, number/location, and cable type.

Serial-attached agent workstation specifications

Serial-attached agent workstations can be ASCII terminals or PCs running terminal emulation software. Serial-attached terminals may be dual-ported. One port connects the terminals to the PDS and the other connects to your host.

You are responsible for providing the terminal servers along with cabling, configuration, and support.

One or more terminal servers located outside the system cabinet connect the terminals to the PDS.



Agent workstations

Serial cables connect serial-attached agent workstations directly to the terminal server or through the distribution panel.

For PG230 Gateway information refer to [PG230 workstation](#) on page 24.

Terminal servers

See the manufacturer's product documentation for details on the following requirements:

- Placement
- Electrical
- Environmental
- Cable pinouts

Data LAN connection

You provide and support the terminal servers that connect to your Ethernet II network. Make sure that they conform to Ethernet II standards for network cable distances and use TCP/IP to connect to the PDS and across the network.

Cable identification

Clearly label each connector at the distribution panel or terminal server with the workstation identification.

Label each cable with the associated workstation.

Chapter 6: Blending and ACD configurations

Setting up Blending requires coordinating settings on the ACD and on the PDS. Many ACDs require special settings and have unique terminology. You will work with your switch representative and your Avaya representative to ensure that the system settings are compatible.

This section contains the following topics:

- [Intelligent Call Blending overview](#) on page 90
- [Agent Blending overview](#) on page 91
- [PDS setup](#) on page 99
- [ACD setup](#) on page 100

Intelligent Call Blending overview

PDS uses Intelligent Call Blending (IBC) as a call blending method for call centers whose main priority is outbound dialing.

An IBC system distributes a blend of inbound and outbound calls to PDS agents. Typically, the ACD transfers inbound calls to available inbound or blend agents on the PDS. When an agent isn't available, the PDS places calls in the inbound wait queue. If your system doesn't use an ACD, the PDS transfers inbound calls to available inbound or blend agents.

In an IBC system, blend agents handle outbound calls until there are more inbound calls than available inbound agents. Intelligent Call Blending passes the excess inbound calls to the blend agents. When the inbound call volume decreases, the PDS returns to passing outbound calls to the blend agents. The IBC system does not require special switch settings.

An IBC system distributes a blend of inbound and outbound calls to PDS agents. Typically, the ACD transfers inbound calls to available inbound or blend agents on the PDS. When an agent isn't available, the PDS places calls in the inbound wait queue. If your system doesn't use an ACD, the PDS transfers inbound calls to available inbound or blend agents.

Inbound Calling and Intelligent Call Blending

Intelligent call blending routes inbound calls to agents who otherwise participate in outbound calling jobs. Blend agents handle outbound calls until there are more inbound calls than available inbound agents. ICB passes the excess inbound calls to the blend agents. When the call volume decreases, PDS returns to passing outbound calls to the blend agents. ICB works with inbound trunks from a central office, a PBX, or with inbound trunks from an ACD. When working with a central office or PBX, inbound calls are routed directly to the PDS. When working with an ACD, inbound calls are distributed from the ACD to the PDS. The distribution is based on thresholds configured on the ACD.

Agent Blending overview

Agent Blending integrates outbound calling activities on your PDS with inbound calling activities on your ACD. In an Agent Blending system, ACD agents log on to the PDS and the ACD.

Agent Blending monitors the activity on the ACD and uses this information to determine when to acquire agents for outbound calling and when to release ACD agents to handle inbound calls.

The PDS uses a pool of ACD (blend) agents for outbound calling. The system acquires the pooled agents for outbound calling when the inbound calling activity decreases. It releases these agents to inbound calling when the inbound calling activity increases. This movement keeps the ACD blend agents busy while keeping the ACD service level within your prescribed limits.

Predictive Agent Blending

If your first priority is servicing your inbound customers and your inbound volume is fairly high, you can benefit from using Predictive Agent Blending. Predictive Agent Blending focuses on the inbound mission and only acquires agents for outbound when the Service Level or Average Speed to Answer parameters are above the desired value. These agents take inbound calls until the PDS predicts that there are too many agents on inbound (the PDS bases the prediction on the service level requirements you set). The PDS then acquires agents from the ACD to handle outbound calls until the inbound volume increases.

Call centers with moderate to heavy inbound traffic and more than 25 agents in an inbound pool benefit from using Predictive Agent Blending. Predictive Agent Blending uses events from the ACD to forecast call volume and determine when to move ACD agents between inbound and outbound calling. In order for this movement to occur, your agents must be able to receive internal (station to station) calls.

Predictive Agent Blending uses events from the ACD to forecast call volume and determine when to move ACD agents between inbound and outbound calling. In order for this movement to occur, your agents must be able to receive internal (station to station) calls.

There are two control method option within Predictive Agent Blending: Average Speed to Answer and Service Level. To configure Predictive Agent Blending, set up an Average Speed to Answer or a Service Level domain group that contains one or more acquire domains and at least one inbound domain. Each type requires different settings.

Average Speed to Answer (ASA)

This domain group type uses the target ASA field (MAAS) for calculating when to acquire and release agents. Agents are acquired for outbound calls when the average speed to answer for

Blending and ACD configurations

all inbound domains in the group is less than or equal to the targeted value. Agents are released when the value rises above the target.

Parameter	Description
Desired level (required)	The average number of second within which agents should answer calls. Select a setting between 0 and 100 seconds. The setting represents an average calculated over the Average Speed to Answer interval.
Average Speed to Answer	The interval that the PDS uses to calculate the Average Speed to Answer. It influences how responsive the system is to fluctuations in answer delays. It is a rolling interval that begins each time you start the PDS or restart Agent Blending. The minimum setting is 0.25 hours (15 minutes). For example, a setting of 1 calculates the activity during the past hour.
Traffic intensity threshold (required)	The percentage of agents available to take calls. This setting determines how quickly the PDS moves agents between inbound and outbound calls. The goal is to prevent agents from being acquired or release too frequently. Agent are available if they are not taking calls or updating records. Agent Blending tracks calling statistics and uses this information to predict future availability. To calculate the threshold, the PDS divides the projected inbound call volume by the projected number of available agents.
Minimum number of agent on outbound (optional)	The minimum number of ACD blend agent, in this domain group, dedicated to handling outbound calls. This setting overrides Desired level. For example, no matter how low the Average Speed to Answer, there will always be this number of agents unavailable to handle inbound calls. Use this option when it is more important to meet outbound goals that to service inbound calls.
Initial traffic rate (optional)	The estimated number of calls each second. The PDS uses this rate for the first 30 calls. It ensures that there are enough agents to handle the first 30 calls.
Minimum talk time (optional)	The estimated minimum seconds agents spend connected on each inbound call. The PDS adds Talk time and After Call Work time to determine agent availability. Agent availability is sometimes call service capacity.
Minimum after call work time (optional)	The estimated minimum seconds agents spend, after a call, updating records and processing information.

Service Level (SL)

This domain group type uses the Service Criterion (SC, seconds), Desired Service Level (DSL, %), and Abatement Service Level (ASL, %) fields for calculating when to acquire and release agents. Agents are acquired for outbound calls when the percentage of inbound calls answered within the Service Criterion is greater than or equal to the Desired Service Level percentage.

Acquisitions will stop when the actual service level reaches the Abatement Service Level value. Agents will be released back to inbound when the service level falls below the desired value. The actual service level is calculated using all inbound domains in the group.

Parameter	Definition
Desired level (required)	(required) The percentage of calls agents should answer within the Service Criteria.
Abatement service level (required)	The percentage (service level) where the PDS stops acquiring agents for outbound calling. Select a value greater than the Desired level and less than or equal to 100.
Service criteria (required)	The maximum time within which an agent should answer a call. It measure the seconds an inbound call is in the ACD queue.
Service level interval (required)	The interval that the PDS uses to calculate the Service Level. It influences how response the PDS is to fluctuations in answer delays. It is a rolling interval that begins each time you start the PDS or restart Agent Blending. The minimum setting is 0.25 hours (15 minutes). For example, a setting of 1 calculates the activity during the past hour.
Traffic intensity threshold (required)	The percentage of agent available to take calls. This setting determines how quickly the PDS moves agents between inbound and outbound calls. The goal is to prevent agents from being acquired or release too frequently. Agents are available if they are not taking calls or updating records. Agent Blending tracks calling statistics and uses this information to predict future availability. To calculate the threshold, the PDS divides the projected inbound call volume by the projected number of available agents.
Minimum number of agents on outbound (optional)	The minimum number of ACD blend agents, in this domain group, dedicated to handling outbound calls. This setting overrides Desired level. For example, no matter how low the Average Speed to Answer, there will always be this number of agent unavailable to handle inbound calls. Use this option when it is more important to meet outbound goals than to service inbound calls.
Initial traffic rate (optional)	The estimated number of calls each second. The PDS uses this rate for the first 20 calls. It ensures that there are enough agents to handle the first 30 calls.
Minimum talk time (optional)	The estimated minimum seconds agents spend connect on each inbound call. The PDS add Talk time and After Call Work Time to determine agent availability. Agent availability is sometimes called service capacity.
Minimum after call work time (optional)	The estimated minimum seconds agents spend, after a call, updating records and processing information.

Proactive Agent Blending

If your focus is on outbound calling, but you need to service a low volume of inbound customers, you will benefit from using Proactive Agent Blending. Proactive Agent Blending focuses on outbound calls and releases agents to inbound only when an inbound call enters a monitored queue on the ACD. When an ACD agent logs on, the PDS immediately acquires the agent for outbound calling. When an inbound call comes into the ACD queue, the PDS releases the agent to handle the call. The number of queued calls before agents release to inbound can be configured for each OB_ONLY domain group. If inbound calls continue to come in, the PDS continues to release agents. As soon as the queue is empty, the PDS acquires the agent for outbound calls.

Outbound Agent Blending

Outbound Agent Blending acquires ACD agents to handle outbound calls as soon as they log on to the PDS and the ACD. Since there is no inbound domain in the OB_ONLY domain group, agents who are assigned to an Outbound domain will not be released to handle inbound calls.

Inbound Calling and Agent Blending

Agent Blending integrates outbound calling activities on your PDS with inbound calling activities on your ACD. ACD agents log on to the PDS and the ACD. Agent Blending monitors the activity on the ACD and uses this information to determine when to acquire and release ACD agents for outbound calling.

The PDS uses a pool of ACD (blend) agents for outbound and inbound calling. The system acquires the pooled agents for outbound calling when the inbound calling activity decreases. It releases these agents to inbound calling when the inbound calling activity increases.

This movement keeps the blend agents busy while keeping the ACD service level within your prescribed limits.

Domains

No matter which type of switch your system uses, the PDS requires domains and domain groups. Domains are the PDS' name for ACD call queues which are defined on the ACD and on the PDS.

Each domain is a member of a domain group. Agent Blending collects calling events for each domain and totals them by domain group for statistic calculation. It uses these statistics to determine when to move ACD agents between inbound and outbound calling. It does not total

statistics across domain groups and it does not monitor activity in call queues that are not part of a domain group.

