



Planning for Avaya Proactive Contact

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Chapter 1: Introduction

Purpose

This document provides information about the planning and prerequisites required for deploying Proactive Contact 5.1.

Intended audience

This document is intended for all customers, business partners, and Avaya Professional Services.

Revision history

Issue	Date	Summary of changes
1.0	Feb 2013	First issue.
1.1	April 2013	Updated the Product Compatibility section.
1.2	May 2014	Updated the capacity information.
1.3	November 2014	Updated the capacity information.

Related resources

Documentation

The following table lists the documents related to Proactive Contact 5.1. Download the documents from the Avaya Support website at <http://support.avaya.com>

Title	Description	Audience
<i>Using Avaya Proactive Contact Agent 5.1</i>	Provides detailed description of Avaya Proactive Contact Agent.	Agents of contact centers and all customers.
<i>Using Avaya Proactive Contact Supervisor 5.1</i>	Provides detailed description of the Avaya Proactive Contact Supervisor suite of applications.	Supervisors of contact centers and all customers.
<i>Avaya Proactive Contact 5.1 Overview</i>	Provides a detailed overview of Avaya Proactive Contact, capacities, and interoperability.	Avaya Professional Services and business partners, and all customers.
<i>Maintaining and Troubleshooting Avaya Proactive Contact 5.1</i>	Provides detailed information about hardware and software maintenance of Avaya Proactive Contact.	Avaya Professional Services and business partners and all customers.
<i>Avaya Proactive Contact Safety and Regulatory Information</i>	Provides information about safety regulations.	Avaya Professional Services and all customers.
<i>Administering Avaya Proactive Contact 5.1</i>	Provides detailed information about the operation of the Avaya Proactive Contact system through a Linux-based menu.	Administrators, design engineers, business partners, and all customers.

Training

The following courses are available on the Avaya Learning website at www.avaya-learning.com. Enter the course code in the **Search** field, and click **Go** to search for the course.

Course code	Course title
ASC00206WEN	Contact Center Intelligence
ASC00207WEN	Contact Center Automated
ATA00781VEN	Avaya Proactive Contact Solutions Basic Implementation
AVA001002H00	Avaya Proactive Contact Solution - Configuration
AVA00989H00	Avaya Proactive Contact Solutions - Basic System Supervisor
AVA01013WEN	Avaya Proactive Contact Solutions Overview
AVA01043H00	Avaya Proactive Contact Solutions - Basic Installation
AVA00990H00	Avaya Proactive Contact Solutions Advanced System Supervisor

Avaya Mentor videos

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Procedure

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- Click the name of a playlist to scroll through the posted videos.

Support

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Warranty

Customers who do not have an Avaya services agreement receive support in accordance with the Avaya standard Warranty Policy.

Avaya Global Services defines the support provided under Warranty for an Avaya Standard Warranty on software for 90 days and on hardware for 12 months.

For information about the standard Avaya warranty and support for Avaya Proactive Contact during the warranty period, see the Avaya Support website at <http://support.avaya.com> in **HELP & POLICIES > Policies & Legal > Maintenance and Warranty Information**.

Chapter 2: Implementation process overview

Overview

The Proactive Contact system integrates seamlessly with the operations of a call center. The Avaya project manager and the call center company complete the installation preparations during the project implementation phase.

Project kickoff

During the project kickoff phase, the company designates a project team and an Avaya project manager designates an Avaya project implementation team. The terms used for titles and team members represent typical teams. Use the information in this section to understand the teams. The Avaya vendor can structure teams differently. For more information, see the agreement documents.

The Avaya project manager develops a *Project Plan* and provides you with a *Site Preparation Checklist*.

Related Links

[Sales to delivery handoff](#) on page 11

[Avaya project team members](#) on page 12

[Major milestones](#) on page 13

[Project plan](#) on page 13

[Site preparation checklist](#) on page 14

Sales to delivery handoff

The project begins with a review of readiness. The Avaya project manager coordinates a meeting with the Avaya readiness team with the sales and technical teams to orient and align the delivery team to the customer requirements and expectations. The readiness team reviews the statement of work, bill of materials and all documentation to ensure completeness and accuracy to achieve the delivery goals. IP addresses are collected as part of site readiness process. The number of IP addresses depends on the products you purchased and your system configuration. Each person

who plans to attend the training classes at Avaya must complete the training schedule provided by the Avaya project manager. The training information helps training instructors to structure the classes to meet your needs.

Related Links

[Project kickoff](#) on page 11

Avaya project team members

The Avaya project manager puts together the members of the Avaya project team and works closely with the project team. The Avaya project team is the primary contact for the company. The Avaya project team answers questions about the Proactive Contact installation and ensures that your company receives the information required to successfully complete installation tasks.

The Avaya project team comprises the members of the project team to meet your needs. The following table describes the typical roles of team members:

Avaya project team members	Primary role
Avaya project manager	Conducts the project kickoff meeting and acts as your main contact throughout implementation. Coordinates activities, oversees the schedule, and works with you to determine how Proactive Contact can work in your environment.
Account executive	Manages the primary relationship between the Proactive Contact vendor and your company.
Technical System Integration Consultant (TSI)	Identifies all the technical connectivity requirements for your Proactive Contact implementation.
Integration consultant (IC)	Installs and tests your Proactive Contact dialer. Assists in the go-live phase. Provides onsite overview training for the system supervisors and agents as per the contract.
Application consultant (AC)	Conducts the specification workshop and gathers Proactive Contact specifications for the installation. Creates the system configuration based on the customer specifications prior to the install.

After your company and the Avaya representative form project teams, the Avaya project manager provides an Implementation Guide and develops *Project Plan* and *Site Preparation Checklist*. Your company assigns resources and tasks based on these documents and the recommendations of your project manager.

Related Links

[Project kickoff](#) on page 11

Major milestones

Each major milestone and the corresponding due date is specified in advance. To implement the project on schedule, the teams must meet the specified due dates.

The following table provides examples of major milestones for project managers:

Major milestones for	
Your project manager	Avaya project manager
Completes the worksheets and deliver them to the Proactive Contact project team.	Delivers a site preparation checklist to your project team.
Creates sample download files and delivers them to the Proactive Contact project team.	Completes the software specifications package.
Delivers the project plan.	Completes the Proactive Contact configuration.
Completes site preparations.	
Delivers upload test data to your project team.	

Related Links

[Project kickoff](#) on page 11

Project plan

Avaya designates a readiness team that includes those people who are responsible for the readiness preparations at the installation location for the Proactive Contact system. The readiness preparations include telephony, network, facilities, desktop, cable connections, and data source integration representatives. Avaya creates readiness documentation that you can use as a reference list for the readiness requirements. The technical details of the requirements are present in other sections of this document. The Avaya Project Manager schedules a technical call prior to the kickoff call to review the requirements. The readiness team asks any questions for any clarification needed and determines the earliest date when all customer provided readiness requirements can be delivered. Based on the date, the project plan and timeline is established. Prior to the deployment of the system, the Avaya readiness team does a final review to confirm that all requirements have been completed.

By establishing with the customer a readiness date as the initial project milestone, the project planning team can use this date, along with product deployment durations to build a meaningful, realistic project plan. you can schedule resources for implementation work based on this readiness date thereby eliminating resources from assignment to a project that is not ready to start, and better utilization of the overall resource capacity.

the Avaya Project Manager and Company Project Manager schedule a project kickoff call to introduce the project to the business team and stake holders of the company. An overview of the delivery process, milestones and system functionality is covered during that kickoff call.

Related Links

[Project kickoff](#) on page 11

Site preparation checklist

The Proactive Contact technical system integration consultant customizes the Site Preparation Checklist to fit your site-specific requirements. The checklist provides the detailed specifications required to prepare your site for Proactive Contact system integration.

For more information, see [Site Preparation](#) on page 14 on page 12.

Related Links

[Project kickoff](#) on page 11

Site preparation

Your Avaya project manager or technical system integration consultant works with you to determine your site preparation requirements which include:

- Providing a dedicated power circuit and ground wiring
- Installing Application Enablement Services, Proactive Contact with CTI option and Agent Blending
- Assuring Predictive Agent Blend connectivity
- Assessing and meeting space and environmental needs
- Ordering phone lines for outbound, inbound, transfer, and agent headset capabilities
- Creating and installing the correct connectors and cables
- Isolating your network traffic from Proactive Contact traffic
- Providing file transfer capabilities
- Installing and configuring workstations
- Installing and configuring Avaya WebLM server for Proactive Contact Licensing
- Setting up remote access using a dial-up, Secure Access & Control (SAC), or Secure Access Link (SAL)

Your Avaya technical system integration consultant provides *Site Preparation Checklist* that outlines specifics for your site. Provide the detailed information in the *Site Preparation Checklist* to your facility, network, cabling, or other team members, as appropriate, for preparation of the site prior to the installation. You must have the site ready two weeks prior to the installation start date to ensure timely completion of the project. Your Avaya Project Manager monitors the progress of these tasks on your weekly status calls to ensure progress toward the committed completion date.

Some site preparation tasks can require substantial lead time. Ensure that your project team closely monitors site preparation, which is critical for compliance with the project schedule.

For more information about safety and regulations, see *Safety and Regulatory Information for Avaya Proactive Contact*.

Software configuration specifications

At the specifications workshop, representatives from your company can discuss Proactive Contact options and their specifications with the Avaya application consultant. These specifications define the configuration of Proactive Contact software to meet the requirements of your call center.

To help the Avaya vendor assemble and test your new system, the Avaya application consultant gathers information about the following items:

Item	Description
Test data	This file is defined in the Proactive Contact design worksheets in the download file format. The test data file must include minimum of 100 data records.
File layout	This layout defines the structure of the information that is sent to Proactive Contact by Secure File Transfer Protocol (SFTP).
Completion codes	Each record is released with a code that you specify, depending on the outcome of the call.
Agent screens	The screens displayed to an agent when Proactive Contact makes a call to a customer. You can design the outbound and inbound screens.
Wait queue messages	The recorded messages that are played to customers when an agent is unavailable. You can specify different messages for different scenarios.

After you and the Avaya application consultant approve the specifications package, the project manager sends you a specification letter for your signature. At this point, the Proactive Contact project team starts configuring Proactive Contact. The involvement of your project team is minimal during this phase.

Related Links

[Wait queue sample messages](#) on page 15

[System and agent generated completion codes list](#) on page 16

Wait queue sample messages

The following table lists a sample wait queue message set.

Time in wait queue	Display message of a maximum of 20 characters
0 to 10 seconds	<i>How may I help you?</i>
10 to 20 seconds	<i>Thank you for waiting...</i>
20 to 30 seconds	<i>On hold for 30 seconds</i>

Time in wait queue	Display message of a maximum of 20 characters
More than 30 seconds	<i>I apologize...</i>

*** Note:**

For CTI dialers, the voice messages reside on the Announcement cards in Communication Manager.

Related Links

[Software configuration specifications](#) on page 15

System and agent generated completion codes list

The following table describes the agent-generated and system-generated completion codes available with Proactive Contact. During the specification process, specify the agent-generated codes to use.

Code	Name	Type	Description
0	NOTCALLED	system	The account is not called.
1	CODE1	system	Reserved for the system.
2	ERROR	system	The system detects an invalid phone number.
3	TIMEOUT	system	The system did not receive a dial tone.
4	HANG_PORT	system	The line was idle after the system dialed the phone number as displayed in the customer record.
5	NOTINZONE	system	The local time for the customer phone is outside calling hours.
6	MOFLASH_B	agent	Used for native voice and data transfer. An agent transfers a call to an inbound agent without remaining on the line in case of voice and data blind transfer.
7	HANG_TRANS	system	No agent is available for a supervisor transfer.
8	TDSS_HF_B	agent	ADAPTS API: The agent transfers a call without remaining on the call using the blind hook flash transfer.
9		system	Reserved for the system.
10		system	Reserved for the system.
11	BUSY	system	The system detects a busy signal.
12	CONTTONE	system	The system detects a continuous tone, such as a fax or a modem.
13	AUTOVOICE	system	The system detects an answering machine.
14	VOICE	system	Interim code when a person is on the line.
15	NOANSWER	system	The call was placed but not answered.

Code	Name	Type	Description
16	RINGING	agent	Can be user defined. Usually defines a phone call that was still ringing but was passed on to an agent.
17	CUSTHU	agent	Can be user defined. Usually defines situations when a customer hangs up while the call is in the wait queue, but the call is still passed to an outbound agent.
19	RECALL	agent	Can be user defined. Usually defined as a recall release.
20-34		agent	Customer-assigned codes that agents use.
35	CANCEL	system	Can be user defined. Usually defined as an agent-cancelled, managed call.
36	INTERCEPT	system	Special Information Tone (SIT) received call. This indicates an operator intercepted the call. For ISDN trunks, set as a D-channel signal.
37	NOCIRCUIT	system	SIT received. Indicates circuits were unavailable. For ISDN trunks, set as a D-channel signal.
38	DISCONN	system	SIT received. Indicates the call was a disconnected number. For ISDN trunks, set as a D-channel signal.
39	VACANT	system	SIT received. Indicates the call cannot be completed.
40	REORDER	system	The call results in a fast busy tone.
41	R_RINGING	system	Reserved.
42	LINEFAIL	system	A failure occurred on the phone line.
43	OP_RECALL	system	Operator set recall.
44	DTMF_V	system	DTMF tone detected.
45	HU_INB	system	The customer hangs up while in the inbound wait queue.
46	HU_OUT	system	The customer hangs up while in the outbound wait queue.
47	HANG_INB	system	Agent is unavailable for the inbound call.
48	HANG_OUT	system	Agent is unavailable for the outbound call.
49	OPDIED	system	The agent session ends abnormally.
50	R_HSONHOOK	system	The agent headset disconnects from Proactive Contact.
51-88		agent	Customer-assigned codes used by agents.
89	MANAGEDA	agent	Managed Dial: Managed non-connection A.
90	MANAGEDB	agent	Managed Dial: Managed non-connection B.

Code	Name	Type	Description
91	VIRTVOICE	system	Virtual Agent: Virtual message to VOICE, that is, to a person.
92	VIRTAUTOV	system	Virtual Agent: Virtual message to AUTOVOICE, that is, to a calling machine.
93	SOLD	agent	Sales Verification: Sold campaign.
94	VERIFIED	agent	Sales Verification: Sale verified.
95	UNVERIFIED	agent	Sales Verification: Sale not verified.
96		system	OFCOM compliance code.
97		system	Reserved for the system.
98	AORECALL	agent	Agent Owned Recall.
99		system	Reserved for the system.
100-999		agent	Customer assigned

*** Note:**

The completion code field is a three-digit field. You can define a maximum of 999 codes.

Related Links

[Software configuration specifications](#) on page 15

Training

Your system supervisor, project manager, and other representatives of your company can attend Proactive Contact training courses. These courses include an overview of Proactive Contact and hands-on training on using the system to prepare for and manage calling activity. In addition, the integration consultant provides a brief onsite review for trained supervisors and a train-the-trainer session so that supervisors can train agents.

Avaya Professional Services can provide a five-day onsite knowledge transfer for up to eight students on your system prior to production calling on request for a fee. If supervisors attend training at the Avaya University center, the Installation Consultant provides a 1-hour review of the materials covered in the courses before the system is taken into live production.

The Avaya Installation Consultant (IC) will demonstrate agent training to the supervisors for the standard agent interface or provide training on any custom Agent API that Avaya has developed for the customer. The Avaya IC does not offer training for agents or provide training for any non-Avaya developed agent interface.

To gain access to the available training courses and schedules, go to <http://www.avaya.com/learning>, and search for *Proactive Contact*.

Installation process

On the scheduled installation date, the Integration Consultant (IC) arrives at your site to complete the installation. The IC also tests Proactive Contact and conducts a review of the training that the system supervisors received.