After your system is installed, assign your agents to domains. Usually you assign agents to domains based on a skill set. For example, you might divide agents into three sets:

- agents who handle only credit card customers
- agents who handle consumer loan customers
- agents with skills to handle both credit card customers and consumer loan customers

Configuring domains

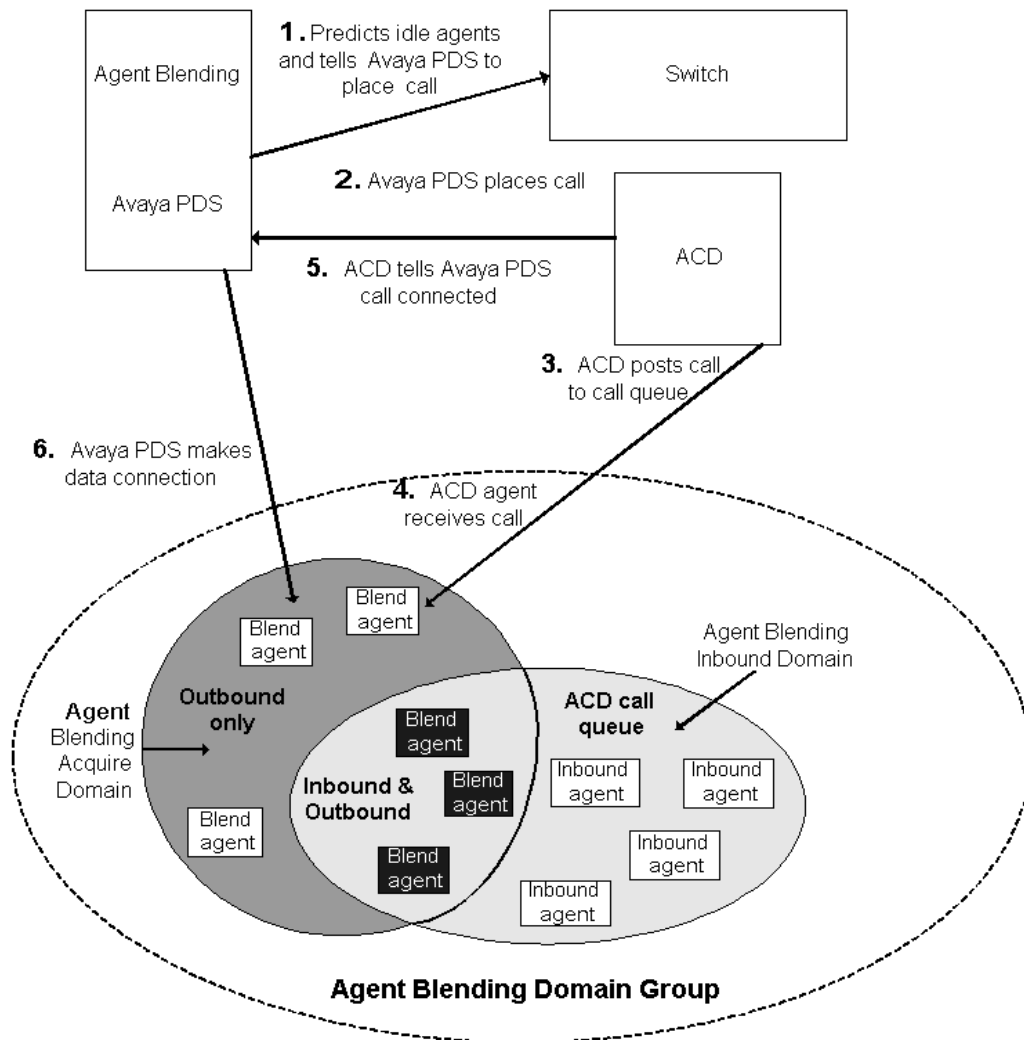
The types of domains you configure depend upon the ACD. The two main domain types are inbound and acquire. All Agent Blending systems must have an acquire domain.

Agent Blending uses inbound domains to determine agent availability by monitoring and analyzing the traffic. It uses acquire domains to acquire agents for outbound calling.

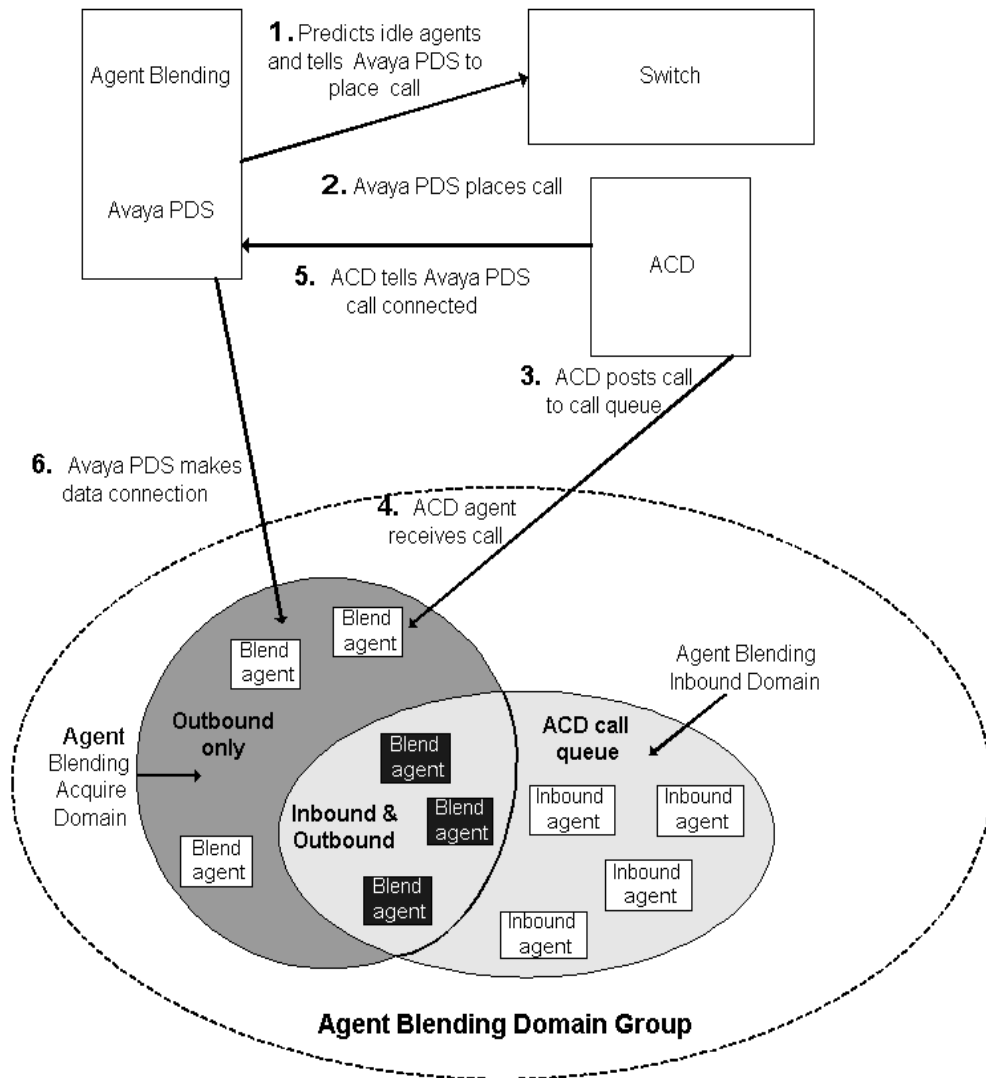
In addition to inbound and acquire domains, the PDS recognizes two additional domains. Some ACDs use auxiliary domains to monitor all calling activity in a domain group. In addition to inbound and acquire domains, the PDS recognizes two additional domains. Some ACDs use auxiliary domains to monitor all calling activity in a domain group. Meridian switches without

Blending and ACD configurations

multiple queues assignment (MQA) use transient domains to temporarily hold agents who are moving between inbound and outbound.



Meridian switches without multiple queues assignment (MQA) use transient domains to temporarily hold agents who are moving between inbound and outbound.



Domain groups

During site preparation, you identify which domains you want grouped. A domain group contains one or more domains.

Each domain group must be defined using one of the following four configurations:

- Outbound without inbound domain (OB_ONLY control method)
- Predictive-Average Speed to Answer (ASA control method)
- Predictive-Service Level (SL control method)
- Outbound with inbound domain (Proactive Blend, OB_ONLY control method)

Agent logons

In an Agent Blending system, an agent can handle only inbound calls, inbound and outbound calls, or only outbound calls. An agent who handles only inbound calls logs on to the ACD. The PDS may monitor the agent's inbound calling activity based on the PDS and ACD configuration.

An agent who handles both inbound and outbound calls logs on to the PDS as an ACD agent and to the ACD to receive inbound and PDS outbound calls. The PDS monitors the inbound calling activity and acquires ACD agents for outbound calling when appropriate.

An agent who handles only outbound calls logs on to the PDS as an ACD agent and the ACD to receive PDS outbound calls. The PDS acquires the agent immediately for outbound calling.

The following table summarizes agent logons based on the calls an agent handles and whether you want Agent Blending to monitor agents and calculate statistics based on agent calling activity.

Call type	Monitored by Agent blend	PDS logon	ACD logon
Inbound only	No	N/A	ACD logon
Inbound only	Yes	N/A	Log on using the method to receive only inbound calls, not outbound calls from the PDS (ACD and acquire skill related)
Outbound and Inbound	Yes	ACD agent	Log on to receive ACD inbound and outbound calls from the PDS.
Outbound	Yes	ACD agent	Log on to receive outbound calls from the PDS.

PDS setup

During the setup process, you specify the Agent Blending settings, domains, domain groups, and domain group control methods. Your Avaya representative configures the Agent Blending software to match your specifications. Later, if you make changes to Agent Blending, you define these settings in the Supervisor's Main Menu of the character-based application or Agent Blending from Campaign Director tools.

ACD setup

DEFINITY® G3

PDS supports the DEFINITY G3 switch with the CentreVu computer telephony (CVCT). The CVCT runs on a separate PC connected to the Definity G3 MAPD card. The PC requires two NICs.

For Agent Blending to acquire or release an agent, the agent must log on to both the DEFINITY G3 ACD and the PDS.

DEFINITY G3 terminology

The following terms are specific to DEFINITY G3:

Vector - Settings that determine how the switch handles incoming calls based on the number dialed. When the DEFINITY G3 is configured with Expert Agent Selection (EAS), the vector directs the incoming call to split, hunt group, or skill hunt group.

Vector Directory Number (VDN) - The extension number that accesses a vector. Agent Blending uses the Vector Directory Number for the domain address and domain extension.

Hunt Group - An agent queue on an ACD configured without EAS. The ACD hunts for the next available agent in each hunt group. It uses the hunt method defined on the ACD.

Skill - A method for call center managers to match the needs of a caller to the talents of the agents. A skill designates a work category such as sales or collections. It enables the ACD to route types of calls to queues. ACD administrators can assign up to four skills or sets of skills to each agent logon ID.

Skill Hunt Group - Replaces ACD splits when the ACD is configured with EAS. The ACD can be queued to up to three different skill hunt groups at one time.

Agent Blending configuration

During the setup process, you can specify system settings, which call queues to treat as domains, how to group domains, and each domain group's control method and parameters. Your Avaya representative configures the Agent Blending software to match your specifications.

Domains - Agent Blending monitors the activity for each split, hunt group, or skill hunt group you set up as a domain. Agent Blending for DEFINITY G3 expects to receive call event messages for the types of domains shown below:

- Inbound domain - An agent group that receives inbound calls from customers
- Acquired domain - An agent group that receives acquired calls from the PDS

Configuring domains on the PDS - On a DEFINITY with EAS, domains are skill hunt groups. On a DEFINITY without EAS, domains are splits or hunt groups. Ask your DEFINITY representative to provide the following information for each domain you want Agent Blending to monitor:

- Vector directory number
- Domain type (inbound or acquire)

Domain groups - Agent Blending monitors three types of domain groups:

1. Predictive Agent Blending®
2. Proactive Agent Blending
3. Outbound Agent Blending

Specify the following information for each domain group:

- domain group name
- domain group type
- domain group settings

Follow these rules when assigning domains to domain groups:

- A domain can belong to only one domain group.
- To configure the system for Predictive Agent Blending, set up a Predictive Agent Blending domain group. The control method can be either ASA or SL. Assign one or more acquire domains and at least one inbound domain to the group.
- To configure the system for Proactive Agent Blending, set up a Proactive Agent Blending domain group and assign at least one acquire domain and at least one inbound domain. The control method is OB_ONLY (Outbound only).
- To configure the system for Outbound Agent Blending only, set up an Outbound domain group and assign only an acquire domain. The control method is OB_ONLY (Outbound only).

DEFINITY G3 configuration

The splits, hunt groups, or skill hunt groups included in domain groups are different depending on the use of your ACD optional EAS feature. You must specify whether your DEFINITY G3 uses EAS. For more information on EAS, see your DEFINITY G3 documentation.

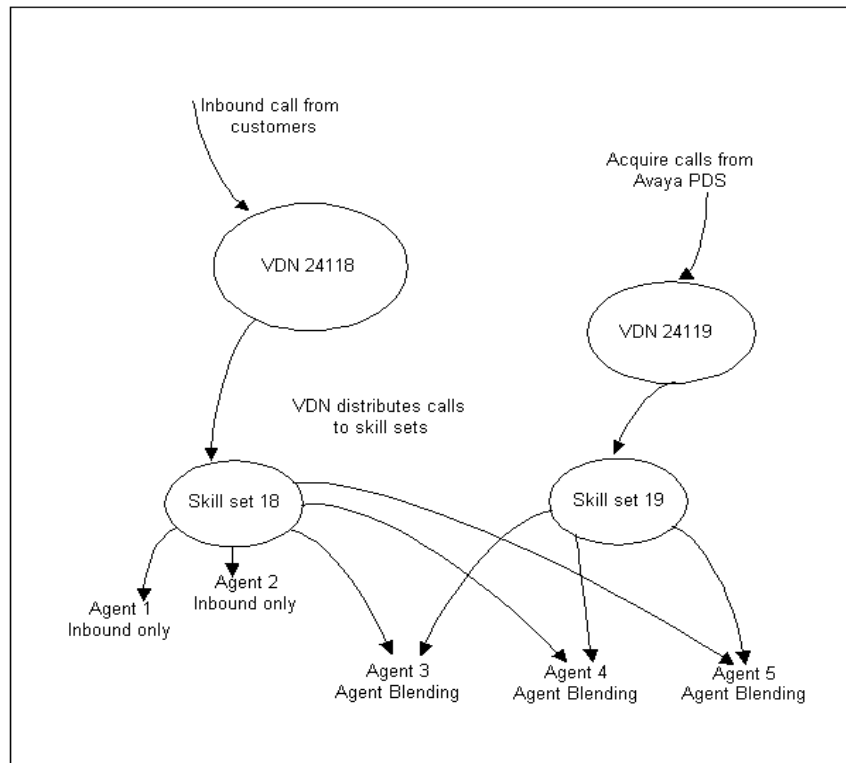
To configure DEFINITY G3 to work with Agent Blending, enable the ASAI feature on the DEFINITY G3. Also, enable the DEFINITY G3 LAN Gateway interface on the DEFINITY G3. Reserve one LAN Gateway link number for the CTI interface.

Blending and ACD configurations

Monitoring and Recording interface for use with CentreVu Call Recording on the DEFINITY G3 must configure the T1 lines designated as headset trunks differently. This configuration enables the DEFINITY G3 to identify call events for acquired calls.

To configure DEFINITY G3 to work with Agent Blending, CentreVu Call Recording, and Monitoring and Recording, assign a station ID to each port on the T1 used as a headset trunk.

Domains - For each agent queue Agent Blending recognizes as a domain, define the Vector Directory Number (VDN) and the domain type. The following illustration is a simple example containing two VDNs and skill sets. The VDN 24118 is an inbound domain that queues calls to skill set 18. The VDN 24119 is an acquire domain that queues calls to skill set 19. Agents 1 and 2 are inbound-only agents that belong to skill set 18. Agents 3, 4, and 5 are Predictive Agent Blending agents that belong to skill sets 18 and 19.



Agents, calls, and logons

The following table summarizes how agents log on to the PDS and DEFINITY G3 system based on the calls they handle and whether Agent Blending monitors the agents and calculate statistics based on their calling activity.

Call type	Monitored by Agent Blending?	PDS logon	DEFINITY G3 logon
Inbound only	No	N/A	Uses an agent identifier associated with a skill not related to an Agent Blending domain.
Inbound only	Yes	N/A	Uses an agent identifier associated with an inbound skill related to an inbound domain in an Agent Blending domain group.
Outbound and inbound	Yes	ACD agent	inbound Uses an agent identifier associate with a blend skill and an inbound skill related to an Agent Blending domain group.
Outbound	Yes	ACD agent	Uses an agent identifier associated with a blend skill related to an Agent Blending Outbound domain group
Outbound only	No	Outbound agent	N/A

Configuring CTI software for DEFINITY G3

To configure CentreVu to work with Agent Blending:

- Create a login and password for the PDS to monitor. This must be an administrator login.
- Install the CentreVu CTI software on a Windows NT workstation to act as a gateway.
- Set up the network link between the CentreVu CTI system and the Definity G3.
- Set up the T-Link defined as CSTA on the server. Create a login and password for the PDS to monitor. If password aging is enabled, notify your Avaya representative.
- Enable Basic and Host-based routing.
- Configure CentreVu software on the gateway to monitor all VDNs associated with the PDS domains.

Aspect CallCenter

The PDS supports Aspect CallCenter with software Release 6.0 or later. Aspect CallCenter consists of the Aspect switch and software, Aspect system workstation, and Aspect CallCenter

management workstations. The Aspect CallCenter communicates with the PDS using TCP/IP through an Ethernet network connection. The Aspect CallCenter must have the Application Bridge and Event Bridge software packages. For the Agent Blending system to acquire or release an agent, the agent must log on to both the Aspect CallCenter system and the PDS.

Aspect CallCenter terminology

The following terms are specific to the Aspect CallCenter.

Agent group - the A set of agents handling similar types of calls. Agents log on to an agent group when they log on to the Aspect CallCenter. Agent groups may be part of an agent super group. Agent groups correspond to PDS domains. Agent Blending monitors events for domains configured on the PDS as inbound or acquire.

Agent group - the A set of agents handling similar types of calls. Agents log on to an agent group when they log on to the Aspect CallCenter. Agent groups may be part of an agent super group. Agent groups correspond to PDS domains. Agent Blending monitors events for domains configured on the PDS as inbound or acquire.

Agent Super group - A collection of two or more agent groups. Aspect CallCenter simultaneously selects all agent groups in the agent super group. It delivers a call to the agent in the super group who has been available the longest. Agents do not log on to agent super groups.

If you set up the super group as a domain on the PDS, Agent Blending monitors the activity in the super group.

Data System Interlink Table - Part of the Aspect CallCenter database. It controls communication between the Aspect CallCenter and the PDS. You can view the Data System Interlink Table and set application parameters using the Aspect CallCenter management workstation. however, only an Aspect representative can set system-level parameters.

Call Control Tables (CCTs) - Part of the Aspect CallCenter database. CCTs control call routing, queuing, and messaging for agent groups and agent super groups. You can view, set up, edit, or delete CCTs from the Aspect CallCenter management workstation. There can be multiple CCTs for each agent group and agent super group.

Agent Blending configuration

During the setup process, specify the Agent Blending settings, domains, domain groups, and domain group control methods. The Avaya representative configures the Agent Blending software to match the specifications. Set up Agent Blending by obtaining the following information from your Aspect CallCenter representative:

- TCP/IP address of the Aspect CallCenter
- TCP/IP address of the backup Aspect CallCenter (if any)

- Alias (system name) of the Aspect CallCenter
- Alias (system name) of the backup Aspect CallCenter (if any)
- Field separator (if not '|'); consult Aspect's Data System Interlink Table setting

Domains - Agent Blending monitors agent states and call state events for each agent group and agent super group you set up as a domains. Agent Blending for Aspect CallCenter expects event messages from the types of domains shown below:

- Inbound domain - An agent group or agent super group that receives inbound calls from customers
- Acquire domain - An agent group or agent super group that receives acquire calls from the PDS
- Auxiliary domain - An agent group or agent super group that routinely receives transfer calls from inbound and acquire domains

Configuring domains on the PDS

Provide the following information for each Agent Blending domain to monitor:

- Domain identification (domain name).
- Domain type (inbound, acquire, or auxiliary).
- For each acquire domain, supply an unpublished, unique, telephone number. (The PDS uses this number to call the domain.)
- Set up the Aspect CallCenter group designation to identify each agent group or agent super group (AG for agent groups, ASG for agent super groups). Combine the group designation with the group identification number. Precede the identification number with zeros to make it three digits.
 - To identify an agent group with the identification number of 60, name the Agent Blending domain AG060.
 - To identify an agent super group with the identification number of 30, name the Agent Blending domain ASG030.

Domain groups - Each domain belongs to a domain group. Domain groups can contain agent groups or a mixture of agent groups and agent super groups. Specify the following information for each domain group:

- Domain group name
- Domain group type
- Domain group settings

Follow these rules when assigning domains to domain groups:

- A domain can belong to only one domain group.

Blending and ACD configurations

- To configure the system for Predictive Agent Blending, define a Predictive Agent Blending domain group. It can be ASA or SL. Assign one or more acquire domains and at least one inbound domain to the group.
- To configure the system for Proactive Agent Blending, define a Proactive Agent Blending domain group and assign one or more acquire domains and at least one inbound domain.
- To configure the system for Outbound Agent Blending only, define an Outbound domain group and assign only acquire domains.

Aspect CallCenter configuration

Before configuring Aspect CallCenter, obtain the following Aspect documentation:

- *Application Bridge Implementation Guide*, Release 6.0 or later
- *Aspect CallCenter Workstation User's Guide*, Release 6.0 or later

Configure the following items on the Aspect CallCenter:

- System settings
- Data System Interlink Table
- Agent groups
- Agent super groups
- Call Control Tables (CCTs)

System settings - Before you can configure the Data System Interlink Table, agent groups, agent super groups, and the CCTs, an Aspect CallCenter representative must configure the following items:

Avaya provided	Aspect CallCenter representative
PDS TCP/IP address and alias	TCP/IP address
PDS TCP port number	Backup Aspect CallCenter TCP/IP address
	alias
	Data interlink number for the PDS Ethernet connection

In addition to the configuration, the Aspect representative must enable event monitoring. The procedure depends upon the version of your Aspect CallCenter.

Use the following procedure to enable event monitoring in versions 6.x.

1. Create the file `/dbs/acc.dbs/event_mon.cnf`.
2. Enter the value **2** in the file. There must not be anything else in the file.
3. From the system prompt, type **dbput** and press **Enter**.

4. Reboot the Aspect CallCenter controller. Aspect CallCenter recognizes the changes after the reboot.

Data System Interlink Table - The Data System Interlink Table is a database record on the Aspect CallCenter. It allows you to use the network connection between the Aspect CallCenter and the PDS.

The alias names for the Aspect CallCenter and the PDS appear in the Data System Interlink Table. Make sure that the alias for each system is correct. If not, ask your Aspect CallCenter representative to correct them.

Configure the following fields on the Data System Interlink Table. Set fields not listed below to any value. For a detailed description of all fields in the Data System Interlink Table, see *Aspect's Application Bridge Implementation Guide*.

Field name	Setting
Data Interlink Number	Set to a number from 11 through 30. Your Aspect representative provides this value for the PDS-to-Aspect system Ethernet link for your system.
Version Number	Verify that this value is Release 6.0 (or higher).
Physical Protocol	Set to Ethernet
Physical Protocol	Set to TCP/IP
Port	Set to the PDS TCP port number provided by your Avaya representative.
Aspect CallCenter Address	This name is case sensitive; verify that it appears correctly. This is the Aspect CallCenter alias your Aspect representative configured. The Aspect CallCenter attaches this value as the header in messages it sends to the PDS.
Data System Address	Use lower case letters for this name; it is case sensitive. Verify that this name appears correctly, for example cpu1 or cpu2. This is the PDS alias your Aspect representative configured. The Aspect CallCenter expects this value as the header in messages it receives from the PDS.
Message Format	Set to Variable. This setting controls the packet length of data sent to the PDS. Use the smaller variable-length packet to reduce network traffic.
Field Separator	Set to any value documented in the Application Bridge Implementation Guide. If you choose any value other than 7 (which translates to the vertical bar or pipe character ' '), tell your Avaya representative. This value is the field separator Aspect insert between data fields sent to the PDS.
Send Type	Set to Yes, instructing Aspect CallCenter to send full data packets.

Agent groups and agent super groups - For Predictive Agent Blending and Proactive Agent Blending, consider the following configurations:

- Configure one or more agent groups or agent super groups to handle PDS acquisition calls.
- Configure at least one agent super group. Include at least one inbound agent group and an acquire agent group to handle the inbound calls.
- Configure Aspect CallCenter to distribute each call that the agent super group receives to the agent who has been idle the longest.
- For each acquire domain, configure Aspect CallCenter to associate unique, unpublished telephone numbers with the domain's agent group or agent super group. We recommend that all agents use the same class of service.

Call Control Table (CCT) - Aspect CallCenter processes call events according to steps defined in the CCT.

Configuring the Call Control Tables requires the data interlink number. Your Aspect representative must enter this system-level information.

The Aspect CallCenter processes both inbound and outbound calls according to steps defined in the Call Control Tables.

Define at least one CCT for each agent group or agent super group that is an Agent Blending acquire domain. The CCT must use the application number and data interlink number associated with PDS in the Aspect CallCenter database.