The IC works closely with your project team to integrate Proactive Contact into your environment. Your project team must be available to answer questions related to the installation.

The installation process includes:

1. Setting up and testing the hardware
2. Installing and testing the software
3. Testing the network and telephony connections
4. Validating the file transfer procedure
5. Providing a brief review of the training the supervisors have completed and providing a train-the-trainer session to enable supervisors to train agents
6. Achieving live calling

The installation process ensures seamless integration with the existing call center environment. During the installation process, the personnel for facilities, cabling, phone lines, networking, hosting, and loading supervisor software to desktops must be available for assistance.

Related Links

[Onsite training](#) on page 19

[Live calling date](#) on page 20

[Transition conference call](#) on page 20

Onsite training

Onsite training is an optional contracted service from Avaya Professional Services (APS).

After the IC prepares your site for live calling, the IC can conduct a five-day knowledge transfer session for up to eight system supervisors. This onsite training is an optional, contracted service. This session covers the materials offered at the Avaya University for the Basic and Advanced System Supervisor courses. The agent training usually starts a week before live calling. The IC conducts the first session in the presence of system supervisors. The system supervisors then conduct the remaining sessions with assistance from the IC. This process ensures that the system supervisors are comfortable training new agents. Schedule the onsite agent training when the IC is present. Training can be conducted during normal business hours. When scheduling training, limit the number of agents to eight for each session.

The Proactive Contact training team does not provide training and support for the following third-party software:

- Microsoft Windows XP, Windows Vista, Windows 7, Windows Server 2008 SP2 Enterprise version

- Microsoft Office
- Crystal Reports

System supervisors and agents who are not familiar with these packages can attend additional training prior to the installation.

Related Links

[Installation process](#) on page 19

Live calling date

Usually during the second week of installation, Proactive Contact starts placing calls and receiving calls from customers.

During live calling, the IC identifies issues, if any, related to the installation. After the IC resolves issues, Proactive Contact is ready for daily calling operations.

The IC monitors Proactive Contact during daily operations. The Avaya project manager makes the transition conference call to the Avaya technical support representative, and the IC attends this call before leaving your site.

Related Links

[Installation process](#) on page 19

Transition conference call

The transition conference call introduces your project team to the Avaya customer support team. The support team is responsible for ongoing support. After the transition conference call your company directs all Proactive Contact customer support questions or concerns to this team. For more information, contact Avaya support for service and support details.

Related Links

[Installation process](#) on page 19

Chapter 3: Capacity information for Avaya Proactive Contact

Capacity and scalability specification

The following table provides information about various capacity parameters and their values for Avaya Proactive Contact:



Caution:

You must adhere to the maximum capacity limits mentioned for each parameter. If you exceed the prescribed limits, then the system might not function as expected.

Category	Parameter	Value	Notes
Agent	Name recall name length	39	—
Agent	Name length (characters) in English or CJK	8/3	Alphanumeric.
Agent	Headset ID length	13	—
Agent	Maximum number of agents on Avaya Proactive Contact with PG230 per dialer (T1/E1)	432/450	PG230 Enabled.
Agent	Maximum number of agents per pod (T1/E1) in a 10 dialer pod.	4320/4500	PG230 Enabled.
Agent	Maximum number of preview agents on Avaya Proactive Contact with CTI	300	CTI Enabled.
Agent	Maximum number of predictive agents on Avaya Proactive Contact with CTI	300	CTI Enabled.
Agent	Number of users on the system	32K	—
Agent Blending	Number of Vector Directory Numbers (VDNs) Avaya Proactive Contact with PG230 or Avaya Proactive Contact with CTI.	600/300	The limit is 300 for each switch. For Avaya Proactive Contact with PG230, tested limit is up to 600, and for Avaya Proactive Contact with CTI, the tested limit is 300.
Agent Blending	Number of logins	432/450	432 for T1 and 450 for E1.

Category	Parameter	Value	Notes
Campaigns	Number of active supported campaigns (single Dialer)	- Maximum 200 campaigns when AOR is turned off. - Maximum 100 campaigns when AOR is turned on. The maximum value decreases if the number of shadow jobs running are more than 100.	—
Campaigns	Number of active supported campaigns (Pod) for a 10 dialer pod	- Maximum 2000 campaigns when AOR is turned off. - Maximum 1000 campaigns when AOR is turned on. The maximum value decreases if the number of shadow jobs running are more than 1000.	—
Campaigns	Number of active supported campaigns (CTI)	- Maximum 200 campaigns when AOR is turned off. - Maximum 100 campaigns when AOR is turned on. The maximum value decreases if the number of shadow jobs running are more than 100.	Preview and predictive.
Calling List	Record size in bytes	8192	Maximum record size of a calling list on which you can run a job. The record size includes the user added fields, the Proactive Contact added fields in addition to the number of fields, in bytes.
Calling List	Maximum list size in gigabytes	2	Linux limit is 2 GB.

Category	Parameter	Value	Notes
Calling List	Calling list name length in English	15	The calling list name must only be in English and must be alphanumeric.
Calling List	Number of unique calling lists	999	—
Calling List	Maximum records	900000	—
Calling List	Number of fields	Limited only by the record length	Limited only by the record length which is 8192.
Calling List	Number of phone fields	10	—
Calling List	Sortable fields	10	—
Calling List	Phone field digits	20	—
Calling List	Post-update - maximum attempts stored in calling list	5	The maximum number of phones that post update can track is 9.
Calling List	Field Length	1024/75	1024, if the field is not to be viewed by Agent as a part screen. In calling list details, you can set more than 75 characters but you cannot select those fields in screenbuilder for viewing by the agent. You must perform hashing, indexing, sorting, and DNC only on the fields which have a length of less than or equal to 128 bytes.
Calling List	Index field- Campaign Update	40 bytes	The data in the index field must not exceed 40 bytes.
Character Length	Dialer host name in English	12	—
Character Length	DO NOT CALL group name in English or other languages	32/10	—
Character Length	Maximum name length of selection in English or other languages	20/15	—
Character Length	Maximum Job name length in English or other languages	20/15	—
Character Length	Job unit ID length	32	Single byte
Character Length	Job ID length	10	- The system generates the Job ID automatically. - The Job ID in the calling list has a fixed length of ten characters, and you cannot edit the ID.

Category	Parameter	Value	Notes
Character Length	Strategy name length in English and other languages	20/15	—
Character Length	Single message size	Agent-to- supervisor- 59 and supervisor-to-agent- 72	From Agent to Supervisor, displays only show on Jobmon.
Character Length	ANI/DNIS field length	15	Tested limit is up to 13.
Character Length	Tenant name in English and other languages	20/10	—
Database	Access	Read only	Chargeable ODBC access.
General	Line pools	50	—
General	Time zones	62	Configuration limit
General	Number of predictive blend gateways	10	—
General	Identification field length	255	The total length of 4 fields can be maximum 255.
General	Number of identification field	4	—
General	Completion codes	0–999	Of the 1000 completion codes, 31 are system codes or reserved codes. Supervisor cannot configure these codes.
General	Telephony script lines	6000	—
General	Screen size	23x80	The number of rows is 23 and the number of columns is 80.
General	Event service clients	20	—
General	Event service refresh in seconds	6	—
General	Internet Monitor refresh in seconds	30	—
General	Average backup size	15–GB	Includes 3 GB for lists and is based on 10% usage of the 148 GB drive.
General	Telnet/SSH sessions	Unlimited	—
General	Busy Hour Call Attempts (BHCA)	172000	—
General	Maximum Call Selection	80	Ensure that the value is synchronized with the maximum strategy.
General	Dialed digit support	19	—
General	The number of switches	10	—
General	Maximum number of tenant allocation	20	If a user is a part of the default tenant, then the user can be a part of only 19 other tenants. If the user is not a part of the

Category	Parameter	Value	Notes
			default tenant, then the user can be a part of only 20 tenants.
Hardware	Agent, outbound, inbound, and transfer	—	All can be on the same card. Minimum of 24.
Hardware	Total LPVC ports	384	128 per card and a maximum of 3 cards.
Hardware	Backup media	Tape/DVD/TPH/USB (Flash Memory Drive)	TDK DVD-R 16x 4.7–GB.
Hardware	The number of NICs	2	One NIC is used for your network, and the other NIC is connected to the PG230 switch.
Hardware	ENBC generic software	—	Switch generic 18.1.4 or later.
Hardware	RAM (Gigabytes) for G2/G5/M2/G7 server	16 GB of RAM for HP ProLiant DL385 G2/G5 servers 16 GB of RAM for IBM Nextgen 3650 M2 server which is also known as S8800 24 GB of RAM for HP ProLiant DL360 G7 16/16/16/24	Podded or high volume systems require 16 GB of RAM. The primary dialer must always have a 24 GB RAM. * Note: Avaya Proactive Contact 5.1 and 5.1.1 Dialer do not support HP GL 385 G2 hardware. Customers using HP GL 385 G2 hardware might not be able use the new features introduced in Avaya Proactive Contact 5.1 Dialer; however, customers can continue to work with the capacities and features available in their existing systems.
Integration	Crystal reports professional version	11	—
Integration	IVR agents	100	—
Jobs	Line pools per Job	10	—
Jobs	Number of configured jobs that are tested	500	These Jobs are not necessarily active Jobs.
Jobs	ID fields	4	—
Jobs	Job Description length	40 characters in English	—

Category	Parameter	Value	Notes
Messages	Message storage capacity per LPVC in minutes	34	If multiple LPVC2 cards installed in a specific cabinet have 16-MB of memory, this cabinet will be limited to 16-MB of memory capacity for all LPVC2 cards installed, regardless of actual memory size. Message storage capacity does not increase with more LPVCs. Only the number of LPVC ports increase.
Monitor	Number of Monitor views in a single dialer	20/40	The maximum number of default views is 20 and the maximum number of views is 40. Users can have the viewsets in the following ways: • Monitor session with 20 default views only. • Monitor session with 40 custom views only. • Monitor session with 20 default and 20 custom views only. Use filtering to improve the performance. You must set the refresh interval to 20 seconds for optimal Monitor performance.
Monitor	Number of Monitor views in a pod	10/20	The maximum number of default views is 10 and the maximum number of views is 20. Users can have the viewsets in the following ways: • Monitor session with 10 default views only. • Monitor session with 20 custom views only. • Monitor session with 10 default and 10 custom views only.

Category	Parameter	Value	Notes
			Use filtering to improve the performance. You must set the refresh interval to 30 seconds for optimal Monitor performance.
Physical	Maximum Dialers per pod	10	On a 10 dialer pod, the minimum supported refresh rate of the Monitor is 15 seconds.
Physical	The number of phone lines per dialer (T1/E1)	912/900	912 is a combination of inbound, outbound, and transfer ports.
Supervisor	The number of Supervisor applications per system	100	The Supervisor application includes Editor, Analyst, Monitor, Role Editor.
System	Protocols	—	TCP over SSL, and SSLIOP.
System	Java	1.6	—
System	Oracle DB server	Oracle Data base 11g 11.2.0.3.0	—
System	Oracle DB client	Oracle Data base 11g 11.2.0.3.0	—
Network	Network bandwidth minimum in mbps	100/1000	Contact Centers must set up a 1000-Mbps, full-duplex, no auto-negotiation network. Alternatively, the contact center can set up a 100-mbps, full-duplex network.
Network	D-channel band rate	64kb	—
Unit IDs	Number	50 units	Number of Unit IDs a Job can have.
Work List	Maximum length of line in master.cfg	1023	Each line in master.cfg cannot exceed 1023 bytes. This includes parameter name and the parameter value separated by a colon.
Work List	Maximum Strategy	300	Number of lines in strategy per strategy.
Work List	Maximum allowed units that agent can login to in multiunit Job	15	
System users	Maximum number of supported users	500	You can create a maximum of 500 system users.

Category	Parameter	Value	Notes
rbac/ rbacadmin users	Maximum number of supported users	500	You can create a maximum of 500 rbac/rbacadmin users.
sysadm users	Maximum number of supported users	500	You can create a maximum of 500 sysadm users.
Agent users	Maximum number of supported users	6000	You can create a maximum of 6000 agent users on a single dialer.
Pcanal users	Maximum number of supported users	100	You can create a maximum of 100 pcanal users.
Auditor users	Maximum number of supported users	100	You can create a maximum of 100 auditor users.
MAX_EXPA NSION_UNI T	Maximum Dynamic Expansion Unit in case of Infinite Job	50	In an Infinite Job, you can add a maximum of 50 units.
Line Assign	Maximum character length of LinePool Name	10	The maximum character length of the LinePool name configured.
Selection Report	Maximum fields, which can be selected for selection fields, for reports.	40	The maximum fields. Must not exceed 40.

Product compatibility

The following Avaya products are compatible with Avaya Proactive Contact:

Product	Release
Secure Access Link	1.8, 2.0
Application Enablement Services (AES)	5.2, 6.1, and 6.2
Avaya Aura® Communication Manager	5.2.1, 6.0.1, and 6.2
Avaya WebLM	4.7
Avaya IR	4.0.6
Avaya IQ	5.2.4 (without multitenancy)
Voice Portal	5.0, and 5.1
Avaya Aura® Contact Center	6.1 SP2 or later, 6.2, and 6.3
Avaya Aura® Call Center Elite	6.0.1 or 6.2
Avaya Communication Server 1000	R6.0 and R7.0, 7.5

Chapter 4: Site preparation

Network communications

Network preparation

The prerequisites to connect Proactive Contact to your network include:

- Ordering and installing data cables.
- Isolating the network traffic.
- Providing data connectivity.

Network Diagram

About this task

Companies must provide the necessary cables and components to connect Proactive Contact to their network. Proactive Contact components include system cabinet, supervisor workstations, and agent workstations.

Procedure

Prepare a network diagram that shows all cables, connectors, and devices. Because network and phone cables often share a cable run, you can combine the network diagram with the telephony diagram.

While preparing the network diagram:

- Identify the components to be connected 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 Proactive Contact System CPU.
- Have a dedicated IP address on the your network for the Lantronix if you are using SAL for remote access.

Related Links

[Network isolation](#) on page 30

[Network cables labels](#) on page 36

Network isolation

The internal network for the system cabinet is Ethernet 10BaseT. The connection to your network is 10/100/1000BaseT.

Related Links

[Network Diagram](#) on page 29

IP address requirements

Proactive Contact requires an IP address for the Proactive Contact System CPU to communicate with your network. Ask your network administrator for a dedicated, static IP address. Avaya assigns IP addresses to other internal components to separate internal and external work traffic. Your installation might require additional IP addresses based on the features you purchased.

Use the following table to determine the IP address requirements for the other system components:

Component	IP address
Supervisor workstation	Not required.
Agent workstation	Not required.
Host or enterprise data source	Alias and IP address.
CTI or AES link	Required, if present.
ASPI server	Required, if present.
Network printer	Required, if present. A network printer can be static or dynamic.
IR or VP server, if present	Required, if present.
Call Recording Server, if present	Required, if present.
Administration Console, if using a computer	Required, if present.
WebLM server (if not provided, the application will be loaded on the Proactive Contact server)	Required.
SFTP	Depends on customer requirements. The host may need a secure key and login name.
Network Time Protocol Server (NTPS)	Optional.

DNS requirements

To perform data networking between the system controller, middle-tier applications, supervisor workstations, and any other dialers within a pod, you need the following DNS information:

- Domain name and DNS server IP address
- Dialer DNS name
- Supervisor workstation DNS name
- Network printer DNS name

LDAP requirements for DNS and Fully Qualified Domain Name

Following are the requirements for the DNS and Fully Qualified Domain Name (FQDNS):

- DNS is dns.com with the DNS being all lower case.
- No special characters must be used.
- Must start with an alpha character.
- Must not be more than 8 characters long.
- FQDNS must be in the HOSTNAME.DNS.com format.
- There should be no other segment of the DNS name.
- Use only .com and do not use .org or .gov.