Each CCT for an Agent Blending domain must contain the following steps:

1. SEND DATA must be the first step in a CCT. It must contain the attribute LINK#>nn, where nn is the Data Interlink Number configured in the Data System Interlink Table. The LINK attribute causes Aspect CallCenter to send a Call Information Message (CIM) to the PDS. This message identifies the call domain to Agent Blending.
 - SEND DATA must also contain a SUBTYPE attribute. The SUBTYPE must be the agent super group or agent group designator and group identification number, for example, SUBTYPE ASG002.
 - Use the group designator AG if the CCT directs calls to an agent group.
 - Use the group designator ASG if the CCT directs calls to an agent super group.
 - Precede the group identification number with zeros to make it three digits long. Do not insert characters or spaces between the group designator and group identification number.

Group identification numbers are unique numbers from 001 to 999.

The SUBTYPE value is always the same as the domain identifier specified for the PDS. For example, agent group 9 is domain AG009 in Agent Blending and SUBTYPE AG009 in the CCT.

2. SELECT selects the agent who has been idle (available) the longest in the agent group or super group specified for a call.

For agent groups, the attribute is AGENT BY>GRP NUM> *nnn* (where *nnn* is the agent group identification number.)

For an agent super group, the attribute is AGENT SG BY>GRP NUM>*nnn*.

Note:

DO NOT precede identification numbers with zeros in this SELECT step. For example, the attribute for an agent group with the identification number 49 would read AGENT BY>GRP NUM> 49.

Note:

Agent Blending does not support CCTs that use network routing.



Important:

We strongly recommend not using call priority (a PRIORITY step) in CCTs.

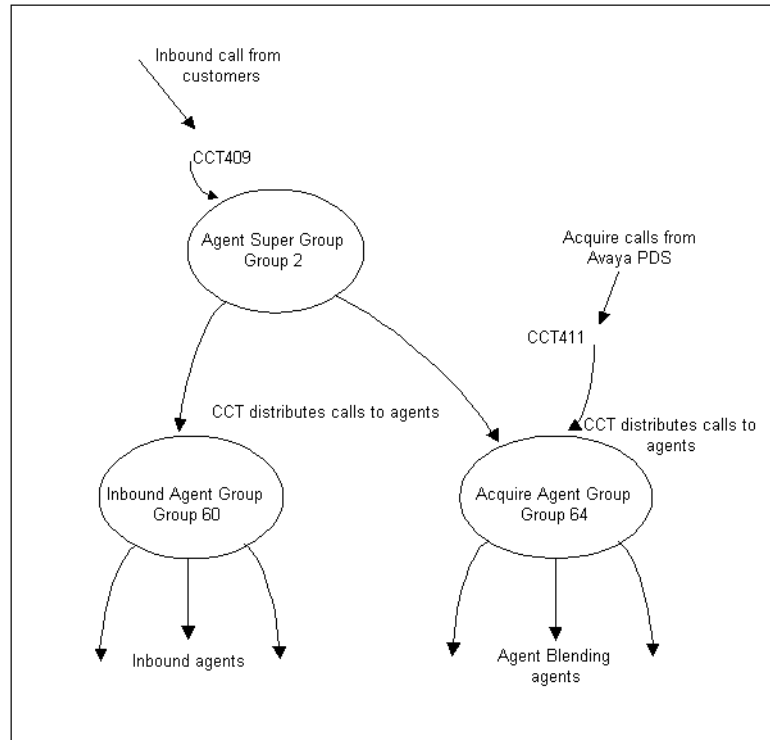
Aspect CallCenter configuration examples

The first example illustrates the Aspect CallCenter configuration of a Predictive Agent Blending domain group. The second example illustrates the Aspect CallCenter configuration of an Outbound Agent Blending domain group.

Predictive Agent Blending - The following illustration is an example of an agent super group containing two agent groups. One agent group handles inbound calls. The other agent group

Blending and ACD configurations

handles inbound and acquire calls. A Predictive Agent Blending domain group contains the agent super group and acquire agent group as domains.



PDS monitors inbound calls to agent super group 2, acquire calls to agent group 64, and agent states for both agent groups.

In this example, CCT 409 handles inbound calls to the agent super group and CCT 411 handles calls the PDS places to acquire agents in agent group 64.

The SEND DATA commands in the CCT work with the Agent Blending configuration for the domains. The LINK attribute causes Aspect CallCenter to send the event messages for ASG002 and AG064 to the data interlink connection for the PDS. The SUBTYPE attribute matches the domain identifiers configured in Agent Blending.

In CCT 409, the SELECT command applies to agent super group number 2. The agent who has been idle the longest in agent groups 60 or 64 receives the call. If an agent is not available, CCT 409 directs the Aspect CallCenter to queue the call for 24 seconds, play message number 40, then queue the call for 30 seconds and play message number 50 repeatedly until the call connects to an agent.

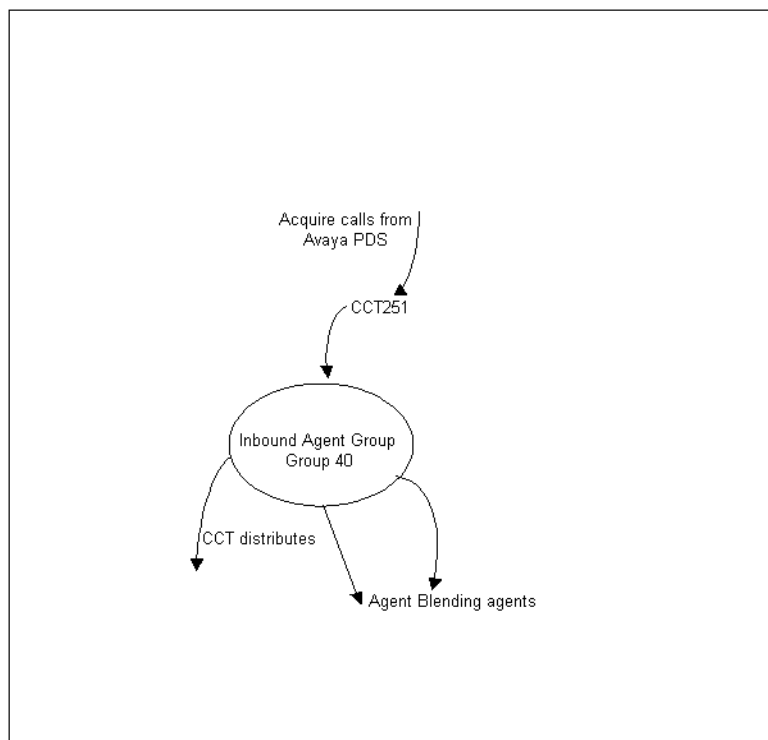
CCT 411 handles acquire calls that the PDS places to agent group 64. Although Agent Blending directs the system to place an acquire call when it predicts agents will be idle, inbound calls can come in simultaneously with acquire calls. In that case, no agent may be available when a call arrives, so the Aspect CallCenter queues the call for 90 seconds, then hangs up.

Note:

The data interlink number is 11.

Outbound Agent Blending domain group - The following illustration is a simple example of an acquire agent group that corresponds to an Agent Blending acquire domain. An Outbound Agent Blending domain group contains an acquire domain. During calling operations, the PDS places one call to the unpublished telephone number associated with the agent group for each agent logged on to the group.

The PDS monitors acquire calls and agent states on agent group 40.



Agents, calls, events, and logons

If you want the PDS to monitor call state and agent state events, the agents must log on to the PDS as ACD agents. The PDS can only acquire and release agents logged on to the system as ACD agents and logged on to an acquire agent group on the Aspect CallCenter.

Blending and ACD configurations

The following table summarizes how agents log on to the PDS and Aspect CallCenter system based on the calls they handle and whether you want Agent Blending to monitor call state and agent state events.

Call type	Agent state events	Call state events	PDS logon	Aspect CallCenter logon
Inbound only	No	No	N/A	Agent group is not a PDS domain and is not part of an agent super group that is a PDS domain
Inbound only	Yes	Yes	N/A	Agent group is an inbound domain or is in an agent super group that is a PDS inbound domain group
Outbound and inbound	Yes	Yes	ACD agent	Agent group is an acquire domain in an Agent Blending domain group
Outbound only	Yes	Yes	ACD Agent	Agent group is an acquire domain in an Agent Blending Outbound domain group
Outbound only	No	No	Outbound agent	N/A
Transfer calls	Yes	Yes	N/A	Agent group is configured as a PDS auxiliary domain

Meridian 1

The PDS supports the Meridian 1.

Meridian 1 terminology

The following terms are specific to Meridian 1.

ACD-DN (directory) - The ACD address for a call queue. It is the Agent Blending domain address.

ACD Agent Position ID - The number that identifies an agent's telephone extension. Agent Blending agents log on to the PDS as ACD agents using their ACD Agent Position ID as the ACD extension. During calling operations, managers can assign agents to Agent Blending domains by assigning agent positions to call queues, or agents can log on to call queues that are Agent Blending domains.

Multiple Queue Assignment - A Meridian 1 option that allows agents to log on to multiple call queues. The domains and domain groups you define and how your agents log on to call queues depend on whether your Meridian 1 uses multiple queue assignment (MQA).

Agent Blend configuration

During the setup process, specify the system settings, which call queues to treat as domains, how to group domains, and each domain group's control method and parameter values. Your Avaya representative configures the Agent Blending software to match your specifications.

For Agent Blending to function, the switch must have the following:

- An enhanced serial data interface (ESDI) card
- Meridian 1 Generic X11 Release 19 or later ACD software
- Meridian MAX (Version 5 or later) management information system (MIS) configured for VT220 operation
- Meridian Link (Version 4.0)
- An IBM PC-compatible or RS6000 functioning as the CallPath Server running CallPath Services API software

The ACD routes calls and generates call routing information for Agent Blending. The ESDI card allows the ACD to communicate that information quickly enough for Agent Blending.

Meridian MAX allows Agent Blending to get call center data. During calling operations, the PDS logs on to Meridian MAX as a supervisor.

Meridian Link allows Agent Blending to monitor call events. During calling operations, the PDS talks with Meridian Link through the CallPath Server. Meridian Link and the CallPath Server make up the Meridian 1 Computer Telephony Integration (CTI).

Throughout this chapter, the combined hardware and software of the Meridian 1, Meridian MAX, Meridian Link, and the CallPath Server are referred to as Meridian 1.

Domains - The PDS acquires an ACD agent in an acquire domain by calling the agent. The telephone connection between the system and the agent stays open as long as the agent handles outbound calls. When Agent Blending wants to release the agent to handle inbound calls, the PDS breaks the connection.

Acquire domains - An acquire domain is any domain that holds an ACD agent who receives acquire calls from the PDS.

Transient acquire domains - The following table describes transient domains with MQA or without MQA.

With MQA	Without MQA
Do not use transient acquire domains for Meridian 1 systems with MQA	<p>Transient acquire domains hold agent positions for agents moving from inbound to outbound calling.</p> <p>with MQA.</p> <p>To acquire an ACD blend agent, Agent Blending moves the agent from an inbound domain to a transient acquire domain. The PDS then acquires the agent. Once the acquisition is complete, Agent Blending moves the agent back to the original inbound domain. The transient acquire domain is then free for another acquisition.</p> <p>The two types of transient acquire domains are described below.</p> <ul style="list-style-type: none">• a regular transient acquire domain belongs to a specific domain group.• a floating transient acquire domain does not belong to a specific domain group; all domain groups share the floating transient acquire domain. <p>When Agent Blending acquires an agent position, it uses any regular transient acquire domain belonging to a domain group before looking for a floating transient acquire domain.</p>

The following table describes team acquire domains.

With MQA	Without MQA
On Meridian 1 systems with MQA, team acquire domains hold agent positions for blend agents who are handling outbound calls.	On Meridian 1 systems without MQA, team acquire domains hold agent positions for outbound-only agents.

Inbound Domains - You can specify any domain that holds agent positions receiving inbound calls as an inbound domain. Regular inbound domains hold agent positions for inbound or Agent Blending agents handling inbound calls.

If your Meridian 1 system uses overflowing, consult your Avaya representative for more information about configuring your system. For information about overflowing, see your Meridian 1 documentation.

Auxiliary Domains - Agent Blending for Meridian 1 can use auxiliary domains to monitor the completion of redirected calls. There are two types of ACD-DNs to specify as auxiliary domains:

- ACD-DNs receive calls redirected from regular inbound domains

- ACD-DNs redirect calls to regular inbound domains

Regular inbound domains can also receive redirected calls. Specify these ACD-DNs as regular inbound domains, not auxiliary domains.

Meridian 1 configuration

The following table lists the information needed for each category.