Sockets

The following table lists relevant sockets in the `/etc/services` file.

Service	Socket	Protocol	Purpose
Non-Proactive Contact specific services			
ssh	22	tcp	For secure remote logins and file transfers. Also Secure Copy (scp) and Secure FTP (sftp).
rpcbind	111	tcp	For use by portmap.
rpcbind	111	udp	For use by portmap.
snmp	161	tcp	SNMP responds to requests JetDirect, HPNP.
snmp	161	udp	SNMP responds to requests JetDirect, HPNP.
snmptrap	162	udp	SNMP trap events sent and JetDirect, HPNP.
TSAPI link	450	tcp	TSAPI link for AES server.
ipp	631	tcp	Internet Printing Protocol. Cupsd service is running by default.
ldap	636	tcp	LDAP over SSL.
ldap	636	udp	LDAP over SSL.
nfs	2049	tcp	Used by NFS to share directory and files with the PG230 switch.
nfs	2049	udp	Used by NFS to share directory and files with the PG230 switch.
tnslsnr	2484	tcp	Oracle listener service for secured data transmission, configured by default.
status	4001	tcp	RPC statd service.

Service	Socket	Protocol	Purpose
status	4001	udp	RPC statd service.
nlockmgr	4002	tcp	RPC nlockmgr service.
nlockmgr	4002	udp	RPC nlockmgr service.
mountd	4003	tcp	RPC mountd service.
mountd	4003	udp	RPC mountd service.
jetdirect	9100	tcp	Laserjet and other HP printers.
Proactive Contact specific services			
soe_routed	3000	tcp	SOE router daemon.
listserver	22600	tcp	List server.
agent	22700	tcp	Agent API.
ivr_conn	22800	tcp	IVR connection point.
nuimon	22900	tcp	Nuisance monitor services.
Proactive Contact Dialer CORBA services			
dccs	23100	tcp	Command and control service.
dccs_ssl	23101	tcp	Command and control service over SSL.
enserver	23120	tcp	Event service.
enserver_ssl	23121	tcp	Event service over SSL.
hdsc	23130	tcp	Historical data service.
hdsc_ssl	23131	tcp	Historical data service over SSL.
dialerSM	23140	tcp	Service monitor.
dialerSM_ssl	23141	tcp	Service Monitor over SSL.
dialerSA	23150	tcp	Service activation.
dialerSA_ssl	23151	tcp	Service activation over SSL.
dialerHealthSvc	23160	tcp	System health service.
dialerHealthSvc_ssl	23161	tcp	System health service over SSL.
Proactive Contact Middle Tier CORBA services			
NameService	23200	tcp	Naming service.
NameService_ssl	23201	tcp	Naming service over SSL.
logger	23220	tcp	Logging service.
logger_ssl	23221	tcp	Logging service over SSL.
serviceMonitor	23240	tcp	Service monitor.
serviceMonitor_ssl	23241	tcp	Service monitor over SSL.
ccs	23260	tcp	Command and control service.
ccs_ssl	23261	tcp	Command and control service over SSL.
serviceAct	23280	tcp	Service activation.

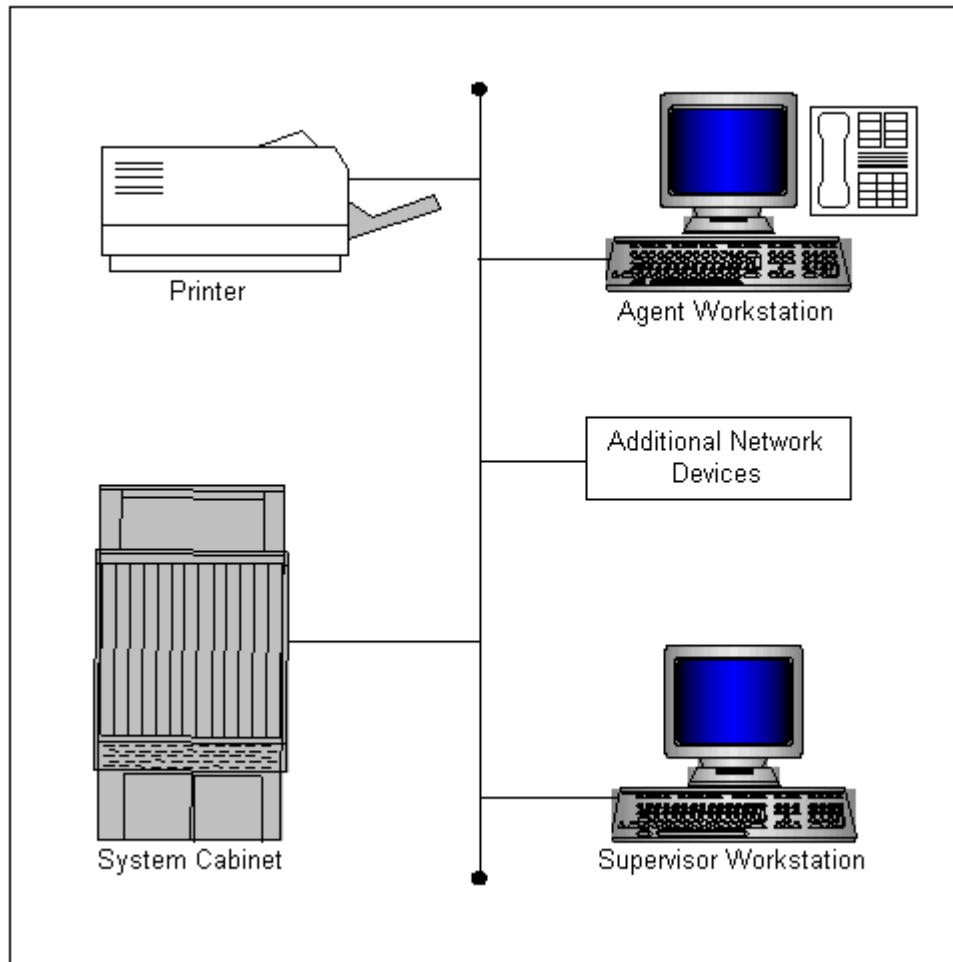
Service	Socket	Protocol	Purpose
serviceAct_ssl	23281	tcp	Service activation over SSL.
syshealthSvc	23320	tcp	System health service.
syshealthSvc_ssl	23321	tcp	System health service over SSL.
RTRM	23370	tcp	Real-time request manager.
RTRM_ssl	23371	tcp	Real-time request manager over SSL.
RBACManager	23390	tcp	RBACManager Service.
RBACManager_ssl	23391	tcp	RBACManager Service over SSL.

Ethernet II network connection specifications

The internal components of the system cabinet connect to an Ethernet II network. This Ethernet II internal network transfers data among these components only. To connect to your network, use a separate PCI Ethernet card.

You must connect the customer network to the Proactive Contact System CPU and not to the internal LAN hub. Connect your network to this cable to provide access to supervisor workstation, agent workstations, and printers.

The following figure shows an Ethernet II network connected to the system cabinet and the supervisor and agents workstations connected to your network.



Related Links

[Network requirements](#) on page 34

[Workstations](#) on page 35

[Network cables labels](#) on page 36

[Serially attached agent workstation requirements](#) on page 36

Network requirements

The Proactive Contact server requires a dedicated, static IP address. The components connected to Proactive Contact and your network can utilize the DHCP address.

* Note:

Ensure that customers set up either a 100-Mbps, full-duplex, no auto-negotiation network or a 1000-Mbps, full-duplex network. For better performance, use a 1000-Mbps network.

Proactive Contact supports Ethernet II networks with the following features:

- Address Resolution Protocol (ARP)
- TCP/IP
- User Datagram Protocol (UDP)
- SSH and SFTP
- Proactive Contact compatible sockets. For the latest list of required sockets, contact your Avaya representative.

Proactive Contact also provides a location for the switch. For information on the placement and environmental requirements for the switch, contact the Avaya representative.

Related Links

[Ethernet II network connection specifications](#) on page 33

Workstations

Supervisor workstations

Supervisor workstations connect directly to your network and must match the connections used on your network. Verify the network connectivity from the Supervisor workstation address to the system and the network printer.

Agent workstations

Agent workstations can be network-connected or serial-connected or direct connected. However, the Proactive Contact system provides the best service using network-connected computers. The Proactive Contact system supports connections to an Ethernet network using TCP/IP protocol to move data to and from the agent workstations. These systems can use the Avaya graphical user interface or the application using Agent API.

Note:

The Services agreement with Avaya Professional Services does not include integration development and consulting.

If you are using an Agent API solution, provide network-connected agent computers. The Proactive Contact Agent session communicates with the system through Agent API. An emulation session is not necessary in this case.

The Proactive Contact Agent application broadcasts record information through DDE. To create a cut-and-paste solution for your host, the host emulation session must support DDE. You are responsible for creating any cut and paste solution, unless you have contracted with Avaya Professional Services for this cut and paste work. If you have contracted with Avaya Professional Services to create a cut and paste solution to your host, you must provide the host emulation software name, for example, Reflections. You must also provide the host emulation software type, for example, vt100 or 3270.

Related Links

[Ethernet II network connection specifications](#) on page 33

Network cables labels

About this task

Clearly label each cable end with the component number, location, and cable type.

Related Links

[Ethernet II network connection specifications](#) on page 33

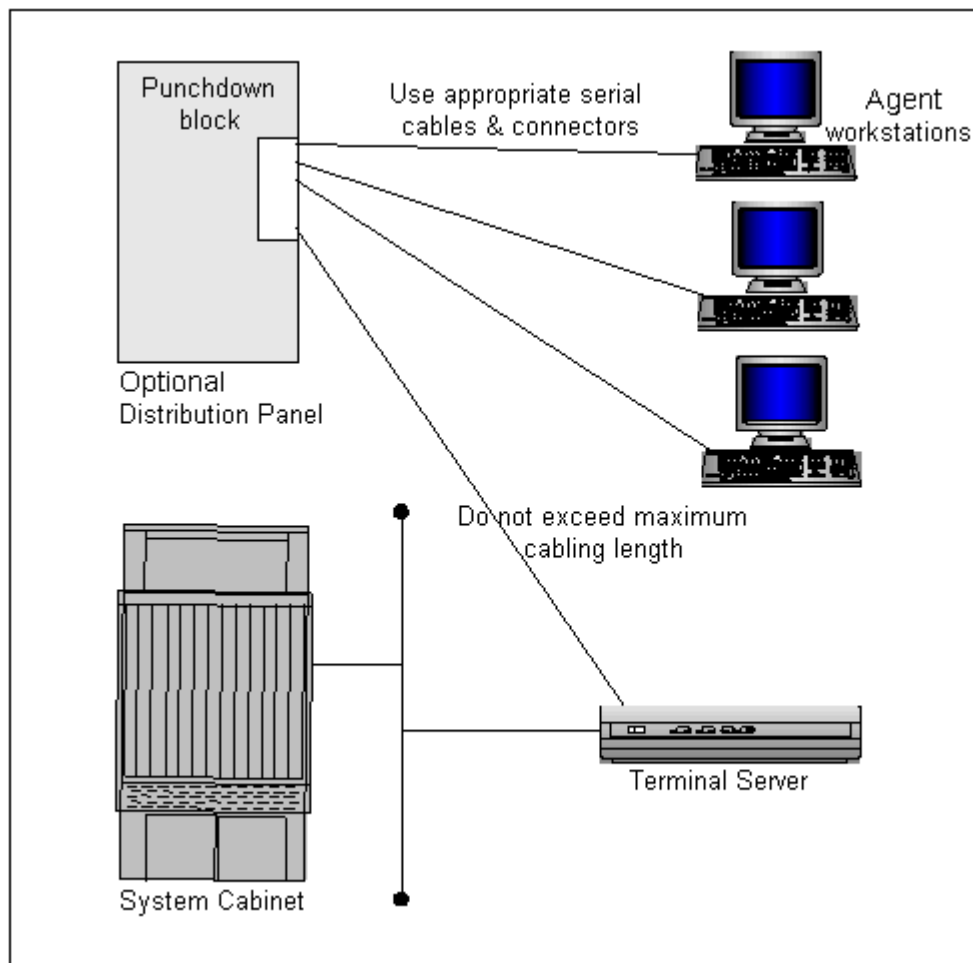
[Network Diagram](#) on page 29

Serially attached agent workstation requirements

The connections for the agent workstations attached in a series involve multiple ports and cables. Serially attached agent workstations can be ASCII terminals or computers running terminal emulation software. Serially attached terminals can be dual ported. One port connects the terminals to Proactive Contact and the other connects to your host.

You must provide the terminal servers along with cables, configuration, and support.

The following figure shows a terminal server located outside the system cabinet that connects the terminal to Proactive Contact:



Agent workstations

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

Terminal servers

See the product documentation from the manufacturers for details about the following requirements:

- Placement
- Electrical
- Environmental
- Cable pin outs

Data LAN connection

You must provide and support the terminal servers that connect to the Ethernet II network. Ensure that the servers conform to Ethernet II standards for network cable distances and use TCP/IP to connect to Proactive Contact and across the network.

Cable identification

Clearly label connectors at the distribution panel or terminal server with the workstation identification. Label cables with the associated workstation.

Related Links

[Ethernet II network connection specifications](#) on page 33

Data transfers

Data transfers between the host computer and Proactive Contact

Data transfers occur between the host computer and Proactive Contact.

Note:

If you do not upload data to the host, ignore the references to uploading in the following information.

Proactive Contact uses SFTP to send and receive files from the host computer.

Proactive Contact or the host computer can start the transfer at the scheduled time. However, for security reasons, the host computer generally initiates the transfer.

If the host starts the transfer:

- The customers provide the Proactive Contact login and password that they would like to use during the specifications.
- The host computer must provide the secure key or security certificate used in the SFTP process.

If Proactive Contact starts the transfer:

- Provide the Avaya representative the Host System information: IP address, login name, password, download file location, logout procedure, download file names, upload file location, and upload file names. Use the [File transfer worksheet](#) on page 39

Irrespective of who initiates the transfer, supply the Avaya representative:

- Download information: the date and time of the download.
- Upload information: the date and time of the upload.

*** Note:**

You can capture information about the data transfers on the `File Transfer` worksheet.

A customer-initiated file transfer process is a best practice.

Related Links

[Download record formats](#) on page 38

[Upload record formats](#) on page 39

[File transfer worksheet](#) on page 39

[Testing sample file downloads](#) on page 40

Send a sample file of customer data four weeks before the scheduled Proactive Contact installation. You must include a printout of each file.

Download record formats

The download record formats contain field definitions of the records that are downloaded from the host to Proactive Contact. The host application writes a script, for example, Job Control Language (JCL), to instruct the host to generate one or more ASCII files that contain customer records. Upon receiving the files, Proactive Contact converts each file into a format that can be used to create calling lists.

The customers must also include unique ID field, the information that the agents will require to handle the call, information that the supervisors will need to select the records into different calling campaigns, and any information that is needed on reports that will be generated on the system.

Related Links

[Data transfers between the host computer and Proactive Contact](#) on page 37

[Upload record formats](#) on page 39

[File transfer worksheet](#) on page 39

[Testing sample file downloads](#) on page 40

Send a sample file of customer data four weeks before the scheduled Proactive Contact installation. You must include a printout of each file.

Upload record formats

The Upload record formats define the customer data that you want Proactive Contact to return to the host computer. These formats are optional. If the agents update customer records on the host during the calling operations, you do not have to perform the Proactive Contact-to-host uploads. Some of the formats are upload unique ID field, any fields updated by agents and call disposition information.

The host application writes a script that instructs the host to accept one or more files that contain customer records.

At scheduled times, Proactive Contact converts the customer records included in a specific calling list into the format of the host computer and creates an upload file. When the host receives the upload file, the file follows the script and updates the host database.

Test the upload process at your site

An Avaya representative can provide sample upload files to you. You can use these files to test the script that updates the host database with the data.

Related Links

[Data transfers between the host computer and Proactive Contact](#) on page 37

[Download record formats](#) on page 38

[File transfer worksheet](#) on page 39

[Testing sample file downloads](#) on page 40

Send a sample file of customer data four weeks before the scheduled Proactive Contact installation. You must include a printout of each file.

File transfer worksheet

Use the File transfer worksheet to provide information to an Avaya representative for file transfers.

Requirement	Value	Enter value
Download information	SFTP host initiated	—
—	Automatic	Yes/No
—	Days of the week	—
—	Time	—
Upload information	SFTP host initiated	—
—	Automatic	Yes/No
—	Days of the week	—
—	Time	—

Requirement	Value	Enter value
Host system information	Host IP Address	—
—	Host Login Name	—
—	Host Password	—
—	Download File Location	—
—	Upload File Location	—
—	Logout Procedure	—
—	Secure key	—
Download file names	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
Upload file names	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—

Related Links

[Data transfers between the host computer and Proactive Contact](#) on page 37

[Download record formats](#) on page 38

[Upload record formats](#) on page 39

[Testing sample file downloads](#) on page 40

Send a sample file of customer data four weeks before the scheduled Proactive Contact installation. You must include a printout of each file.

Testing sample file downloads

Send a sample file of customer data four weeks before the scheduled Proactive Contact installation. You must include a printout of each file.

About this task

After Proactive Contact is configured, your vendor uses the sample data to test your system by simulating calling operations.

Procedure

Create a sample file for each record format you use with the following guidelines:

- Include a minimum of 100 actual or simulated host records in the ASCII format.
- If you use simulated records, assign unique account and phone numbers to each record.
- Include a range of host customer data. Do not repeat a record.
- Do not use packed or signed fields.
- Do not include record headers or trailers.

* Note:

If you create a sample file with character separated values (CSV), the file can contain two or more records with the following criteria:

- Each record must contain a delimiter for each field. The most common delimiters are a comma, a pipe, and a semicolon. Select one delimiter and use the delimiter consistently.
- The first record in the file can contain the name of each field.
- The second record in the file must contain the maximum number of characters for each field.

Example

Download record 1 in the CSV format.

```
ACCTNUM, NAME1, NAME2, ADDRESS, CITY, STATE, ZIP, PHONE1, PHONE2, LASTPAYDT, LASTPAYAMT,
BIRTHDATE, COMMENT, FILLER1, FILLER2, NAME1,
NAME2, ADDRESS,
CITY, ST, PHONE1, PHONE2, 20070101, 123456789, 020275,
COMMENT,
FILLER1, FILLER2
```

Related Links

[Data transfers between the host computer and Proactive Contact](#) on page 37

[Download record formats](#) on page 38

[Upload record formats](#) on page 39

[File transfer worksheet](#) on page 39

Telephony

General telephony

Telephone circuits

Proactive Contact supports both digital and analog circuits to place and receive calls. During the sales process, you and your Avaya vendor have already determined the number of phone circuits required for your configuration. In a Proactive Contact with CTI environment, the telephone circuits

do not connect directly to Proactive Contact. However, the telephone circuits still need to be considered.

*** Note:**

This topic and its associated topics apply only to Proactive Contact with PG230. If you are using Proactive Contact with CTI, contact the Communication Manager support team for the configuration of Communication Manager for CTI Dialer.

To order and install telephone network cables and equipment, contact your telephone company representative. To use a PBX and install the appropriate PBX cables and equipment, contact your PBX representative.

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

If the circuits go through a local central office and you want phone transfer or conference features, then order Centrex service to accommodate hook flash capability.

Distribution panel

The Proactive Contact System and Proactive Contact with PG230RM options use the distribution panel. Proactive Contact with CTI does not use the distribution panel.

Install a distribution panel at each Proactive Contact site and within 150 feet or 50 meters of Proactive Contact.

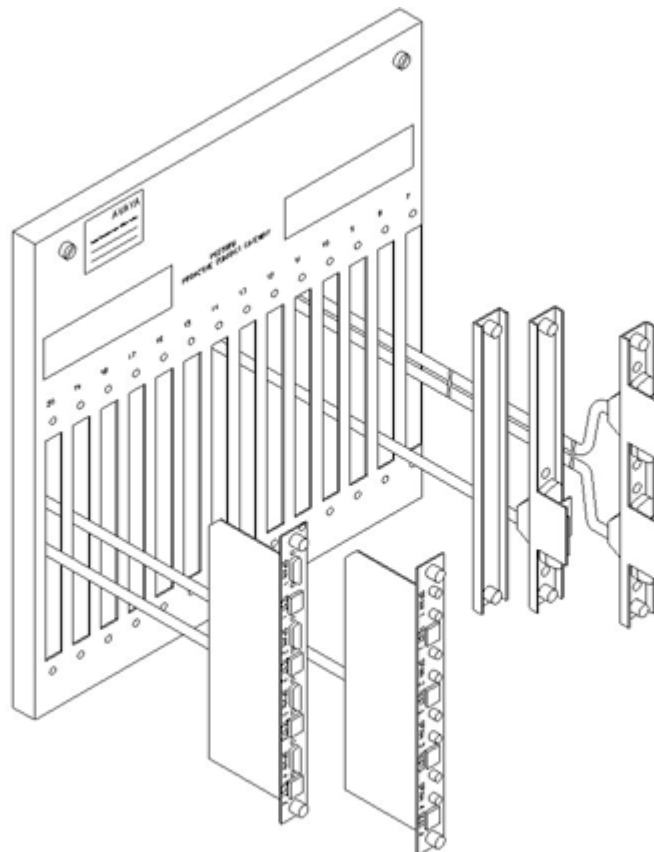
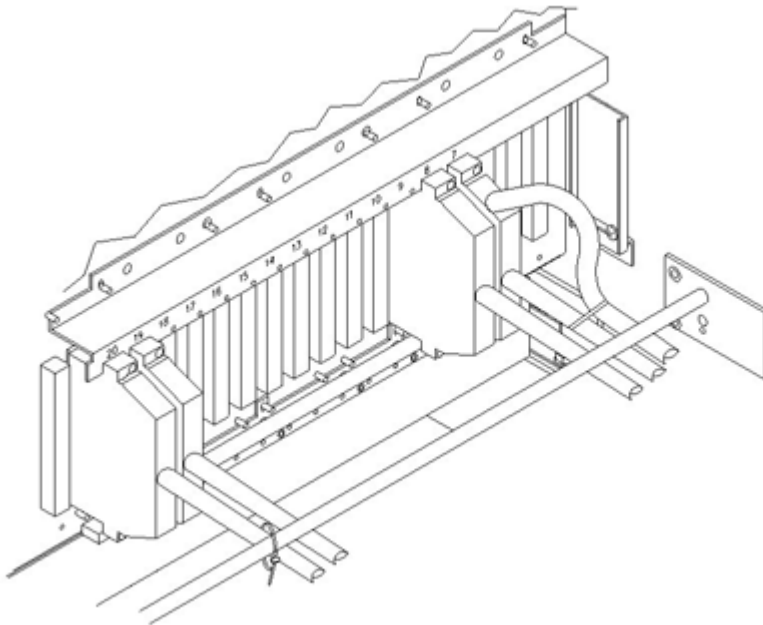
Use the distribution panel to install phone communication equipment and phone cables. The panel can serve as a demarcation point where you, your Avaya vendor, and other vendors can test phone equipment.

*** Note:**

The distribution panel is optional.

Proactive Contact System and PG230RM system cabinets

The Proactive Contact System and PG230RM cabinets use a cable to connect from the backplane connector on the switch to a new I/O card that is mounted directly on the back panel of the enclosure. Similarly, the customer cable is connected directly to the rear panel of the enclosure with no access to the inside of the system. The following diagrams illustrates the switch backplane and I/O cables:



You can connect various telephone cables to these I/O cards. However, the Twisted Pair I/O card can transform the pinouts from the traditional PDS (Accunet) pinouts to the more common pinouts used on Communication Manager. See [T1 twisted pair I/O module](#) on page 50 for the pinout options for the Twisted Pair I/O card.

Agent voice circuits

The circuit types available for the agent voice connections depend on the connection type. The two connection types for the Proactive Contact system and Proactive Contact with PG230RM option are:

- Dialback
- Dial-in agents

Proactive Contact with CTI uses the SOFTDIAL connection type.

Dialback or dial-in agents

With agent dial-in headsets, you cannot use Agent Blending. Dialers with dialback or dial-in agent voice connections use an agent port identification number or extension number to establish a relationship between an agent workstation and a phone. You must define the identification number or extension numbers during software planning.

When a dialback agent logs in to Proactive Contact, the system displays a message for the agent to type an identification number or an extension number in the log-in window. The system matches the number with the list of valid identification numbers or extension numbers and then calls the agent at that number to complete the login.

When a dial-in agent logs in to Proactive Contact, the phone 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 phone keypad and then logs in to 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

The Proactive Contact System and Proactive Contact with PG230RM options use the transfer trunks functionality. Proactive Contact with CTI does not use transfer trunks.

Transfer trunks are dedicated phone circuits that agents use to transfer calls. The trunks are installed between Proactive Contact and the PBX or CO of the customer.

When hook flash is unavailable, use E&M or Ground Start circuits for T1 and Ground Start circuits for analog transfer trunks from the dialer to a telephony switch or the central office. Transfer trunks must support disconnect supervision.

Transfer lines may also be ISDN or ISDN NFAS. When using ISDN for transfer lines, a numeric value, such as account number or phone number, can be passed using ANI Outpulse to the receiving party that is VDN or non PCS agent.

For E1 transfer trunks, use ISDN (DPNSS or Q.SIG) or non-ISDN (E1 CAS) circuits to connect the dialer 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 a group of organized inbound phone circuits. When the CO or PBX finds the first circuit busy, the CO or PBX hunts for the next available circuit.

The Proactive Contact System and Proactive Contact with PG230RM option use hunt groups. Proactive Contact with CTI does not use hunt groups.

For example, a company has two 800 numbers or main access numbers associated with one inbound T1 trunk. When a customer calls one 800 number, the central office hunts for an available circuit in 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.

Create hunt groups for inbound calls to the dialer. Create trunk groups on the Communication Manager to configure the agent headsets and transfers to the dialer. Customers must set up the inbound lines from their PBX as interflow lines. The vectoring on the Communication Manager attempts to route calls to the inbound lines on the PCS when they exceed threshold settings such as time in queue or number of calls in queue on the PBX. The vectoring checks to see if any of the PCS inbound lines are available, and if so, routes the call to that line for handling by a PCS agent.

Related Links

[Setting up hunt groups](#) on page 45

Setting up hunt groups

About this task

The Proactive Contact System and Proactive Contact with PG230RM options use hunt groups. Avaya Proactive Contact with CTI does not use hunt groups.

Procedure

1. Set up hunt groups
 - If Proactive Contact uses Intelligent Call Blending, consult your telephone company or PBX contact to set up inbound trunks as one or more hunt groups.
 - If Proactive Contact runs multiple inbound jobs for different campaigns simultaneously, using different main access telephone numbers, define a hunt group for each telephone number.
2. During the setup process, provide the following information 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 phone company or PBX contact.

Note:

Request cyclic hunt types, for example, Round Robin and Least Used, that spread inbound calls evenly over inbound circuits.

Related Links

[Hunt group](#) on page 45

ANI and DNIS

Proactive Contact supports ANI and DNIS on inbound systems configured with Intelligent Call Blending and on outbound to deliver Caller ID.

ANI and DNIS numbers appear on the screen of an agent and are stored in the customer record.

ANI and DNIS functionalities are available only in NAR, if you are using ISDN, ISDN NFAS circuits.

Related Links

[Using ANI and DNIS](#) on page 46

Using ANI and DNIS

Before you begin

To use ANI and DNIS with Proactive Contact, ensure that your carrier provides the ANI and DNIS information or supports your passing ANI Caller ID via outpulse. If you have a switch, equip and configure the switch to collect ANI and DNIS information.

About this task

Proactive Contact supports ANI and DNIS. Proactive Contact also supports the process of sending ANI through the caller ID. Note that only numeric fields that are 15 characters or less can pass through ANI or DNIS.

Procedure

1. To use ANI and DNIS with Proactive Contact, the ANI and DNIS fields must contain delimiters to mark the end of the fields. For example, the number sign (#) and asterisk (*). Ensure that all the ANI and DNIS fields use the correct delimiters..
2. To set up a Caller ID number, use the character-based interface or the Editor application GUI in Supervisor suite to set up a job. Type the Caller ID number as an outbound job parameter. Proactive Contact sends the Caller ID (ANI) when the system dials the outbound number.

Note:

If you add caller ID, the central office must re-configure your outbound telephone line to recognize and use caller ID digits. For this, the outbound lines must be ISDN or Feature Group D lines. For more information, contact your telephone company.

T1 circuits

Telephone circuits

The circuit types available for use depend on the desired destination, such as local CO, IXC, PBX or other switch, or the Centrex service.

When planning your phone circuits, note the following:

- You must have dedicated T1 circuits between the dialer and PBX to support transfer requirements for the dialer.
- If your headsets are network attached, use E&M signaling for T1 trunks from the dialer to the switch. E&M signaling for T1 trunks provides Proactive Contact with answer and disconnect supervision.

T1 Signaling methods

The following table summarizes the T1 signaling methods that Proactive Contact supports:

Signaling type	Features
Loop Start Foreign Exchange Station (FXS)	Emulates a 2500 phone. Provides access to the switch or Centrex features such as transfer and conference through hook flash signaling. Answer and disconnect supervision are unavailable in most cases.
Loop Start Foreign Exchange Office (FXO)	Emulates a central office or PBX that supports a 2500 phone.
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 digital switch.
ISDN PRI (North America)	Provides fully featured ISDN service 24 B-channels and supports Non-Facility Associated Signaling (NFAS) operation. If there are more than one T1 in NFAS, two D channels should be used for signalling and one of the two is a back up.
ISDN PRI (Europe)	Provides fully featured ISDN service 30 B+D and supports Non-Facility Associated Signaling (NFAS) operation.

For more information, contact your Avaya representative.

Outbound and inbound signaling types

The following table lists the usage of 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

Related Links

[Channel Service Units](#) on page 48

[Enabling ISDN NFAS PRI for T1 circuits](#) on page 48

Channel Service Units

The Channel Service Unit (CSU) connects the dialer to a T1 trunk. The T1 can originate at a central office (CO) or switch, such as a PBX.

The CSU performs the following functions:

- Regenerates the digital (T1) signal.
- Provides loopback testing capabilities and test jack points for T1 test equipment.
- Performs line conditioning and equalization functions.
- Responds to loopback commands from the phone network.

Avaya requires a CSU for any T1 circuit connecting Proactive Contact to a CO. The CSU transforms long-haul (DS-1) signaling on the CO side to short-haul (DSX-1) signaling on the Proactive Contact side.

You must use a CSU for any T1 circuit connecting to a private network or PBX.

Related Links

[CSU to switch distance](#) on page 48

[Telephone circuits](#) on page 46

[Enabling ISDN NFAS PRI for T1 circuits](#) on page 48

CSU to switch distance

The following table lists the maximum distances between the digital switch and CSU or customer switch, and the corresponding cable gauge specifications:

Distance	Cable gauge
380 feet (116 meters)	26 (0.129 sq-millimeters)
520 feet (158 meters)	24 (0.205 sq-millimeters)
655 feet (220 meters)	22 (0.326 sq-millimeters)

Related Links

[Channel Service Units](#) on page 48

Enabling ISDN NFAS PRI for T1 circuits

About this task

Proactive Contact also supports ISDN PRI T1 circuits with the optional non-facility associated signaling (NFAS) feature. NFAS is available for installation in the United States and Canada, depending on your carrier. You can also apply the NFAS feature in a limited form in Japan.