Category	Information description includes:
Call Path	<ul style="list-style-type: none"> ● CallPath Server host or data source name ● CallPath server TCP/IP address
Meridian Max	<ul style="list-style-type: none"> ● MIS ID for Agent Blending supervisor account ● Password for Agent Blending supervisor account ● TTY port for Agent Blending CPU connection
Agent Phone Configuration	<ul style="list-style-type: none"> ● AST (associate telephone) for Meridian Link applications ● IAPG value to Group 1 (send all messages to the Meridian link)
ACD Queue Configuration	<ul style="list-style-type: none"> ● ISAP value to Yes (send ACD messages in Meridian Link applications) ● VSID to the Value-added Server ID for Meridian Link <p>Obtain the following values for the Agent Blending CPU from your Avaya representative:</p> <ul style="list-style-type: none"> ● TCP/IP address ● Host or data source name

Domain groups - Agent Blending collects statistics for each domain and totals them by domain group. Set up your domain groups based on whether your Meridian 1 uses MQA.

Specify the following information for each domain group.

- Domain group name
- Domain group type
- Domain group settings

Follow these rules when assigning domains to domain groups.

- A domain can belong to only one domain group.
- To configure the system for Predictive Agent Blending, set up a Predictive Agent Blending domain group. It can be ASA or SL. Assign one acquire domain and at least one inbound domain to the group.
- To configure the system for Proactive Agent Blending, set up a Proactive Agent Blending domain group and assign one acquire domain and at least one inbound domain.

Blending and ACD configurations

- To configure the system for only Outbound Agent Blending, set up an Outbound domain group and assign only an acquire domain.

The following table shows the domain group rules.

With MQA	Without MQA
<p>Specify each domain group using the following rules:</p> <ul style="list-style-type: none">● Domains belong to only one domain group.● Use team acquire domains, not transient acquire domains.● Assign at least one team acquire domain and at least one inbound domain to each Predictive or Proactive Agent Blending domain group.● Assign at least one team acquire to each Outbound Agent Blending domain group.	<p>Specify each domain group using the following rules:</p> <ul style="list-style-type: none">● Domains belong to only one domain group.● Assign at least one inbound domain to each Predictive or Proactive Agent Blending domain group.● Do not assign floating transient acquire domains to a domain group.● Assign one team acquire domain to each Outbound Agent Blending domain group. <p>A domain group that regularly acquires large groups of agents can dominate the use of a floating transient acquire domain. When this happens, less active domain groups may be unable to access a floating transient acquire domain. There are two ways to solve this problem:</p> <ul style="list-style-type: none">● Define additional floating transient acquire domains.● Assign a regular transient acquire domain to each less active group.

Predictive and Proactive Agent Blending domain groups - Specify each domain group using the following rules:

- There is no limit to the number of any type of domain.
- There is no limit to the number of domains in a domain group.

The following table shows the blending domain group rules.

With MQA	Without MQA
<p>Each Agent Blending domain group has one or more inbound domains and one or more team acquire domains. It may also contain auxiliary domains.</p>	<p>Each Agent Blending domain group has one or more inbound domains and one or more regular transient acquire domains. It may also contain auxiliary domains. Multiple Agent Blending domains groups share floating transient acquire domains.</p>

Outbound Agent Blending domain groups - On all Meridian 1 systems, Outbound Agent Blending domain groups contain one or more team acquire domains.

Agents, calls, and logons

The following table summarizes how agents log on to the PDS and Meridian 1 system based on the calls they handle and whether Agent Blending is monitoring the agents and calculating statistics based on their call activity with MQA.

Call type	Agent state events	PDS logon	Meridian 1 logon
Inbound only	No	N/A	Logs on to a call queue that is not an Agent Blending domain or is an Agent Blending auxiliary domain.
Inbound only	Yes	N/A	Logs on to a call queue that is an inbound domain in a Proactive or Predictive Agent Blending domain group.
Outbound and inbound	Yes	ACD agent; Agent Position ID is the ACD extension	Logs on to an inbound and team acquire domain in the same Agent Blending domain group.
Outbound only	Yes	ACD agent; Agent Position ID is the ACD extension	Agent group is an acquire domain in an Agent Blending Outbound domain group
Outbound only	No	Outbound agent	N/A

The following table summarizes how agents log on to the PDS and Meridian 1 system based on the calls they handle and whether Agent Blending is monitoring the agents and calculating statistics based on their call activity without MQA.

Call type	Monitored by Agent Blending	PDS logon	Meridian 1 logon
Inbound only	No	N/A	Logs on to a call queue that is not an Agent Blending domain or is an Agent Blending auxiliary domain.
Inbound only	Yes	N/A	Logs on to a call queue that is an inbound domain in a Proactive or Predictive Agent Blending domain group.

Call type	Monitored by Agent Blending	PDS logon	Meridian 1 logon
Outbound and inbound	Yes	ACD agent; Agent Position ID is the ACD extension	Logs on to a call queue that is an inbound domain in a Proactive or Predictive Agent Blending domain group.
Outbound only	Yes	ACD agent; Agent Position ID is the ACD extension	Logs on to a call queue that is a team acquire domain in an Outbound Agent Blending domain group.
Outbound only	No	Outbound only	N/A

Call Path - For Agent Blending to function on Meridian 1, the CallPath Server and CallPath Switch Server (if any) must be correctly installed and configured. In particular, all links must be functioning. There is a screen on the CallPath Server and SwitchServer to check links.

Supervisor accounts on Meridian Max

Agent Blending requires a dedicated supervisor account on Meridian MAX. The PDS logs on to this account during calling operations. The following sections explain how to set up the Agent Blending supervisor account on Meridian MAX. There are six steps to create and customize the supervisor account. The instructions on the following pages provide details for each step.

Creating the supervisor account - Through the supervisor interface, Agent Blending acquires call queue statistics and monitors agent positions. This step creates the login that the PDS uses. Log into Meridian MAX using any account with full supervisory privileges.

Complete the following steps:

1. Select **Enter System Administration Mode**. Press **Enter**, then type your password and press **Enter** again.
2. Select **Parameter Administration > Supervisor Definition**.
3. Enter the values for each field as shown in the following table.

Field	Value
MIS ID	Any unused code
Name	Digital System Intl.
Meridian 1 PositionID	Blank

Field	Value
Password	Any string
Default Queue Display	Standard Tabular ACD-DN Display
Statistics Update Rate	10
DN Display	Number of Name1
Default View	Global
Display Name	Enabled
Emergency Status	Disabled
Audible Alarm	Disabled
Color Customization	Disabled
Display Definition	Enabled
Banner page	Enabled
Profile Maintenance	Enabled
Group Member Definition	Enabled
Global Statistics	Enabled
System Administration	Enabled
Monitor Mode	Enabled
Parameter Administration	Enabled
Report Definition	Enabled
Schedule Definition	Enabled
System Reports	Enabled
Configuration Control	Enabled
Supervisory Messaging	Disabled (if field is present)
Remote Printing	Disabled (if field is present)
Load Printer Override	Disabled (if field is present)
CDN Member Definition	Disabled (if field is present)
Tabular Printer	Blank
Graphic Printer	Blank

Blending and ACD configurations

4. Press the **Commands** softkey. Select **Save changes** to the displayed supervisor definition. Press **Enter**.
5. Select **Exit** (without saving changes). Press **Enter**.
6. Exit each menu until you return to the main menu. Log out.

Define the formula for call waiting statistics - Meridian MAX counts two types of calls held in the wait queue beyond the service criterion: calls answered and calls abandoned. Agent Blending needs these statistics totaled for each call queue. This step defines the call waiting statistic used by each call queue. Log in to Meridian MAX using an account with full supervisory privileges (not the account you created in Step 1).

Perform the following steps:

1. Select **Display Definition**, then **Formula Definition**.
2. Position the cursor in the Calculation box and press the **Change Field** softkey.
3. Choose **Num Ans After Thresh** and **Num Abd After Thresh**. Press **Enter** after each choice.
4. Press the **Operator** softkey. Type + and press **Enter**, then press the **Edit Done** softkey.
5. Fill in the values for each field exactly as shown in the following table.

Field	Value
Mtn Display Width	4
In Menus	Calls After Threshold
In Columns	>T
In Graphics	Calls Aft Th

6. Press the **Commands** softkey. Choose **Save as a new formula** then press **Enter**.
7. Select **Exit** (without saving changes).
8. Select **Enter**.
9. Log out.
10. Exit each menu until you return to the main menu.

Define a quadrant for queue statistics - Agent Blending expects to find statistics collected in a specific order on Meridian MAX. This step defines a quadrant to collect those statistics in the expected order. Log into Meridian MAX using the MIS ID and password for the Agent Blending supervisor account created in Step 1.

Perform the following steps:

1. Select **Display Definition**, then **Quadrant Definition**.

2. Select or type values for each field exactly as shown in the following table.

Field	Value
Statistics Group	ACD-DN Statistics
Definition Name	DSI HCB Quadrant
Quadrant Size	Full Width
Quadrant Style	Tabular

3. In the Column Selections field, select the following items from the available statistics in the order shown:

- Average answering delay
- Telephone service level
- Total number of calls answered
- Total number of calls abandoned
- Calls after threshold
- Calls in queue
- Positions manned
- Positions spare
- Positions not ready
- Positions waiting
- Positions on ACD calls
- Positions on DN calls

4. In the Custom Headings field, enter the headings for the columns on a single line as shown. Type spaces in the positions shown with the “^” character:

```
ASA ^ SL%A ^^NS ^^ABN ^^^ >T ^^^^^Q ^^AGT ^ SPARE ^^BUSY ^^IDLE
    ^^ACD ^^DN
```

5. Press the **Commands** softkey. Choose **Save as a new personal quadrant**. Press **Enter**.

6. Select **Exit (without saving changes)**. Press **Enter**.

7. Exit each menu until you return to the main menu. Log out.

Define a screen format for queue statistics - Agent Blending monitors statistics displayed in a specific format. This step defines the display format for the quadrant defined in Step 3. Log into Meridian MAX using the MIS ID and password for the Agent Blending supervisor account.

Perform the following steps:

1. Select **Display Definition**, then Screen Definition.

Blending and ACD configurations

2. Select or type values for each field exactly as shown in the following table.

Field	Value
Statistics Group	ACD-DN Statistics
Screen Name	MIS Statistics
Upper Left	DSI IICB Quadrant

3. Press the **Commands** softkey. Select **Save as a new personal screen**. Press **Enter**.

4. Select **Exit (without saving changes)**. Press **Enter**.

5. Exit each menu until you return to the main menu. Log out.

Set the account to display queue statistics - Agent Blending monitors statistics available as menu item 2 on the Supervisor Menu. This step sets up the supervisor account created in Step 1 to include the statistics display created in Step 4 as menu item 2. Log into Meridian MAX using an account with full supervisory privileges (not the account you created in Step 1).

Perform the following steps:

1. Select **Enter System Administration Mode**. Press **Enter**, then type your password.
2. Select **Parameter Administration**, then **Supervisor Definition**.
3. Press the **Commands** softkey. Select **Read existing supervisor definition**. Press **Enter**.
4. Select the supervisor MIS ID created in Step 1. Press **Enter**.
5. Press the **Select No Command** softkey.
6. Position the cursor in the Default Queue Display field. Press the **Options** softkey and choose **MIS Statistics**. Press **Enter**.
7. Press the **Commands** softkey. Choose **Save changes to the displayed** supervisor definition. Press **Enter**.
8. Select **Exit (without saving changes)**. Press **Enter**.
9. Exit each menu until you return to the main menu. Log out.

Verify the account configuration - After completing steps 1 through 5, the Meridian MAX account should be ready for Agent Blending. This step verifies the configuration of the Agent Blending supervisor accounts:

1. To verify the account configuration, check the following screens:
 - Supervisor Menu
 - Queue Statistics Display
 - Configuration Control Menu

**CAUTION:**

Agent Blending logs in and selects menu items by number and data import statistics from the quadrant defined. If menu items or screen positions are not exactly as shown, Agent Blending will not function.

2. Log into Meridian MAX using the MIS ID and password for the Agent Blending supervisor account, then perform the following checks.

Supervisor menu checks - Verify that the name on line one is Digital Systems, Intl. (including punctuation). Check that items 2 and 9 on the menu match the following screen. Modify the supervisor account configuration, if necessary.

Queue statistics display checks - Choose item 2, **Queue Statistics Display**, then press **Enter**. In the Queue Statistics Display, check that the display is MIS Statistics —Global View. Check that each field begins in the column shown in the following illustration. Modify the quadrant definition and screen display definition, if necessary.