In NFAS, the T1 circuits are configured in a group with minimum one T1, which is usually the first one in the sequence, configured with a D channel on the 24th circuit. Each NFAS group must have a primary and a backup D channel (usually the 1st and 2nd T1s in that group). All other T1s in the group can be configured as B channels (voice channels). A maximum of eight T1s must be used for any NFAS group to achieve greatest efficiency with the Central Office equipment. The ISDN and

ISDN NFAS circuits must be ATT4E, ATT5E, 4ESS, 5ESS, NI1 or NI2. If the circuit is NI2, ask the carrier for B-channel availability, also called B-channel enabled, so that the dialer can control the individual B-channels separately.

In inbound environments using ANI and DNIS, your carrier can mandate T1 connections that provide ISDN PRI to make ANI and DNIS information available.

Procedure

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
- Maximum of 192 channels

For more than 192 channels, split the outbound lines into two NFAS groups.

Related Links

[Telephone circuits](#) on page 46

[Channel Service Units](#) on page 48

T1 connections

T1 connection specifications

Proactive Contact uses T1 circuits to place outbound calls or receive inbound calls from customers.

You can gain access to a headset connected to a PBX or ACD over a T1 connection between Proactive Contact and the PBX or ACD.

T1 cables connect to the central office such as Centrex, LXC, IXC, PBX, or ACD through your distribution panel and phone network terminator.

Related Links

[T1 cable requirements](#) on page 49

T1 cable requirements

You can use the following two connection methods:

Primary method

The cable is a CAT5e that is, a 4-pair, 8-wire Ethernet cable.

The connection is through the 8-pin modular connector on the back panel.

Secondary method

The cable is a minimum 4-wire cable that is shielded, twisted pair, 26-gauge (0.129 sq-mm) or more, and Teflon or PVC coated, that is, data grade.

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

T1 connections overview

Proactive Contact requires one T1 cable for every 24 phone channels. 23 channels is ISDN PRI.

Each cable terminating at Proactive Contact requires 10 feet (3 meters) of slack.

Related Links

[T1 connection specifications](#) on page 49

I/O modules and connectors

The user I/O is connected to Proactive Contact systems using the Twisted Pair I/O module.

Related Links

[T1 twisted pair I/O module](#) on page 50

[Labeling T1 cables](#) on page 52

T1 twisted pair I/O module

You can use any of the two connection modules: primary or secondary.

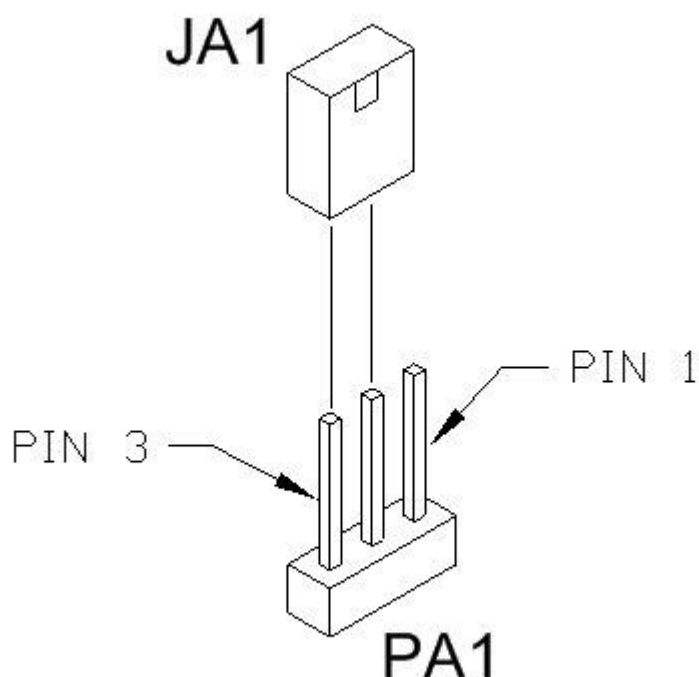
Primary connector

The twisted I/O module pair provides a separate 8-pin modular connector in parallel with the DB-15 connector. Use the 8-pin connector in all new installations. Use the 8-pin modular jack to connect to the CSU, the PBX, or the network.

This connector is available with the following two pinout options:

- The traditional PDS pinout: Used for many years on the dialer switch and defined by the old AT&T Accunet specification.
- The recent and more standard pinout: Used in the industry by many vendors, including Avaya on Communication Manager. A jumper field on the Twisted Pair I/O card controls the pinout option.

The bottom pin assembly has reference designations PA1-PA4 for span #1, PB1-PB4 for span #2, PC1-PC4 for span #3, and PD1-PD4 for span #4, respectively. Use the associated jumpers JA1-JA4, JB1-JB4, and so on to connect to the pins. The following diagram shows that the jumper field uses the small suitcase style jumpers and indicates the designations for PA1 and JA1:



If the jumper is across pins 2 and 3, then the industry standard (Communications Manager) pinouts are connected on the 8-pin modular connector. If the jumper is moved to pins 1 and 2, the pinouts matching traditional PDS (Accunet) are given. The default settings are for industry standard (Communications Manager).

If shields are connected to pins 3 and 6 on the 8-pin modular cable/connector, you can modify the type of ground connection to the shields by another jumper for each span on the Twisted Pair I/O card. Jumper fields PA5 – PD5, and associated jumpers JA5 – JD5, control this option.

*** Note:**

You can connect with unshielded Cat5e cable, so that the shields are not present. The following paragraph and table apply only to shielded cables:

If the jumper is across pins 1 and 2 of the jumper pins, then the connection is coupled to the ground through a capacitor (AC coupling). If the jumper is across pins 2 and 3, then the shield connection is made directly to the ground (DC coupling). If the jumper is not used at all, then no ground connection is made to the shield. The following table shows the jumper position and the relevant shield condition:

Jumper position	Shield condition
1-2	AC coupled to the ground.
2-3	DC coupled to the ground.
No Jumper	No connection to the ground.

The following table shows how to use the 8-pin modular connector, and how to use the pinouts for the jumper settings:

Signal	Traditional PDS Pin Numbers (jumper from 1 to 2)	RJ-48C
Proactive Contact to network, transmit tip	1	5
Proactive Contact to network, transmit ring	8	4
Network to Proactive Contact, receive tip	4	2
Network to Proactive Contact, receive ring	5	1
Span shield connections	3,6	3,6
Not used in Proactive Contact	2,7	7,8

*** Note:**

The pinout in the previous table is an industry standard and matches the pinout used in Communication Manager.

Secondary connector

For network or PBX T1 connections on the PG230RM, the Twisted Pair I/O module provides four DB-15 style connectors, one for each T1 span. The following table lists the pinouts for the DB-15 connector:

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

Related Links

[I/O modules and connectors](#) on page 50

[Labeling T1 cables](#) on page 52

Labeling T1 cables

About this task

To make the installation process easier, label T1 cables. During the installation, installer connects an 8-pin modular or DB-15P male connector to Proactive Contact.

Procedure

1. Label outbound T1 cables as outbound.
2. Label inbound T1 cables as inbound.
3. Label agent voice T1 cables with the voice connection type.

Example

At the 8-pin modular or DB-15P male connector for the T1 circuit connecting dialback agent voice connections to the Proactive Contact ports 01 through 24, label as:

- AGvoice/dialback:01-24

At the 8-pin modular or DB-15P male connector for the T1 carrying agent headsets 01 through 24, label as:

- AgentHeadsets 01-24

Related Links

[I/O modules and connectors](#) on page 50

[T1 twisted pair I/O module](#) on page 50

Connecting T1 lines to PBX

Procedure

1. Connect the transmit pairs to the PBX receive pairs.
2. Connect the receive-pairs to the PBX transmit pairs. Some CSU models switch transmit and receive pairs internally.
3. Set the configuration or dip switches on each CSU to reflect the correct distance from the dialer. The distance must not exceed 655 feet (220 meters).

If you are not using a CSU for your T1 circuits, consult your switch vendor regarding connectors or equipment required at the distribution panel.

E1 circuits

E1 telephone circuits

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

The following table summarizes the E1 signaling methods that Proactive Contact supports:

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 phone operation.
CAS-MFCR2	Channel Associated Signaling (CAS) with Multi-Frequency, Compelled R2 signaling (MFCR2). Provides a more complex audio tone signaling method, using R2 tones, for interfacing to the Public Switched Telephone Network (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.

E1 signaling type	Features
ISDN-DPNSS	Digital Private Network Signaling System (DPNSS). Provides private Primary Rate ISDN connectivity between PBXs with simple call setup facilities supported. This signaling type is used in many countries. Use DPNSS for E1 tie trunks between PBXs and the dialer. You can also use the ISDN-DPNSS on a Private Leased Line in a Centrex-like mode to connect to remote PBXs and other switches.
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 dialer and the PSTN. This signaling type is also known as Euro-ISDN, CTR4, iCTR4, ETS 300, and NET5. Use for connecting to the PSTN whenever possible.
ISDN-Q.SIG	Provides ISDN connectivity between PBXs that use a Q.931 compliant protocol.

For more information, contact your Avaya project manager.

Related Links

[Network termination point](#) on page 55

[ISDN PRI for E1 circuits](#) on page 55

[E1 circuit usage](#) on page 54

E1 circuit usage

The following E1 circuit table shows the usage of 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				

Related Links

[E1 telephone circuits](#) on page 53

[Network termination point](#) on page 55

[ISDN PRI for E1 circuits](#) on page 55

Network termination point

A network termination point (NTP) device that connects Proactive Contact to an E1 circuit exceeds the allowable length of an E1 cable. The E1 circuit can originate from the telephone office or from a distant switch such as a remote PBX.

NTPs perform the following functions:

- 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 phone network.

An E1 circuit that connects Proactive Contact system to a central office (CO) requires an NTP. The NTP transforms long-haul signaling on the CO side to short-haul signaling on the dialer side. An NTP for any E1 circuit must connect to a private network or PBX.

Circuit impedance

Proactive Contact supports two types of E1 circuit interfaces: 75 Ohm and 120 Ohm. The following table describes the usage of both circuit interfaces:

Usage	75 Ohm	120 Ohm
Cable	Coaxial cable and BNC connectors to connect the E1 cable to the interface card and to the PBX, NTP, or distribution panel.	CAT-5e cable or Four-wire, shielded twisted pair wire.
Interface	Usually, the E1 DPNSS and DASS2 circuits use 75 Ohm coax interfaces, especially in the United Kingdom. E1-CAS and MFCR2 interfaces are usually 75 Ohm. Some regions such as South Africa and South Korea request 120 ohm.	E1 ISDN TBR4 (EuroISDN30 or EuroISDN30e) interface is usually 120-Ohm twisted pair.

Related Links

[E1 telephone circuits](#) on page 53

[ISDN PRI for E1 circuits](#) on page 55

[E1 circuit usage](#) on page 54

ISDN PRI for E1 circuits

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

Proactive Contact supports the following PRI ISDN protocols:

- ISDN TBR4, also referred to as EuroISDN30 and EuroISDN30e, CTR4, iCTR4, ETS 300, NET5
- Q.SIG
- DASS2

- DPNSS

Related Links

[E1 telephone circuits](#) on page 53

[Network termination point](#) on page 55

[E1 circuit usage](#) on page 54

E1 connections

E1 connection specifications

Proactive Contact can use E1 circuits to place outbound calls or receive calls from customers. You can use an E1 connection between Proactive Contact and the PBX or ACD to reach a headset connected to a PBX or ACD.

E1 cables connect Proactive Contact to the central office, PBX, or ACD through your distribution panel and phone network terminator.

Related Links

[E1 network equipment](#) on page 62

75-Ohm interface cable requirements

The 75-ohm cable is a coaxial cable of the RG-59/U type.. Most of the versions of the 75-Ohm coaxial cable type have similar characteristics. Some have higher breakdown voltages between the shield and center conductor, and some exhibit slight loss on each cable foot. The Belden RG-59/U Type (8241) exhibits a loss of two decibels every 100 meters that is, 0.6 decibels of loss per 100 feet. This behavior is typical of the RG-59/U Type (8241) cable.

Each E1 circuit requires two coaxial cables: a Transmit (Tx) cable and a Receive (Rx) cable. Both the cables are mutually independent.

Each cable terminating at Proactive Contact needs 10 feet (3 meters) of slack.

Related Links

[75 Ohm cable connections](#) on page 56

[Labeling E1 cables](#) on page 62

[Connecting cables to Quad E1 Coax I/O module](#) on page 57

75 Ohm cable connections

Using the Quad coax I/O module, the 75 ohm coaxial cable is connected to the Proactive Contact systems.

Related Links

[75-Ohm interface cable requirements](#) on page 56

[Labeling E1 cables](#) on page 62

[Connecting cables to Quad E1 Coax I/O module](#) on page 57

Connecting cables to Quad E1 Coax I/O module

Procedure

Connect the Transmit (Tx) and the Receive (Rx) coaxial cables to the coax I/O module with the BNC style coaxial connectors.

The following table shows the connection points for each span pair and the direction relative to the Proactive Contact switch:

Span	Signal	Direction	Jack
1	Network to Proactive Contact	Rx	JA3
	Proactive Contact to Network	Tx	JA4
2	Network to Proactive Contact	Rx	JB3
	Proactive Contact to Network	Tx	JB4
3	Network to Proactive Contact	Rx	JC3
	Proactive Contact to Network	Tx	JC4
4	Network to Proactive Contact	Rx	JD3
	Proactive Contact to Network	Tx	JD4

The card provides a separate 8-pin modular connector parallel to the two coaxial cables for each span.

Warning:

You must use the 8-pin modular connector for diagnostic purposes only. Do not use the 8-pin modular jack to connect to the CSU, PBX, or the network. The use of this connector results in severe mismatches on the 75 ohm E1 module interfaces. If you use 8-pin modular connectors for testing, keep the test connections as short as possible.

Related Links

[Diagnosing Quad E1 coax I/O module connections](#) on page 57

[75-Ohm interface cable requirements](#) on page 56

[75 Ohm cable connections](#) on page 56

Diagnosing Quad E1 coax I/O module connections

About this task

The Quad E1 coax I/O module provides a separate 8-pin modular connector in parallel to the two coaxial cables for each span.

Procedure

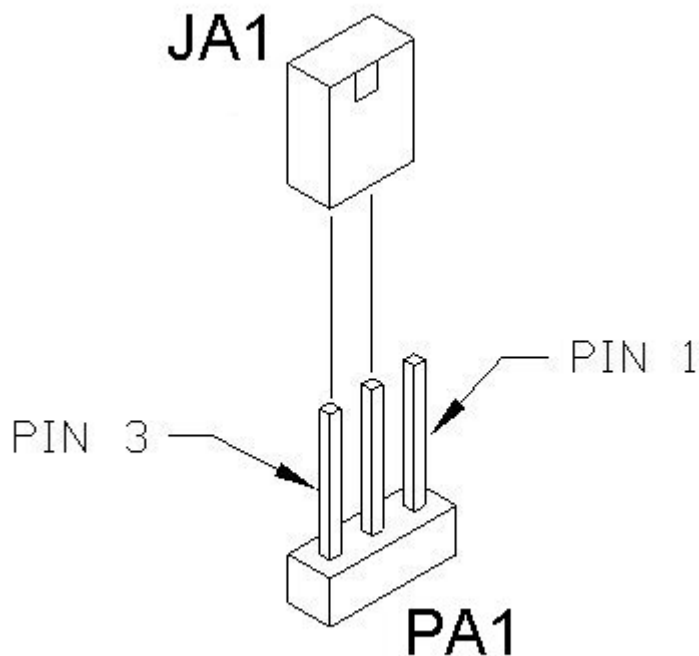
For diagnostic purposes only, connect the test equipment to the 8-pin modular connector using the pinouts listed in the following table:

Pin number	Signal
1	Proactive Contact to network, transmit ring
8	Proactive Contact to network, transmit tip

Pin number	Signal
4	Network to Proactive Contact, receive ring
5	Network to Proactive Contact, receive tip
2, 3, 6, 7	Proactive Contact does not use

Each coaxial span connection consists of two cable connections (Rx and Tx). Each coaxial cable contains a central, axial conductor surrounded by a shield. You can ground the shields to the chassis in several ways. Each cable on the Quad E1 coax I/O card has a jumper for the ground connection.