Configuration control menu checks - Return to the Supervisor Menu. Select item 9, **Configuration Control**, then press **Enter**. In the Configuration Control Menu, check that item one 1 is Exit and item 2 is Change Position Assignments & Parameters. Modify the supervisor account configuration, if necessary.

PINNACLE 5ESS

PDS supports the PINNACLE 5ESS switch with the PINNACLE ACD Generic 5E9 or newer software. It supports Operator Services Position System (OSPS) or Business and Residence Custom Services (BRCS) stations. For Agent Blending to either acquire or release an agent, the agent logs on to both the PINNACLE ACD and the PDS.

PINNACLE 5ESS terminology

The following terms are specific to PINNACLE 5ESS:

Call Queue - A destination for call routing, defined by an ACD address. A call queue can be an Agent Blending domain.

Queue ID - The ACD address associated with a call queue. Queue IDs are Agent Blending domain addresses.

Queue Pilot Number - The ACD extension associated with an ACD address. Queue pilot numbers are Agent Blending domain extensions.

Servung Team - A group of agent identifiers for agents who work on the same task. PINNACLE 5ESS can route calls to the serving team for a call queue. Agent Blending inbound agents

belong to an inbound serving team. Agent Blending outbound and blend agents belong to an acquire serving team.

Agent Blending configuration

During the setup process, you specify the system settings, which call queues to treat as domains, how to group domains, and each domain group's control method and parameter values. Your Avaya representative configures the Agent Blending software to match your specifications.

The following values are needed to set up PDS:

- TCP/IP address of PINNACLE 5ESS
- Your PINNACLE 5ESS customer name
- Your PINNACLE 5ESS configuration ID
- Your PINNACLE 5ESS subscription ID

For more information on these parameters, see your PINNACLE documentation.

Domains - Agent Blending for PINNACLE 5ESS monitors call queue event messages for the types of domains shown below.

- Inbound Domain - Receives inbound calls from customers
- Acquire Domain - Receives acquire calls from the PDS.

Configuring domains on the PDS - Provide the following information for each domain you want Agent Blending to monitor:

- Queue ID (domain address)
- Queue pilot number (domain extension)
- Domain type (inbound or acquire)

Domain groups - Each domain belongs to a domain group. Agent Blending for PINNACLE 5ESS expects to compile statistics for three types of domain groups: Predictive Agent Blending, Proactive Agent Blending, and Outbound Agent Blending.

Specify the following information for each domain group:

- Domain group name
- Domain group type
- Domain group settings

Follow these rules when assigning domains to domain groups:

- A domain can belong to only one domain group.

- To configure the system for Predictive Agent Blending, set up a Predictive Agent Blending domain group. It can be ASA or SL. Assign one acquire domain and at least one inbound domain to the group.
- To configure the system for Proactive Agent Blending, set up a Proactive Agent Blending domain group and assign one acquire domain and at least one inbound domain.
- To configure the system for Outbound Agent Blending only, set up an Outbound domain group and assign only an acquire domain.

PINNACLE 5ESS configuration

Configure serving teams, call queues, and call queue event messaging on PINNACLE 5ESS to work with Agent Blending.

Servicing teams - On PINNACLE 5ESS, define one servicing team for agents who handle outbound calls and at least one servicing team for agents who handle inbound and outbound calls.

Call queues - For call queues that are part of a Predictive or Proactive Agent Blending domain group:

- Configure all inbound domains to route calls to the inbound servicing team (if any) and reroute excess calls to the acquire servicing team.
- Do not configure a delay in rerouting calls to the acquire servicing team.
- Configure all acquire domains to route calls to the acquire servicing team.

For call queues that are part of an Outbound Agent Blending domain group:

- Configure one servicing team as the acquire servicing team.
- Configure the domain to route calls to the acquire servicing team.

Call queue events - Configure your PINNACLE 5ESS to send only the events listed in the following PINNACLE 5ESS inbound event message tables. Use one of the following tables, depending on your stations.

Blending and ACD configurations

The following table shows the PINNACLE 5ESS inbound event messages for OSPS stations:

Code	Label
Q	QUEUE
c	DAANSW
B	BUSY
C	INCALL
U	INT_SETUP
I	LOGOUT
a	VECABAND
d	INDISC
R	READY
G	INT_CONF_SETUP_COMPLETE

Agents, calls, and logons

The following table summarizes how agents log on to the PDS and PINNACLE 5ESS system. It is based on the calls they handle and whether you want Agent Blending to monitor the calling activity and calculate statistics on the call activity.

Call type	Monitored by Agent Blending	PDS logon	PINNACLE 5ESS logon
Inbound only	No	N/A	Joins an inbound service team that is not an Agent Blending domain.
Inbound only	Yes	N/A	Joins an inbound service team that is an Agent Blending domain.
Outbound and inbound	Yes	ACD agent	Joins an acquire service team associated with an acquire domain in an Agent Blending Predictive or Proactive domain group.
Outbound only	Yes	ACD agent	Joins an acquire service team associated with acquire domain in an Outbound Agent Blending domain group.
Outbound only	No	Outbound agent	N/A

ROLM 9751 CBX (ROLM 9005)

PDS supports the Siemens ROLM 9751 CBX, release 9005 (ROLM 9005).

ROLM 9005 terminology

The following terms are specific to ROLM 9005.

Directory Number - An ACD address or extension associated with an ACD-defined group (such as an agent group or a hunt group) or with a device such as a telephone or a Voice Response Unit (VRU) port.

Pilot Number - A Directory Number associated with a group of extension numbers that comprise one ACD group. Agent Blending uses pilot numbers as domain addresses. It uses the dummy hunt group's pilot number as the domain extension.

ACD Group or Agent Group - A group of agent extensions that receives calls from the same pilot number. Each ACD group has its own telephones and members.

Dummy Hunt Group - A memberless hunt group defined on ROLM 9005. It unconditionally forwards calls to an agent group. Agent Blending requires dummy hunt groups to collect call-progress event messages. It uses the dummy hunt group's pilot number as the auxiliary domain's extension number.

Class of Service - A code indicating the features, extensions, and trunk access available to an ACD address. Agent Blending uses agent groups with the CallPath class of service.

Call-progress Event - Any change in a call's state in ROLM 9005. CallBridge passes call-progress event messages from ROLM 9005 to CallPath. Call-progress event messages provide the information Agent Blending needs to acquire and release agents.

Agent Blending configuration

During the setup process, you specify the system settings, which call queues to treat as domains, how to group domains, and each domain group's control method and parameter values. Your Avaya representative configures the Agent Blending software to match your specifications.

Keep the following items in mind when preparing to install Agent Blending with your ROLM 9005:

- ROLM 9005 documentation refers to the switch as a CBX. PDS documentation refers to a PBX. The two terms are synonymous.

Blending and ACD configurations

- The Computer Telephony Integration (CTI) software for ROLM 9005 is CallBridge Link Manager (CallBridge).
- CallBridge must be configured correctly for Agent Blending to function.
- Agent Blending requires CallPath.
- Agent Blending communicates with CallPath as a client running a CallPath application. Agent Blending uses the CallPath Monitor function to monitor call-progress event messages.

Throughout this chapter, the ROLM9005 PBX, the ACD, and the CTI are referred to as ROLM 9005.

Agent Blending settings - To configure Agent Blending to work with your switch, your Avaya representative needs the following values:

- TCP/IP address for the CallPath server
- Host or data source name
- Pilot Numbers and Directory Numbers for each domain to be set up on Agent Blending

Domains - Agent Blending for the ROLM 9005 expects to receive call-progress events for three types of domains: inbound, acquire, and auxiliary.

- An Inbound Domain is a domain that receives inbound calls from customers.
- An Acquire Domain is a domain that receives acquire calls from the PDS.
- An Auxiliary Domain is a dummy hunt group for an agent group that is either an inbound or acquire domain.

Domain groups - Agent Blending for ROLM 9005 expects to compile statistics for three types of domain groups: Predictive Agent Blending, Proactive Agent Blending, and Outbound Agent Blending. Agent Blending agents that handle inbound and outbound calls work in a Predictive or Proactive Agent Blending domain group. Agents that handle outbound calls work in Outbound Agent Blending domain groups.

Specify the following information for each domain group:

- Domain group name
- Domain group type
- Domain group settings

Follow these rules when assigning domains to domain groups:

- A domain can belong to only one domain group.
- To configure the system for Predictive Agent Blending, set up a Predictive Agent Blending domain group. It can be ASA or SL. Assign one acquire domain and at least one inbound domain to the domain group.

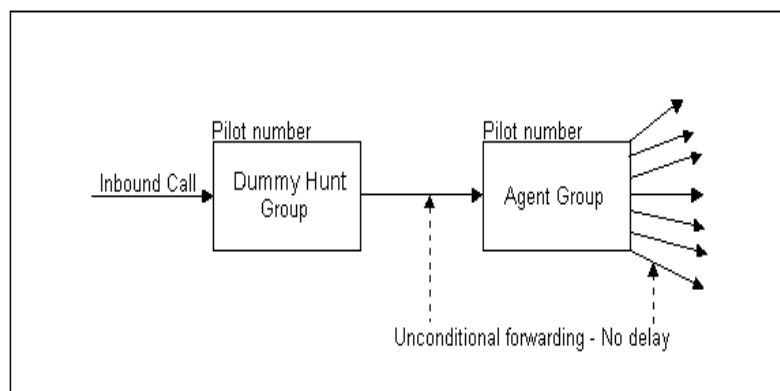
- To configure the system for Proactive Agent Blending, set up a Proactive Agent Blending domain group and assign one acquire domain and at least one inbound domain.
- To configure the system for Outbound Agent Blending, set up an Outbound domain group and assign only an acquire domain.
- Assign auxiliary domains to the same domain group as the domains from which they receive transfer calls.

ROLM 9005 configuration

To set up ROLM 9005 for Agent Blending:

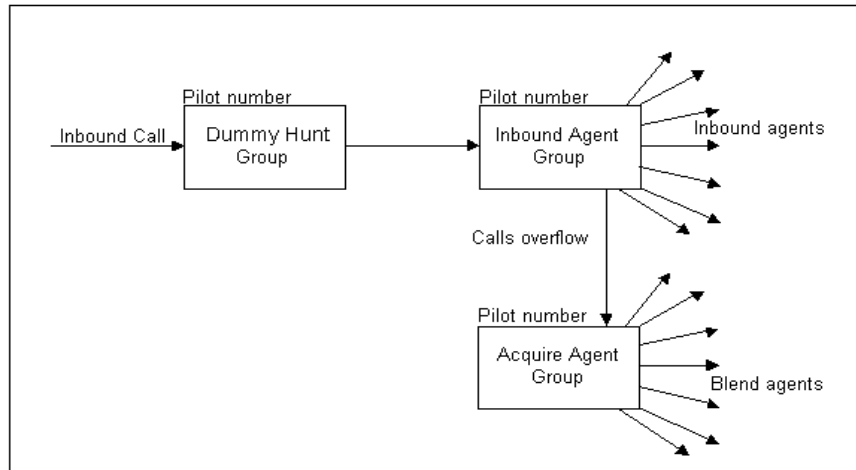
- Define agent groups for inbound calls (inbound agent groups).
- Define agent groups for both inbound and outbound calls or outbound calls only (acquire agent groups).
- Associate each agent group with a dummy hunt group.
- Enable auto answer.
- Define agent group and dummy hunt group pilot numbers with the CallPath class of service (CPTH).

Agent groups - Agent Blending expects agent groups set up as Agent Blending domains to behave as inbound or acquire domains. The domain type depends on how you define them on ROLM 9005 and how you configure Agent Blending to group them in domain groups. An agent group configured as an inbound domain has inbound agents associated with it. Each inbound agent group receives inbound calls as shown in the following illustration.