The jumper field uses small suitcase style jumpers as shown in the following diagram: The bottom pin assembly has reference designation PA1 and PA2 for span #1, PB1 and PB2 for span #2, PC1 and PC2 for span #3, and PD1 and PD2 for span #4, respectively. The associated jumpers JA1/JA2, JB1/JB2, JC1/JC2, and JD1/JD2 are used to connect to the pins. The following diagram indicates the designations for PA1 and JA1:



If the jumper is across pins 1 and 2 of the jumper pins, then the connection is coupled to the ground through a capacitor (AC coupling). If the jumper is across pins 2 and 3, then the shield connection is made directly to the ground (DC coupling). If the jumper is not used at all, then no ground connection is made to the shield. This option is valid in some environments.

The following table lists the jumper positions and the relevant shield conditions:

Jumper Position	Shield Condition
1-2	AC coupled to the ground.
2-3	DC coupled to the ground.
No Jumper	No connection to the ground.

Related Links

[Connecting cables to Quad E1 Coax I/O module](#) on page 57

120-Ohm interface cable requirements

Using Proactive Contact, you can use a primary or a secondary connection method.

Primary method

The cable is a CAT5e, 4 pair, 8 wire, Ethernet cable.

The connection is via the 8-pin modular connector on the back panel.

Secondary method

The cable specifications are: minimum four-wire, shielded, twisted pair, 26-gauge (0.129 sq-mm) or larger, Teflon or PVC coated that is data grade.

The shield of the E1 cables attach to the shell of the straight, metallized DB-15P connector and to the ground at the CSU end.

E1 connections in general

Proactive Contact requires one E1 cable for every 24 phone channels, 23 channels is ISDN PRI.

Each cable terminating at Proactive Contact requires 10 feet (3 meters) of slack.

Related Links

[120 Ohm cable connections](#) on page 59

[E1 twisted pair I/O module](#) on page 59

[Labeling E1 cables](#) on page 62

120 Ohm cable connections

Using the twisted pair I/O module, you can connect the 120 ohm coaxial cable to the Proactive Contact dialers.

Related Links

[120-Ohm interface cable requirements](#) on page 59

[E1 twisted pair I/O module](#) on page 59

[Labeling E1 cables](#) on page 62

E1 twisted pair I/O module

You can use two connection modules: primary and secondary.

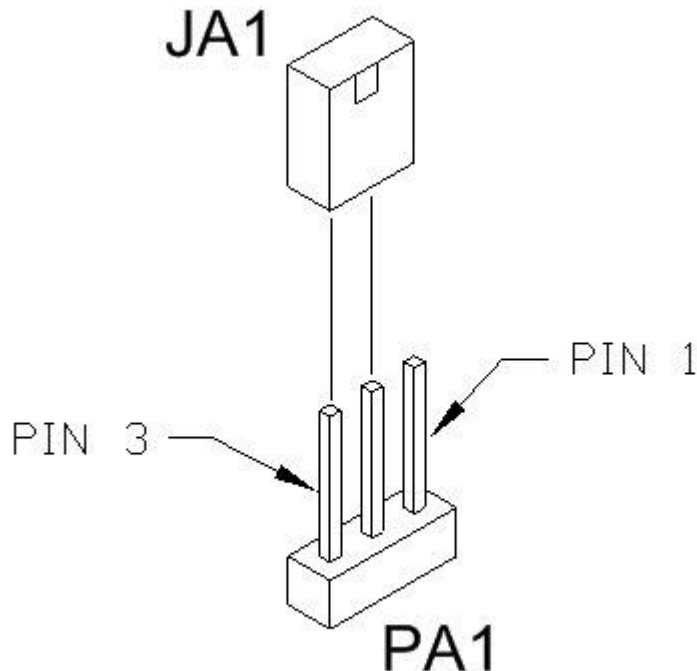
Primary connector

The twisted I/O module pair provides a separate 8-pin modular connector in parallel with the DB-15 connector. Use the 8-pin connector in all new installations. Use the 8-pin modular jack to connect to the CSU, the PBX, or the network.

This connector is available with the following two pinout options:

- The traditional PDS pinout: Used for many years on the dialer switch and defined by the old AT&T Accunet specification.
- The recent and more standard pinout: Used in the industry by many vendors, including Avaya on Communication Manager. A jumper field on the Twisted Pair I/O card controls the pinout option.

The bottom pin assembly has reference designations PA1-PA4 for span #1, PB1-PB4 for span #2, PC1-PC4 for span #3, and PD1-PD4 for span #4, respectively. Use the associated jumpers JA1-JA4, JB1-JB4, and so on to connect to the pins. The following diagram shows that the jumper field uses the small suitcase style jumpers and indicates the designations for PA1 and JA1:



If the jumper is across pins 2 and 3, then the industry standard (Communications Manager) pinouts are connected on the 8-pin modular connector. If the jumper is moved to pins 1 and 2, the pinouts matching traditional PDS (Accunet) are given. The default settings are for industry standard (Communications Manager).

If shields are connected to pins 3 and 6 on the 8-pin modular cable/connector, you can modify the type of ground connection to the shields by another jumper for each span on the Twisted Pair I/O card. Jumper fields PA5 – PD5, and associated jumpers JA5 – JD5, control this option.

*** Note:**

You can connect with unshielded Cat5e cable, so that the shields are not present. The following paragraph and table apply only to shielded cables:

If the jumper is across pins 1 and 2 of the jumper pins, then the connection is coupled to the ground through a capacitor (AC coupling). If the jumper is across pins 2 and 3, then the shield connection is made directly to the ground (DC coupling). If the jumper is not used at all, then no ground connection is made to the shield. The following table shows the jumper position and the relevant shield condition:

Jumper position	Shield condition
1-2	AC coupled to the ground.
2-3	DC coupled to the ground.
No Jumper	No connection to the ground.

The following table shows how to use the 8-pin modular connector, and how to use the pinouts for the jumper settings:

Signal	Traditional PDS Pin Numbers (jumper from 1 to 2)	RJ-48C
Proactive Contact to network, transmit tip	1	5
Proactive Contact to network, transmit ring	8	4
Network to Proactive Contact, receive tip	4	2
Network to Proactive Contact, receive ring	5	1
Span shield connections	3,6	3,6
Not used in Proactive Contact	2,7	7,8

*** Note:**

The pinout in the previous table is an industry standard and matches the pinout used in Communication Manager.

Secondary connector

For network or PBX E1 (CAS or PRI) connections on the PG230RM, the Twisted Pair I/O module provides four DB-15 style connectors, one for each E1 span. Pinouts for the DB-15 connector are shown in the following table:

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

Related Links

[120-Ohm interface cable requirements](#) on page 59

[120 Ohm cable connections](#) on page 59

[Labeling E1 cables](#) on page 62

E1 network equipment

Your E1 circuits can connect either to a phone office (Centrex, LXC, IXC) or to a switch (such as a PBX, PABX, CBX, or ACD). For more information on using cables from the distribution panel to a central office or switch, consult your phone company representative or switch vendor.

If the E1 circuit leaves a building or exceeds the allowed length of the E1 cable, you must install a network termination point (NTP). The phone network provider usually provides the NTP devices.

Avaya does not recommend any specific NTP type and manufacturer.

Install the NTP at the distribution panel that uses punchdown blocks. You must use KRONE Insulation Displacement Connection (IDC) blocks.

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

Related Links

[Labeling E1 cables](#) on page 62

[E1 connection specifications](#) on page 56

Labeling E1 cables

About this task

To make the installation process easier, label each E1 cable pair for each span. During the installation, installer connects 8-pin modular, DB-15P or BNC connectors to Proactive Contact.

Procedure

1. Label one outbound E1 cable as outbound Tx (transmit) and another as outbound Rx (receive).
2. Label one inbound E1 cable as inbound Tx (transmit) and another as inbound Rx (receive).
3. Label agent voice E1 cables with the voice connection type.

Example

The following labels illustrate phone cables that connect dial-in agent voice connections to Proactive Contact ports 01 through 30:

01-30-AG voice/dial-in This label identifies the phone cable that connects dial-in agent voice connections to ports 01 through 30.

AgentHeadsets 01-30 This label identifies the BNC connector for the E1 carrying agent headset lines 01 through 30.

AgentHeadsets 01-30 This label identifies the NTP or the switch for the same cable.

Related Links

[E1 network equipment](#) on page 62
[75-Ohm interface cable requirements](#) on page 56
[75 Ohm cable connections](#) on page 56
[120-Ohm interface cable requirements](#) on page 59
[120 Ohm cable connections](#) on page 59
[E1 twisted pair I/O module](#) on page 59

Supported analog circuits

Analog connection specifications

Proactive Contact can use analog circuits for either ground start or loop start signaling for outbound or inbound calls. To make circuit connections from Proactive Contact to the central office (CO), PBX, or ACD through your distribution panel, you can use 25 twisted pair cables (RJ21) that are 26 AWG or more (0.129 sq-mm).

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

Related Links

[Analog circuits](#) on page 63
[Installing analog cables](#) on page 64
[Attaching cables to the distribution panel](#) on page 64
[Identifying analog cables](#) on page 65

Analog circuits

Proactive Contact supports analog circuits to place and receive calls. The system also uses dedicated analog two-wire circuits to connect its maintenance modem to the phone network.

* Note:

Proactive Contact System and Proactive Contact with PG230RM use analog circuits. Proactive Contact with CTI does not use analog circuits.

The following table summarizes the analog telephone signaling types that Proactive Contact supports. For more information, contact your Avaya vendor.

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

The following table provides information on when you can use each analog signaling type for outbound and inbound calling:

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

Related Links

[Analog connection specifications](#) on page 63

[Installing analog cables](#) on page 64

[Attaching cables to the distribution panel](#) on page 64

[Identifying analog cables](#) on page 65

Installing analog cables

About this task

The cable requirement for Proactive Contact is 26 AWG (0.129 sq-millimeters) or larger.

Procedure

1. Install cables from Proactive Contact to a punch-down block at the distribution panel. Use one cable for every 16 two-wire circuit.
2. Leave 10 feet (3 meters) of slack for each cable terminating at the Proactive Contact System.

* Note:

The installer connects the 50-pin Telco connectors to the Proactive Contact System.

Related Links

[Attaching cables to the distribution panel](#) on page 64

[Identifying analog cables](#) on page 65

[Analog circuits](#) on page 63

[Analog connection specifications](#) on page 63

Attaching cables to the distribution panel

Procedure

Attach a 25-pair cable to the block with another 50-pin male 90-degree Telco connector. The pinouts on the 25-pin cable follow the RJ-21 cable standard.

* Note:

Remember to install bridge clips at the punchdown block.

For more information on cabling from the distribution panel to a central office or switch, consult your phone company representative or switch vendor.

Related Links

[Installing analog cables](#) on page 64

[Identifying analog cables](#) on page 65

[Analog circuits](#) on page 63

[Analog connection specifications](#) on page 63

Identifying analog cables

Procedure

You must label each analog cable clearly. During installation, the installer connects the Telco connectors to the Avaya Proactive Contact System.

For two-wire 50-pin Telco connectors, use color codes, such as BL-blue, BK-black, BR-brown, G-green, O-orange, R-red, SL-slate gray, V-violet, W-white, and Y-yellow as listed in the following table:

Pin number	Line number	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
15	15	Ring	SL-BK
16	16	Ring	BL-Y
17	Not used	N/A	O-Y
18	Not used	N/A	G-Y
19	Not used	N/A	BR-Y
20	Not used	N/A	SL-Y
21	Not used	N/A	BL-V
22	Not used	N/A	O-V
23	Not used	N/A	G-V
24	Not used	N/A	BR-V
25	Not used	N/A	SL-V
26	1	Tip	W-BL
27	2	Tip	W-O

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

Related Links

[Installing analog cables](#) on page 64

[Attaching cables to the distribution panel](#) on page 64

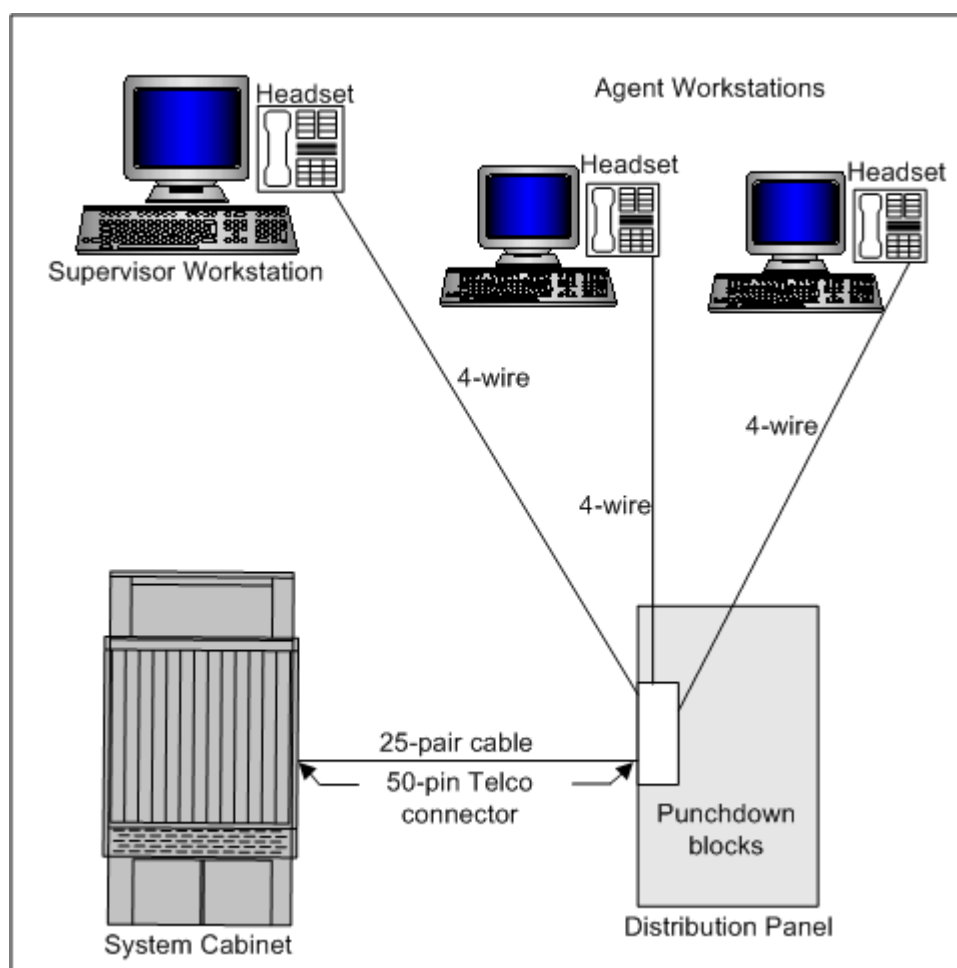
[Analog circuits](#) on page 63

[Analog connection specifications](#) on page 63

Analog direct-connect headsets

Analog direct-connect headsets

Proactive Contact can use special 4-wire analog voice circuits for direct-connect, dedicated, agent headsets.



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

! Important:

Avaya does not provide any acoustic shock protection circuitry in the Avaya Proactive Contact switch. Acoustic protection must be present in the customer-provided headset. The customer is responsible for providing acoustic shock protection.

Related Links

[Using cables with direct-connect headsets](#) on page 67

[Using cables to direct-connect headsets to distribution panel](#) on page 68

[Labeling headset cables](#) on page 69

Using cables with direct-connect headsets

About this task

Use one 25-pair cable for every 12 direct-connect headsets.



Caution:

The maximum cable length from the Proactive Contact to any headset is 3,000 feet (900 meters).

Procedure

1. Install cables from Proactive Contact to a punchdown block at the distribution panel.
2. Install cables from the distribution panel to each agent workstation and supervisor workstation that use a direct-connect headset.
3. Leave 10 feet (3 meters) of slack for each cable terminating at Proactive Contact.

Related Links

[Using cables to direct-connect headsets to distribution panel](#) on page 68

[Labeling headset cables](#) on page 69

[Analog direct-connect headsets](#) on page 66

Using cables to direct-connect headsets to distribution panel

About this task

This task is for the Proactive Contact system and the Proactive Contact with PG230RM system and not for the Proactive Contact with CTI system.



Important:

Avaya does not provide any acoustic shock protection circuitry in the Avaya Proactive Contact switch. Acoustic protection must be present in the customer-provided headset. The customer is responsible for providing acoustic shock protection.

Procedure

1. From the Proactive Contact System or the Proactive Contact with PG230RM System to the distribution panel, connect one 50-pin male 90-degree Telco connector to a 25-twisted pair Telco, 26 gauge (0.129 sq-mm) or larger cable for every 12 headsets.
2. At the distribution panel, attach the 25-pair cable to the block with another 50-pin male Telco connector.
3. Wire the cable that runs from the distribution panel to the headsets directly into the punchdown block.
4. Connect one four-wire (minimum), shielded, twisted-pair cable to the punchdown block for each headset.
5. Run the cable to within 6 feet (1.8 meters) of each headset.
6. Connect two pairs of wires for each headset.

The connector at the headset can vary depending on the selected model.

The following table lists 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

Related Links

[Using cables with direct-connect headsets](#) on page 67

[Labeling headset cables](#) on page 69

[Analog direct-connect headsets](#) on page 66

[50 pin Telco pinouts](#) on page 69

Labeling headset cables

About this task

During the installation, installer connects each 25-pair cable to Proactive Contact.

Procedure

Label each cable clearly.

Example

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

Related Links

[Using cables with direct-connect headsets](#) on page 67

[Using cables to direct-connect headsets to distribution panel](#) on page 68

[Analog direct-connect headsets](#) on page 66

50 pin Telco pinouts

The following table lists the 50-pin Telco pinout for direct-connect or dedicated headset connections. The color codes in the table are: BL-blue, BK-black, BR-brown, G-green, O-orange, R-red, SL-slate gray, V-violet, W-white, Y-yellow.

Pin number	Headset number	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

Pin number	Headset number	Ear/Mouth	Tip/Ring	Wire color
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
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

Pin number	Headset number	Ear/Mouth	Tip/Ring	Wire color
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	N/A	V-SL

Related Links

[Using cables to direct-connect headsets to distribution panel](#) on page 68

CTI

Computer Telephony Adjunct Links

Computer Telephony Integration (CTI) links provide adjunct-switch connectivity using the ASAI protocol with Communication Manager. The term CTI link is a generic term for a link that provides connectivity between Communication Manager and adjunct computing resources.

Adjunct Links enable Adjunct Call Control, Domain Control, Event Notification, and Request Feature.

Adjunct Links expand the linking capabilities between Communication Manager and the adjunct applications, such as AES, to enable the following capability groups. The linking capabilities are available only on links that are administered as Adjunct Links.

- Adjunct Routing
- Answering Machine Detection
- Selective Listening
- Switch Classified Outbound Calls
- Integrated Services Digital Network (ISDN) Redirecting Number Information
- Network Call Redirection (NCR) Adjunct Routing

Agent states

The Agent States feature defines the work mode of the agents who are currently logged in to Proactive Contact. The Agent States feature determines if an agent is available to take outbound calls. If an agent is logged in and in the Ready state (Manual In or Auto In), calls must not be delivered to that agent.

Turn on the Agent States feature for Proactive Contact with CTI to receive agent work mode events, such as Logged Out, Logged In, Ready, Not Ready, and Work Not Ready. The system uses this

information to prevent the dialer from delivering outbound calls to an agent who is ready for inbound work.

The Agent States feature applies only to the links that are administered as ADJLNK.

The following table lists the supported Agent States or work modes:

Agent state/work mode	Description
ACD	The agent is engaged in an ACD call.
ACW	The agent is involved in call-related work but not on the call.
AI	Auto In, same as the Ready state.
AUX	The agent is involved in non-ACD work, or the agent is on a break, a meeting, at lunch, or otherwise unavailable. The ACD recognizes that though the extension is staffed, the system must not route calls to that agent for an extended period of time.
DACD	The agent is engaged in a direct agent ACD call.
DACW	The agent is in the after call work (ACW) state for a direct agent ACD call.
MI	Manual In, same as the Ready state.
OTHER	The agent is doing other work. If an agent is working in three splits/skills and receives a call from one, the ACD puts the agent in the OTHER state for the other two.
READY	The agent is logged in (Manual In or Auto In) and is ready to take inbound work. No outbound calls to be delivered to the Ready agent.
RING	The agent receives a call on the phone. RING is the time after leaving the queue and before the agent answers the call.
UNKNOWN	The agent is in a state that is not recognized. The agent remains in the unknown state until the condition is cleared or the agent completes the current ACD call and any current ACW.
UNSTAFF	The time a call rings at the phone of an agent after leaving the queue and before the agent answers the call.

Call classification

The Call Classification feature classifies the detected tones and supports the following:

- Recognition and classification of progress tones
- Special information tones
- Answering machines
- Modem tones

The accuracy of classification varies with the type of tone and method of tone generation.

Universal Call ID

Universal Call ID (UCID) is a unique tag assigned to each call. The application uses UCID to track the course of a call from origination to disconnection. UCID tracks the events for a call in terms of

transfer, conference, routing through a variety of networks and Avaya Communication Manager servers, voice responses, and so on.

UCID is used in associating call events to a particular call in Proactive Contact with CTI as the switch ID can change during the life of a call.

CTI links

The CTI links provide connectivity between Proactive Contact and the Communication Manager switch through Application Enablement Services (AES).

Proactive Contact uses the ADJ-IP type of Computer Telephony Adjunct Link.

CTI configuration information

Before you configure Proactive Contact with CTI, you require the following Application Enablement Services (AES) information:

- TLINK name
- IP address of AES
- Administrator login ID and password

You also need to know:

- VDN numbers
- Announcement extension numbers
- Phantom extension numbers (for Agent Blending only)
- Reason code (for Agent Blending only)
- Agents are released to inbound calls in manual (MI) or automatic (AI) mode (for Agent Blending only)

Related Links

[Announcement ports](#) on page 73

[Phantom extension](#) on page 74

Announcement ports

The Proactive Contact with CTI configuration requires announcement ports for the following uses:

- Wait queue messages played to customers when no agent is available.
- Messages to be played to the customer as directed by the agent. For instance, a message can play when the agent is connected to an answering machine.
- Virtual agents messages for the customers that are reached through a virtual agent job. For example, a public service announcement or the beginning of a voice dialog.
- Messages for blended agents.
- Agent login messages that agents hear at the first login.

Related Links

[CTI configuration information](#) on page 73

Phantom extension

A phantom extension is a call that originates from a station Administered Without Hardware (AWOH). Phantom numbers are used when making acquisition calls. The acquisition call is made to the extension of the acquisition domain. When an agent answers an acquisition call:

1. The extension of the agent is collected.
2. The agent is put into AUXWORK mode.
3. The acquisition call is disconnected.

You can send a reason code so that the reporting feature in Communication Manager marks the call as an acquisition call when the agent is put into AUXWORK mode . The number of phantom extensions determine the number of phantom calls.

Related Links

[CTI configuration information](#) on page 73

[Vectors](#) on page 74

Vectors

A vector is a set of commands that defines the processing of a call. For example, a call can be queued and then routed to another destination. A vector can contain up to 32 command steps. You can link multiple vectors together to extend processing capabilities or to process calls to the same or different answering destinations. The number of calls that can use the same multiple vectors and process the steps independently is limitless.

Related Links

[Phantom extension](#) on page 74

[Vector Directory Numbers](#) on page 74

Vector Directory Numbers

Call Vectoring is the process of defining vector programs that determine the routing and call treatment for a specific call. A Vector Directory Number (VDN) is an internal telephone number that, in turn, directs the call to a specific vector.

The VDN defines the that the caller wants. The VDN can represent the call type or category, such as billing or customer service. Multiple VDNs can point to the same or to different vectors, depending on whether the relevant calls receive the same or different treatment.

Related Links

[Vectors](#) on page 74

Blending concepts

Intelligent call blending

Proactive Contact uses Intelligent Call Blending (ICB) as a call blending method for call centers for which outbound dialing is the main priority. Proactive Contact and Proactive Contact with PG230RM options support ICB. Proactive Contact with CTI does not support ICB.

ICB distributes a blend of inbound and outbound calls to Proactive Contact agents. Usually, the ACD transfers inbound calls to the available inbound or blend agents on Proactive Contact using dedicated inbound T1 or E1 lines from the ACD to the Proactive Contact switch. When an agent is unavailable, Proactive Contact places calls in the inbound wait queue. If your system does not use an ACD, Proactive Contact transfers inbound calls to available inbound or blend agents.

With ICB, 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 inbound call volume decreases, Proactive Contact returns to passing outbound calls to the blend agents. ICB does not require special switch settings.

ICB routes inbound calls to agents who otherwise participate in outbound jobs. In ICB, 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, Proactive Contact returns to passing outbound calls to the blend agents. ICB works with inbound trunks from a CO, a PBX, or with inbound trunks from an ACD.

When Proactive Contact is working with a CO or PBX, inbound calls can be routed directly to Proactive Contact.

When Proactive Contact is working with an ACD, inbound calls are distributed from the ACD to Proactive Contact. The distribution is based on the thresholds configured on the ACD.

Related Links

[Agent blending](#) on page 75

Agent blending

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

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

Proactive Contact 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 and 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.

To set up Agent Blending, coordinate the settings on ACD and Proactive Contact. Many ACDs require special settings and have unique terminology. Work with your switch and Avaya technical support representatives to ensure that the system settings are compatible.

*** Note:**

For blended agents, Proactive Contact requires one TSAPI license on the CM per agent on a Proactive Contact with PG230.

Related Links

[Intelligent call blending](#) on page 75

[Predictive agent blending](#) on page 76

Blending and ACDs

Setting up Agent Blending requires coordinating settings on the ACD and on Proactive Contact. Many ACDs require special settings and have unique terminology. Work with your switch and Avaya technical support representatives to ensure that the system settings are compatible.

Predictive agent blending

If your first priority is servicing your inbound customers and your inbound volume is high, you can benefit from using Predictive Agent Blending. Predictive Agent Blending focuses on the inbound mission. Predictive Agent Blending acquires agents for outbound only when the Service Level (SL) or Average Speed to Answer (ASA) parameters are above the desired value. These agents take inbound calls until Proactive Contact predicts that there are enough agents on inbound. The prediction about enough agents on inbound is based on the service level requirements you set. Proactive Contact 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 can 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. For this movement, the agents must receive internal, station-to-station, calls.

Two control method options available within Predictive Agent Blending are: 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 a minimum of one acquire domain and one inbound domain. Each type requires different settings.

Related Links

[Average speed to answer](#) on page 77

[Service level \(SL\)](#) on page 78

[Agent blending](#) on page 75

[Proactive agent blending](#) on page 79

Average speed to answer

This domain group type uses the target average speed to answer (ASA) field (MAAS) to calculate when to acquire and release agents. Agents are acquired for outbound calls when the ASA for 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 value. The following table describes the parameters and their descriptions for average speed to answer:

Parameter	Description
Desired level (required)	The average number of seconds within which agents must 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 Proactive Contact uses to calculate the ASA. The ASA parameter influences how responsive the system is to fluctuations in answer delays. This interval is a rolling interval that starts whenever you start Proactive Contact 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. Use the traffic intensity threshold setting to determine how quickly Proactive Contact moves agents between inbound and outbound calls. The aim is to prevent agents from being acquired or released 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, Proactive Contact 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. The minimum number of agents on outbound setting overrides the Desired level setting. For example, irrespective of the ASA level, there will always be the specified number of agents unavailable to handle inbound calls. Use this option when you must meet outbound goals before you service inbound calls.
Initial traffic rate (optional)	The estimated number of calls per second. Proactive Contact uses the initial traffic rate for the first 30 calls. Initial traffic rate ensures that there are enough agents to handle the first 30 calls.
Minimum talk time (optional)	The estimated minimum number of seconds agents spend connected on each inbound call. Proactive Contact adds 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 number of seconds agents spend, after a call, on updating records and processing customer information.

Related Links

[Predictive agent blending](#) on page 76

Service level (SL)

The Service Level domain group type uses the Service Criterion (SC), Desired Service Level (DSL), and Abatement Service Level (ASL) fields to calculate when to acquire and release agents.

- Agents are acquired for outbound calls when the percentage of inbound calls answered within the SC time is greater than or equal to the DSL percentage.
- Acquisitions stop when the actual service level reaches the Abatement Service Level value.
- Agents are 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.

The following table describes the SL parameters:

Parameter	Definition
Desired Service Level (required)	The percentage of calls agents can answer within the Service Criterion.
Abatement Service Level (required)	The percentage (SL) where Proactive Contact stops acquiring agents for outbound calling. Select a value greater than the Desired level and less than or equal to 100.
Service criterion (required)	The maximum time within which an agent must answer a call. Service criterion measures the number of seconds for which an inbound call is in the ACD queue.
Service level interval (required)	The interval that Proactive Contact uses to calculate the SL. The service level interval parameter influences how responsive Proactive Contact is to the fluctuations in answer delays. This interval is a rolling interval that starts whenever you start Proactive Contact 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. The traffic intensity threshold setting determines how quickly Proactive Contact moves agents between inbound and outbound calls. The goal is to prevent agents from being acquired or released 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, Proactive Contact 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. Minimum number of agents on outbound setting overrides the Desired level setting. For example, even if the ASA is low, these many agents are always unavailable to handle inbound calls. Use the minimum number of agents on outbound option when you must meet outbound goals before you service inbound calls.

Parameter	Definition
Initial traffic rate (optional)	The estimated number of calls per second. Proactive Contact uses this rate for the first 30 calls. Initial traffic rate ensures that there are enough agents to handle the first 30 calls.
Minimum talk time (optional)	The estimated minimum seconds agents spend connected to each inbound call. Proactive Contact adds talk time and ACW 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, on updating records and processing information.

Related Links

[Predictive agent blending](#) on page 76

Proactive agent blending

If your focus is on outbound calling, use Proactive Agent Blending as with Proactive Agent Blending, you can service a low volume of inbound customers. 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 in, Proactive Contact immediately acquires the agent for outbound calling. When an inbound call comes into the ACD queue, Proactive Contact releases the agent to handle the call.

You can configure the number of queued calls before agents release to inbound for each OB_ONLY domain group. If inbound calls continue in Proactive Contact continues to release agents. As soon as the queue is empty, Proactive Contact acquires the agent again for the outbound calls.

Related Links

[Predictive agent blending](#) on page 76

[Outbound agent blend](#) on page 79

Outbound agent blend

Outbound Agent Blending acquires ACD agents to handle outbound calls as soon as the agents log in to Proactive Contact and the ACD. Since there is no inbound domain in the OB_ONLY domain group, agents assigned to an Outbound domain are not released to handle inbound calls.