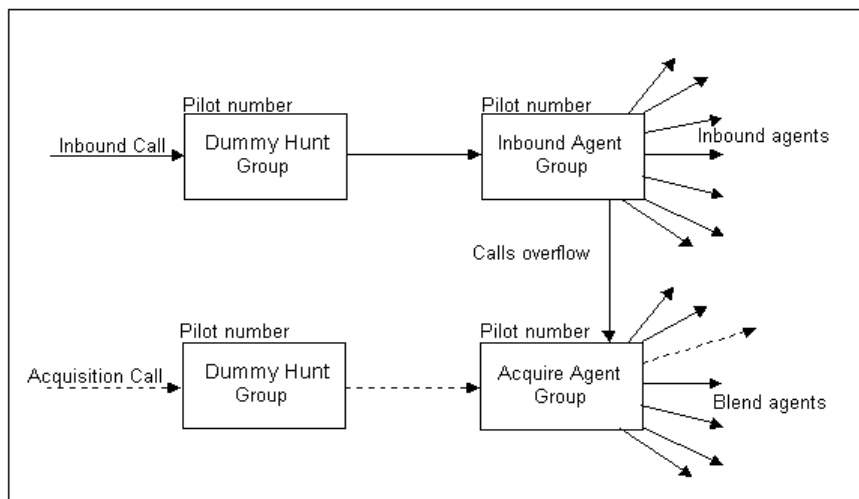


Blending and ACD configurations

An agent group configured as an acquire domain can have blend agents or outbound-only agents associated with it. An agent group with blend agents associated with it receives overflow calls from one or more inbound agent groups as shown in the following illustration.



To acquire a blend agent, Agent Blending tells the PDS to place a call to the acquire agent group. This call appears as an inbound call to ROLM 9005, placed to the pilot number of the dummy hunt group associated with the acquire agent group.



Use the following guidelines to tell ROLM 9005 to route calls to Agent Blending domain groups:

- Define at least one inbound agent group for inbound agents (if any).
- Define at least one acquire agent group for blend agents.
- Configure all inbound agent groups included in the Agent.
- Blending domain group to send overflow calls to the acquire agent group.
- Do not configure a delay in sending overflow calls to the acquire agent group.
- Do not configure the acquire agent group to reroute overflow calls.

An Agent Blending Outbound domain group contains one or more acquire agent groups. When Agent Blending starts, it directs the PDS to place one call to each acquire agent group for each agent. PDS acquires an agent for outbound calling when the agent logs in and releases the agent when the agent logs off.

For Agent Blending Outbound domain groups on ROLM 9005:

- Set up one or more acquire agent groups.
- Do not set up the acquire agent group to reroute overflow calls.

Dummy hunt groups - ROLM 9005 and CallPath use dummy hunt groups to send detailed call-progress event messages to Agent Blending. To tell Agent Blending when an inbound call enters a queue, configure a dummy hunt group to forward calls unconditionally to an agent group.

To set up a dummy hunt group on ROLM 9005:

1. Define a hunt group pilot number.
2. Define the hunt group as memberless.
3. Set up a routing table for the hunt group pilot number with one step.
4. Define the step in the routing table to forward calls to an agent group pilot number.

Note:

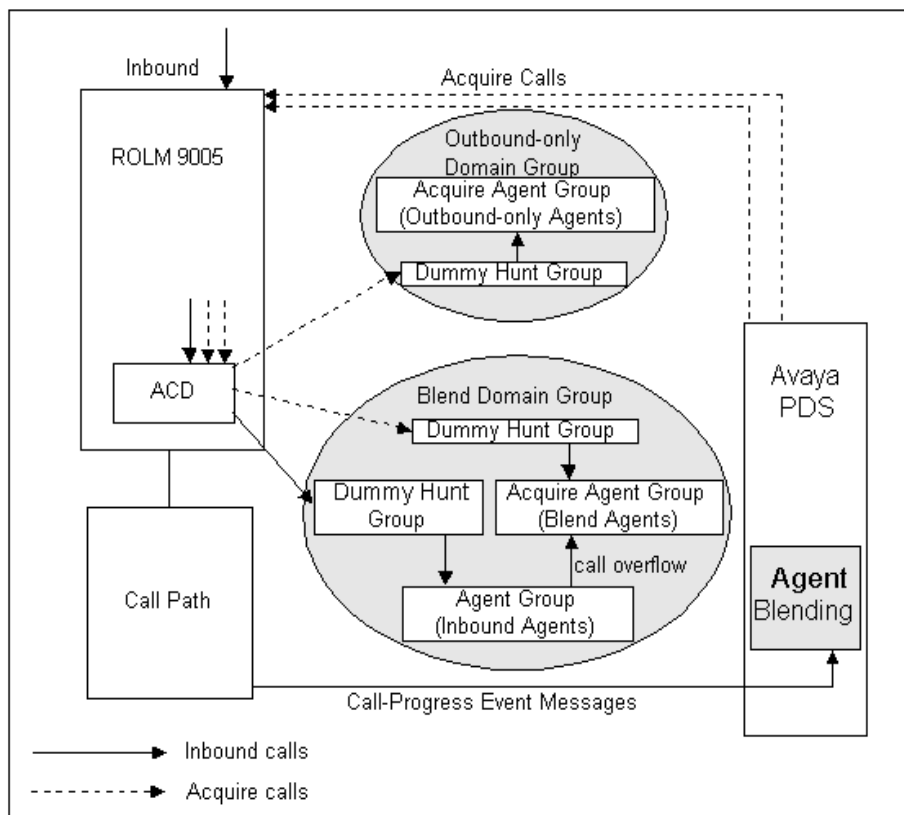
A dummy hunt group does not cause a noticeable delay when connecting customers with agents.

Completing the configuration - After completing the agent group and dummy hunt group configuration, make sure that you defined all agents to always operate in automatic answer mode or (if your agents are using ROLM 9005 telephones) set the AUTO/MAN button to AUTO for all agent telephones.

Finally, define all pilot numbers for each agent group and dummy hunt group to use the CallPath class of service. This class of service enables Agent Blending to receive complete call-progress

Blending and ACD configurations

event messages. The following illustration represents routing, forwarding, and messaging between the PDS and ROLM 9005 system in a completed Agent Blending installation.



Agents, calls and logons

The following table summarizes how agents log on to the PDS and ROLM 9005 system. It is based on the calls they handle and whether you want Agent Blending to monitor the calling activity and calculate statistics on the call activity.

Call type	Monitored by Agent Blending	PDS logon	ROLM 9005 logon
Inbound only	No	N/A	Logs on normally. ACD administrator assigns an agent telephone number to an agent group that is not associated with an Agent Blending Predictive or Proactive domain group.
Inbound only	Yes	N/A	Logs on normally. ACD administrator assigns an agent telephone number to an agent group associated with an inbound domain in an Agent Blending Predictive or Proactive domain group.

Call type	Monitored by Agent Blending	PDS logon	ROLM 9005 logon
Outbound and inbound	Yes		Logs on normally. ACD administrator assigns an agent telephone number to an agent group associated with an acquire domain in an Agent Blending Predictive or Proactive domain group.
Outbound only	Yes		Logs on normally. ACD administrator assigns an agent telephone numbers to an agent group associated with an acquire domain in an Agent Blending Outbound domain group.
Outbound only	No		N/A

CallPath documentation

In addition to your ROLM 9005 documentation, you may need CallPath specific information to configure CallPath for Agent Blending. For information on installing and configuring the ROLM 9005 9751 for CallPath and the CallPath SwitchServer or CallPath Server, refer to the following documentation from IBM 1:

- Reference for ROLM 9005 9751 CBX (Release 9005); IBM part number SC38-3056-02.
- CallPath Server Planning, Installation, and Problem Determination Guide; IBM part number SC31-6242-02.
- CallPath Services Using CallPath SwitchServer/2; IBM part number SC34-2406-03.

Spectrum

PDS supports Rockwell Spectrum with Transaction Link. This guide refers to the system as Spectrum.

Spectrum terminology

The following terms are specific to Spectrum.

Agent Group - A collection of one or more agents, based on equivalent skills or a specific call center need. In Spectrum, agents may have a primary and a secondary group assignment; however, the PDS requires that agents belong to only one group. In addition to the agent's skill level, you must assign agents to groups as inbound or acquire. Inbound agents take only inbound calls. Acquire agents take inbound and outbound calls, or they can be outbound-only.

Application - The PDS treats applications as domains. In Spectrum, incoming calls are routed to applications. An application is a type or category of call you want handled in a similar way. Applications may include:

- Company functions (for example, Customer Service, Accounts Payable)
- Special skill groups (for example, bilingual or technical troubleshooters)
- Types of products (for example, Savings, Checking Accounts, Mortgages)

For each application, the Spectrum tracks performance data such as average speed to answer, number of calls offered, and average handling time.

Associate each application with an Application Telescript. The telescript contains a set of instructions for handling calls. For Agent Blending, it queues agent groups, places calls in wait queues, and allows the PDS to track the call while it is on the Spectrum.

Application Number (also called the Application ID) - Assign an Application Number in Applications Parameters when you create the Spectrum application. The Application Number is used as the domain address in Agent Blending.

Application Directory Number (DN) - Assign an Application Directory Number in Applications Parameters when you create the Spectrum application. When dialed, this number calls the application. The Application Directory Number is used as the domain extension in Agent Blending.

Class of Service (COS) - A collection of attributes associated with agents and devices within the Spectrum. One of the class of service attributes is the Host Transaction feature. Host Transaction controls whether the Spectrum generates call progress messages on the Transaction Link for the associated agent or device. Agent Blending requires that you enable the Host Transaction feature.

Host - The host for the Spectrum is the PDS.

Provisioning - A set of actions that add, alter, or delete system parameters. In PDS documentation, “configuring” has the same meaning as “provisioning” in Spectrum documentation.

Telescript - A user-programmable sequence of steps associated with various call routing points within the Spectrum. During inbound call routing, error processing, and call queuing, the Spectrum invokes Routing, Intercept, and Application Telescripts. Feature Telescripts operate as subroutines for the other telescript types.

Configuring an Application Telescript to route to the desired agent groups is key to making Agent Blending work with Spectrum.

Transaction Link - Spectrum's name for its Computer Telephony Interface (CTI) link. Transaction Link is a communications channel between the Spectrum and the PDS. It operates over an X.25 or TCP IP transport facility.

trunk Group - A collection of trunk ports that have common processing characteristics, such as ANI and DNIS. One of the characteristics is the Host Transaction Link feature. It controls whether Spectrum generates call progress messages for calls associated with the trunk group members. Enable this feature to allow the PDS to monitor calls on the Spectrum.

Agent Blending configuration

To allow Ethernet access to Spectrum, all Agent Blending systems require allocation of a separate subnet within the corporate LAN. The PDS needs the following information about Spectrum:

- IP Address and host name of the TLLAN ports on Spectrum.
- The PDI III card port numbers configured for TLLAN. This is the TCP port to which the PDS will connect.

Domains - Agent Blending treats Spectrum applications as Agent Blending domains. Before configuring Agent Blending, set up Spectrum Applications, Application Telescripts, and Agent Groups. Then, set up an Agent Blending domain for each Spectrum Application that Agent Blending recognizes as a domain. Set up inbound and acquire domains. Set up an inbound domain for a Spectrum Application that routes incoming calls to Spectrum agent group(s). The Spectrum agent groups contain only inbound agents (inbound-only agent groups and acquire agent groups).

Set up an acquire domain for a Spectrum Application that routes calls to Spectrum agent group(s). The groups contain only ACD blend agents (acquire agent groups).

Domain groups - A domain group contains one or more domains. During site preparation, identify which domains are grouped and which control method to use with each domain group.

Each domain group must be defined as one of four types:

- Outbound
- Predictive-(ASA)
- Predictive-(SL)
- Proactive

Spectrum configuration

Contact your Avaya representative to obtain the following information for the PDS CPU:

- TCP/IP address
- Host or data source name (usually named cpu1.)

Contact your Rockwell representative to obtain the following information:

- IP Address and host name of the Spectrum switch.

Blending and ACD configurations

- PDI III card port number configured for TLLAN (the TCP port to which the PDS will connect)
- Whether agents have the automatic Return to Call Work feature enabled in their Class of Service (Agent Blending works better if the feature is enabled).Overview

For Spectrum to work with Agent Blending, you must properly configure Transaction Link. Transaction Link is part of the Spectrum Call Processing subsystem. The PDS monitors the transaction link for unsolicited call progress event messages. This enables the PDS to track the status of calls on the Spectrum. The Call Processing Software Subsystem controls the Transaction Link Feature Group; it uses the X.25 data link provided by the Peripheral Data Interface (PDI) card or the Ethernet data link provided by the PDI-III card. Agent Blending only supports connection to the transaction link using the Ethernet data link.

To access Transaction Link features, configure Spectrum with:

- Class of Service (COS)
- Trunk Group (TRKGRP)
- Serial Data Port (SDP)
- Device parameters

Call Processing Software Subsystem - The Call Processing Software Subsystem controls the Transaction Link Feature Group; it uses the X.25 data link provided by the Peripheral Data Interface (PDI) card or the Ethernet data link provided by the PDI-III card. Agent Blending only supports connection to the transaction link using the Ethernet data link.

To access Transaction Link features, configure Spectrum with:

- Class of Service (COS)
- Trunk Group (TRKGRP)
- Serial Data Port (SDP)
- Device parameters

You can use TL1 commands or ICS menus to configure the parameters associated with Transaction Link. You enter TL1 commands from a maintenance terminal or an ICS workstation. (For help with TL1 commands, see Spectrum Command Reference Volume. For help using the ICS, see Spectrum InfoView Management System.)

Although your Spectrum system administrator or representative should complete the following steps, this guide contains additional information to help you understand the process.

The following references may be helpful:

- Spectrum Transaction Link Implementation Guide
- Spectrum Command Reference Volume

Configuring the PDI III card to support transaction link - The PDI III card provides a connection to a standard LAN Ethernet/ IEEE 802.3 LAN using 10BASE-T cable. (LAN media other than 10Base-T can be used with a 10Base-T converter.)

1. Configure Port 2 of the card as a Serial Data Port (SDP). Set the device type as LAN. Configure one or more of the LAN Serial Data Ports for TLLAN operation. The port numbers are needed to set up Agent Blending.
2. Ports 5 through 24 of the card are pseudo-ports. Pseudo-ports are assigned to ICS workstations connected to the LAN port of the card. Up to 20 ICS workstations can be assigned to a PDI III card.
3. To configure the card, use the ENT-SDP or ED-SDP TL1 command. The Network Address, Network Mask, and Default Route are associated with this port. The recommended format for the Network Address is provided in the Spectrum LAN Installation document.

Configure trunk groups (TRKGRP) using ICS - Enable the Host Transaction Link feature for each Trunk Group that will receive incoming calls for applications monitored by PDS. Configure at least one Trunk Group to allow the Host Transaction Link. This allows Spectrum to generate call progress messages on the Transaction Link. You can configure Trunk Groups using ICS or TL1 commands.

Use the following procedure to configure Trunk Groups using ICS.

1. Select **Routing > Trunk Assignments > Trunk Group**.
2. Select **Yes** for **Allow Host Transaction Link**.

Configure trunk groups (TRKGRP) using TL1 commands - Use the following procedure to configure Trunk Groups using TL1 commands.

1. Enter **ENT-TRKGRP** or **ED-TRKGRP**.
2. Set HOSTFLAG= Y HOSTFLAG is Host Transaction Link Flag. The default is N.

Define Class of Service (COS) - To access Transaction Link features, configure a Host Transaction feature in an agent's class of service for each agent who will work with

Agent Blending. This will allow each agent, supervisor, and IVR assigned to the Class of Service to access Transaction Link. In addition, enable the automatic Return to Work feature. You define a Class of Service using ICS or TL1 commands.

Use the following procedure to define Class of Service using ICS.

1. Select **System > Class of Service**.
2. Select **Yes** for **Allow Host Transaction feature**.
3. Select **Yes** for **Return to Call Work**.

Define Class of Service (COS) using TL-1 commands - Use the following procedure to define Class of Service using TL1 commands.

1. Enter **ENT-COS** or **ED-COS**.

2. Set CALLORIG = **Y**. CALLORIG is Call Origination state, when enabled it allows Return to Call Work. The default is N.
3. Set HOSTFLAG = **Y**. HOSTFLAG is Host Transaction Link Flag. The default is N.

Define agent groups using ICS - Although Spectrum allows agents to belong to a primary and a secondary agent group, the PDS requires that agents belong to only one group. In addition to skill sets, define agent groups based on whether the agents will be inbound or acquire. Inbound groups take only inbound calls. Acquire groups can take inbound and outbound or only outbound calls. Define an agent group using ICS or TL1 commands.

Use the following procedure to define Agent Groups using ICS.

1. Choose **Staffing > Agent Groups**.
2. Define the parameters. There are no special requirements.

Define agent groups using TL1 commands - Use the following procedure to define agent groups using TL1

commands.

1. Enter ENT-AGRP or ED-AGRP.
2. Define the parameters. There are no special requirements.

Create an application telescript using ICS

Create an Application Telescript using the ICS, TL1 commands, or the Telescript Graphical Editor.

Application Telescripts direct calls to agent groups capable of providing the services required for that application (such as billing, repair, and sales). The application calls the Application Telescript.

- **Inbound Domains** - When designing telescripts for use with Agent Blending Inbound Domains, use the multiple queue feature of the QUEUE AGENT GROUP command. This allows you to list multiple agent groups. For inbound domains, list one or more inbound agent groups and at least one acquire agent group.
- **Acquire Domains** - If the application is an Agent Blending Acquire Domain, include only one acquire agent group. Do not include an inbound agent group. Spectrum must queue calls to ACD blend agents only.

Complete an Application Telescript for each domain you want Agent Blending to recognize.

1. In the **InfoView Control System** main window, double-click the **Script Management Facility** task icon.
2. Name the telescript. This allows you to reference the telescript by name instead of number.
3. Use the script steps options to add a QUEUE AGENT GROUP step.
4. Add an INFORM HOST CALL STATUS step immediately after

5. QUEUE AGENT GROUP.
6. Verify the script.
7. Close the script.
8. Activate the script. (You must activate the script before you can assign it.)

Create an application telescript using TL1 commands - On the supervisor terminal, telescripts are known as vectors.

Use the following procedure to create an Application Telescript using TL1 commands.

1. Name the telescript. This will allow you to reference the telescript by name instead of number (ED-VECT-APPL).
2. Add QUEUE AGENT GROUP step. (To add steps, use ENT-VSTEPAPPL.)
3. Add an INFORM HOST CALL STATUS step immediately after the QUEUE AGENT GROUP step.
4. Verify the script (VERIFY-VECT-APPL).
5. Close the script (CLOSE-VECT-APPL).
6. Activate the script. Activate the script before assigning it (ACT-VECTAPPL).

We recommend a minimum of two telescripts for the PDS application:

- an inbound script
- an acquire script

Examples - In the following examples, all agents handling inbound-only calls belong to group 101, the inbound group. All agents handling inbound and outbound calls belong to group 102, the acquire group.

- Application Telescript 20 (inbound calls) - Application 20, using Application Telescript 20, handles all inbound calls.

Step	Description
QUEUE AGENT GROUP 101 102	Simultaneously queues two agent groups: 101 and 102. Searches for longest idle primary agent in either group. If an agent is available, Spectrum assigns the call to that agent. If no agents are available in either group, Spectrum queues the longest available agent whose secondary assignment is agent group 101 or 102.
INFORM HOST CALL STATUS	CALL STATUS Allows the PDS to track calls in Spectrum.
DELAY FOREVER	Leaves the call permanently in queue waiting for the next available agent.

Blending and ACD configurations

- Application Telescript 21 (acquire domain) - Application 21, using Application Telescript 21, handles PDS acquire calls.

Step	Description
QUEUE AGENT GROUP 102	Queues only agent group 102. Spectrum searches Agent group 102 for the longest idle primary agent. If an agent is available, Spectrum assigns the call to that agent. If no agents are available in group 102, Spectrum queues the longest available agent whose secondary assignment is agent group 102.
INFORM HOST CALL STATUS	Allows PDS to track calls in Spectrum.
DELAY FOREVER	Leaves the call permanently in queue waiting for the next available agent.

To use telescripts for more complex purposes, use other applications to handle the complex decisions prior to routing the calls to the applications.



CAUTION:

Do not include any other routing in the acquire domain telescripts. Do not place overflow or other queue-related routing in the inbound Application Telescript.

Define an application using ICS - When creating a Spectrum application, assign an Application Number (domain address) and an Application Directory Number (domain number). Use ICS or TL1 commands to create the application.

Use the following procedure to define an Application using ICS

1. On the Supervisor Terminal, navigate to the Main Command window, select **Routing > Applications**.
2. Enter the Application Information.
3. In **Schedule Type**, select **Application Scripts**.
4. In **Auto Schedule** box, select Yes.
5. In the **Weekday** and **Weekend Schedule** boxes, enter the Script ID of the **Application Telescript** you designed for Agent Blending.

Note:

Before scheduling a telescript, it must be created and active.

Define an application using TL1 commands - Use the following procedure to define an Application using TL1 commands.

1. On the command line, enter **ENT-APPL** or **ED-APPL**.
2. Complete the parameters for application number, correlation tag, and directory number.
3. Enter AUTOSCHED = Y.

4. Enter SCHEDTYPE = APPL.
5. Enter the name or number of the Agent Blending Application Telescripts used for each schedule.

Note:

Before scheduling a telescript, it must be created and active.

Outbound Agent Blending

Outbound Agent Blending acquires agents to handle outbound calls as soon as they log on to the PDS and the Spectrum.

For a group of agents to handle only outbound calls, configure the outbound job on the PDS. You do not need to set up the agents as outbound agents on Spectrum. However, using Outbound Agent Blending on the PDS allows you to take advantage of Spectrum's special features such as detailed reports and least-costrouting.

Agents who are assigned to Spectrum as outbound-only agents cannot be acquired to take inbound calls. The PDS controls the calling list. The PDS acquires the outbound agent through Spectrum.

Setting up an outbound Spectrum job - Use the following procedure to set up an Outbound Spectrum job.

1. On Spectrum, set up one or more Application Telescripts that routes calls to only one acquire agent group (no inbound agent group).
2. On the PDS, set up one or more acquire domains.
3. On the PDS, set up an Outbound-only domain group.
4. Assign the acquire domain that you set up in step 2 to the Outbound-only domain group.
5. Set up the parameters on the PDS for an outbound job.

Setting up Predictive Agent Blending - Predictive Agent Blending agents log on to the Spectrum and the PDS. The agents immediately begin handling inbound calls. If the inbound traffic is low, the PDS acquires the Spectrum agents for outbound calls. When inbound traffic increases, the PDS releases the agents back to Spectrum to handle inbound calls.

Use the following procedure to set up Predictive Agent Blend.

1. On Spectrum, set up an Application Telescript that routes calls to one or more acquire agent groups and up to one inbound agent group.
2. On the PDS, assign the application associated with the telescript to a domain.
3. On Spectrum, set up one or more Application Telescripts that route calls to only one acquire agent group (no inbound agent group).
4. On the PDS, set up one or more acquire domains.

Blending and ACD configurations

5. In your PDS domain group configuration, select Average Speed to Answer (ASA) or Service Level (SL). Assign the domain you configured in step 2 to the domain group.
6. Set up the parameters on PDS for the outbound job. Spectrum controls the inbound side.

Setting up a Proactive Agent Blending job - When agents log on, the PDS immediately acquires them for outbound calling. When there is a call in the inbound queue, the PDS releases the first idle Spectrum agent to handle the call. As long as there are calls in the inbound queue, agents remain on the Spectrum handling inbound calls. When the inbound queue is empty, the PDS acquires all available Spectrum agents to handle outbound calls.

Use the following procedure to set up Proactive Agent Blend.

1. On Spectrum, set up an Application Telescript that routes calls to one or more acquire agent groups and up to one inbound agent group.
2. On the PDS, assign the application associated with the telescript to a domain.
3. On Spectrum, set up one or more Application Telescripts that route calls to only one acquire agent group (no inbound agent group).
4. On the PDS, set up one or more acquire domains.
5. In your PDS domain group configuration, select Proactive Agent Blending. Assign the domain to the domain group.
6. Set up the parameters on PDS for the outbound job. Spectrum controls the inbound side.

Agents, Calls, and logons

The following table summarizes how agents log on to the PDS and Spectrum system. It is based on the calls they handle and whether you want Agent Blending to monitor the calling activity and calculate statistics on the call activity.

Call type	Monitored by Agent Blending	PDS logon	Spectrum logon
Inbound only	No	N/A	Joins an inbound group that is not an Agent Blending domain.
Inbound only	Yes	N/A	Joins an inbound group that is an Agent Blending domain
Outbound and inbound	Yes	ACD agent	Joins an acquire group associated with an acquire domain in an Agent Blending Predictive or Proactive domain group.

Call type	Monitored by Agent Blending	PDS logon	Spectrum logon
Outbound only	Yes	ACD agent	Joins an acquire group associated with acquire domain in an Outbound Agent Blending domain group
Outbound only	No	Outbound agent	N/A

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