Related Links

[Proactive agent blending](#) on page 79

[Inbound calling and agent blending](#) on page 80

Inbound calling and agent blending

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

Proactive Contact 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. The system 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.

Related Links

[Outbound agent blend](#) on page 79

Blending setup

Proactive Contact elements for agent blending setup

During the agent blending setup process, specify the following elements:

- Agent Blending settings
- Domains
- Domain groups
- Domain group control methods

Your Avaya representative configures the Agent Blending software to match your specifications.

If you make changes to Agent Blending later, define these settings in the Supervisor Main menu of the character-based application or use the GUI based Editor application in the Supervisor Suite.

Related Links

[Domains](#) on page 80

Domains

Irrespective of the type of switch your system uses, Proactive Contact requires domains and domain groups. Domains are the Proactive Contact name for ACD call queues that are defined on the ACD and on Proactive Contact.

Each domain is a member of a domain group. Agent Blending collects calling events for each domain and adds them by domain group for statistical calculation. The domain group uses these statistics to determine when to move ACD agents between inbound and outbound calling. The domain group does not add statistics across domain groups, and the domain group does not monitor activity in call queues that are not part of a domain group.

After you install the system, assign your agents to domains based on a skill set. For example, you can 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

Related Links

[Configure domains](#) on page 81

[Domain groups](#) on page 83

[Proactive Contact elements for agent blending setup](#) on page 80

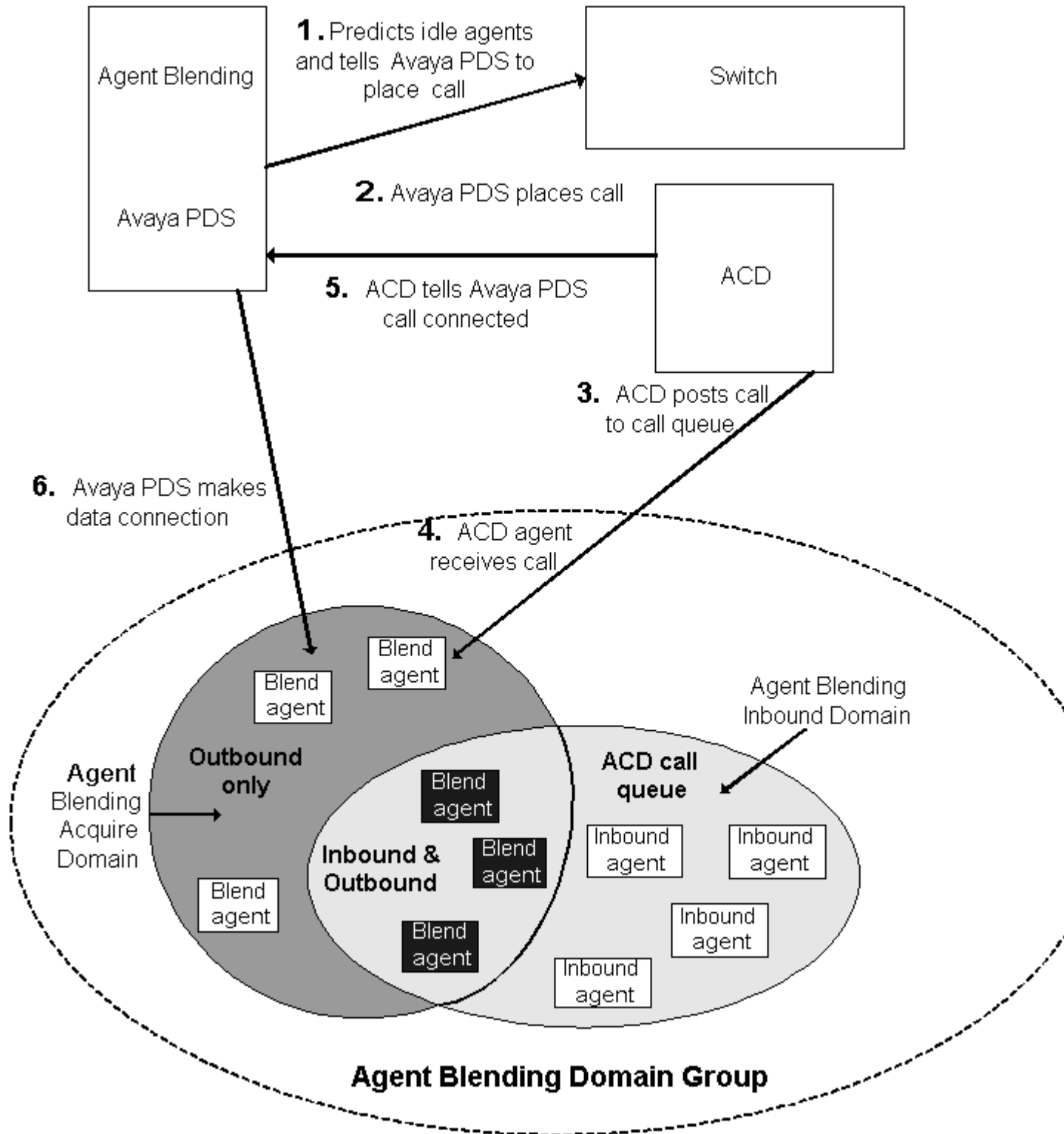
[Agent logins](#) on page 83

Configure domains

The types of domains you configure depend on 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. Agent Blending uses acquire domains to acquire agents for outbound calling.

In addition to inbound and acquire domains, Proactive Contact recognizes two additional domains: auxiliary and transient domains. Some ACDs use auxiliary domains to monitor all the calling activities in a domain group. Meridian switches without the multiple queues assignment (MQA) use transient domains to temporarily hold agents that are switching between inbound and outbound jobs.



Related Links

[Domains](#) on page 80

Domain groups

A domain group contains a minimum of one domain. During site preparation, identify the domains to be grouped.

Define each domain group 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)

Related Links

[Domains](#) on page 80

Agent logins

In an Agent Blending system, an agent can handle either only inbound calls, both inbound and outbound calls, or only outbound calls. An agent who handles only inbound calls logs on to the ACD. Proactive Contact can monitor the inbound calling activity of an agent based on the dialer and the ACD configuration.

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

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

The following table summarizes agent logins based on the calls an agent handles and whether Agent Blending must monitor agents:

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

Related Links

[Domains](#) on page 80

Chapter 5: Deployment options

Material Codes for HP ProLiant DL360 G7 Server

The following table provides a list of Material Codes, description, and quantity required to set up a HP ProLiant DL360 G7 Server for Proactive Contact:

HP Material Codes	Description	Quantity
579237-B21	HP DL360G7 CTO Chassis	1
588072-L21	HP E5620 DL360G7 FIO Kit	1
500658-B21	HP 4GB 2Rx8 PC3-10600R-9 Kit	6
507125-B21	HP 146GB 10K 6G 2.5 SAS DP HDD	2
532068-B21	HP DL360 12.7mm SATA DVD-RW Kit	1
462968-B21	HP 256MB P-Series Cache Upgrade	1
462969-B21	HP 650 mAh P-Series Battery	1
503296-B21	HP 460W HE 12V Hotplg AC Pwr Supply Kit	2

About deployment options

Proactive Contact offers the following two deployment options to provide contact capabilities to customers in moderate and high call-volume markets:

- Proactive Contact with Application Enablement Services (AES)
- Proactive Contact with PG230RM

Each option has a specific set of components and requirements.

Related Links

[Proactive Contact with PG230RM](#) on page 85

[Proactive Contact with Computer Telephony Integration \(CTI\)](#) on page 86

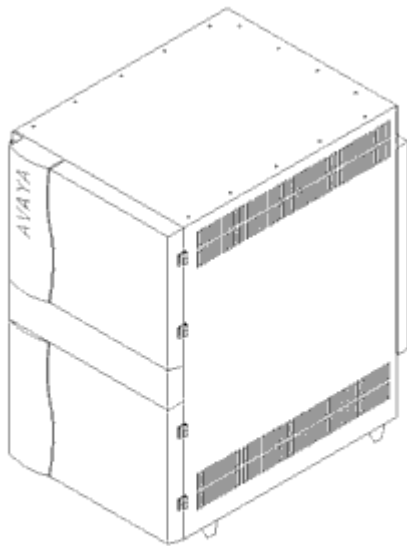
Proactive Contact with PG230RM

With Proactive Contact with PG230RM implementation, Avaya provides the rack mountable Avaya PG230RM switch and a set of CDs and DVDs containing the Proactive Contact software applications.

The Proactive Contact with PG230RM implementation provides latitude when sourcing the system components, therefore, resulting in cost savings. In Proactive Contact PG230RM solution, you can either provide the additional components or can purchase them through Avaya.

You must have PG230 for configuring Proactive Contact with AACC and Predictive Agent Blending (PAB)

The following diagram is an illustration of the PG230RM cabinet:



PG230RM Cabinet
(Rack mount)

The main functions of PG230RM deployment include:

- Receiving customer records from the host computer of your call center
- Selecting and sorting customer records based on the business goals of your call center
- Allowing agents to update customer information on an agent screen or on the host
- Dialing in to the customers based on their phone numbers in records
- Passing specific call types to agents
- Adjusting the calling pace to meet the productivity and quality requirements of your call center

- Monitoring ACD inbound traffic and predicting when to acquire and release ACD agents for outbound calling (Agent Blending) with AES integration and is optional.
- Supporting outbound, inbound, and blend jobs
- Generating a variety of reports, including job, agent, system, and administrative
- Uploading updated record information to the host (optional)

Related Links

[About deployment options](#) on page 84

Proactive Contact with Computer Telephony Integration (CTI)

Proactive Contact with CTI is a CTI-based dialer software solution that uses Application Enablement Services (AES) to communicate with Avaya Aura® Communication Manager.

AES uses Communication Manager for call classification and announcements. This option does not work with wait for beep detection for answering machines.

The main functions of Proactive Contact with CTI include:

- Receiving customer records from the host computer of your call center
- Selecting and sorting customer records based on the business goals of your call center
- Allowing agents to update customer information on an agent screen or on the host
- Dialing in to the customers based on their phone numbers in records.
- Passing specific call types to agents
- Adjusting the calling pace to meet the productivity and quality requirements of your call center
- Monitoring ACD inbound traffic and predicting when to acquire and release ACD agents for outbound calling (Agent Blending)
- Support outbound jobs
- Generating a variety of reports, including job, agent, system, and administrative
- Uploading updated record information to the host (optional)

Use Proactive Contact with CTI only for small and mid-sized businesses with up to 200 agents.

For Proactive Contact with CTI, an agent telephone supports transferring and conferencing calls. By default, the transfer and conference buttons on the agent telephone are disabled. However, the transfer and conference buttons for operators are not disabled. Therefore, these buttons must be disabled manually on Proactive Contact with CTI.

Note:

Proactive Contact does not support AACC configuration with CTI dialer.

Related Links

[About deployment options](#) on page 84

Pods Deployment

Pod deployment options

You can configure up to 10 Proactive Contact systems in a group called a pod. All systems in a pod can be a combination of Proactive Contact with PG230RM.

*** Note:**

You must have Lightweight Directory Access Protocol (LDAP) configured for each of the dialers to be included in a pod. A pod without LDAP is not supported in Proactive Contact System.

All dialers in a pod configuration must be of the same release version.

Related Links

[Shared features in a pod](#) on page 87

[Pod management](#) on page 88

[Primary and secondary systems](#) on page 88

[Pod impacts](#) on page 89

[Switching on pods](#) on page 90

[Pod checklist](#) on page 90

Shared features in a pod

In a pod, systems are connected through a mid-tier server. If you connect the systems in a pod, you can share the following features among systems:

- Calling lists
- Jobs
- Phone strategies
- Record selections
- Logins

A pod environment increases the outreach capacity of your company. Using pod functionality, you can manage up to ten systems in a distributed architecture through a single, unified administration and supervisor interface.

The shared features in a pod are available only in a default tenant.

Use Proactive Contact Supervisor to easily manage operations and monitor traffic and workload across the pod network.

Shared calling list

With Proactive Contact, you can run a job that uses calling list data from another system in a pod. To run such a job, the calling list format must exist on each system in the pod. The job is created and run on each dialer in the pod. Multiple systems calling the same calling list data at the same time provide scalability on a single campaign beyond the physical agent limitation of one system.

 Caution:

Compared to a primary dialer, the performance of agents on the remote dialer in a pod sharing a common list is degraded. The performance depends on network conditions, the calling strategy, and the customer response rate. The agent idle time on the remote dialers can vary significantly when compared to that on the primary dialer.

The primary advantage of a shared calling list is that multiple agents logged in to different secondary systems at different locations can use the same calling list data. A supervisor can use a single administrator workstation to create and start a job on each system in a pod. After agents log in to their systems, supervisors can monitor their activities with a single, real-time view.

 Note:

In a pod environment, agents log into the local dialer. The dialer where the agent is logged in makes the calls for that agent, even when using the calling list data from a different system in the pod. Depending on the geographic location of the secondary systems and the numbers called, you must configure the calling list for international dialing.

Related Links

[Pod deployment options](#) on page 87

Pod management

Using the pod implementation option, you can manage, monitor, and control all the systems in a pod from a single Supervisor workstation.

Manage agent log-in IDs: In a pod, log-in IDs and passwords are synchronized between various dialers using Lightweight Directory Access Protocol (LDAP) database.

Monitor campaigns and jobs: Monitor supports multiple systems across the pod. For example, you can aggregate real-time job data from multiple systems into a single view of the overall pod.

Control campaigns and jobs: Editor provides control functions for all the systems in a pod. Supervisor can stop and start jobs, adjust Expert Calling Ratio, assign line pools, and perform other job control functions from a single Supervisor workstation.

Administer system: Supervisor applications and tools provide administration across all the systems in a pod. For example, copying, deleting, and modifying phone strategies, record selections, or jobs, regardless of the system on which the strategies, record selections or jobs reside.

Related Links

[Pod deployment options](#) on page 87

Primary and secondary systems

One of the systems in a pod is configured as the primary system. The primary system coordinates data management with the database and the secondary systems in the pod.

Primary system

Each pod must have a primary system. The primary system runs the middle tier software, controlling and coordinating data management. Other systems feed data to the middle tier of the primary

system, which processes the data and makes the data available for monitoring and reporting. Thus, the system supervisor can view the status or create reports that include the operations of all systems in the pod.

Secondary system

When using shared features, a secondary systems must have a common configuration, such as the same calling list applications, completion codes, and keys files. These configurations must be the same as on the primary system. The completion codes must always be in sync with each other on all the dialers of the pod.

Related Links

[Pod deployment options](#) on page 87

Pod impacts

If you work with a pod containing two to ten systems, note the following when you manage, control, and administer settings across multiple systems:

Multiple systems

Monitor displays data for all the systems in a pod. However, the pod controls are turned off by default.

Completion codes

A system file named `compcode.cfg` contains completion codes, the corresponding code numbers, and code descriptions. Each system has one `compcode.cfg` file.

Completion codes are used in different ways. Initially, the agent uses completion codes to end a call with a customer, and to mark the call outcome on the customer record. Completion codes are also used for reporting and are essential for accurate reporting and to determine the success of a campaign.

The Supervisor suite of applications automatically updates all the systems in a pod to keep the completion code files on all the dialers in sync. The changes that Supervisor makes to the completion code file are available to all the dialers after the start and stop of the PDS service. A change in the completion code on one machine is implemented on all the dialers in the pod.

If the pod has ten systems, there are ten `compcode.cfg` files. You must keep all completion code files in sync for the following reasons:

- Agents use the same codes for the same call outcome.
- Completion codes reporting is accurate.
- Troubleshooting for reasons of inaccurate completion codes is eliminated.
- All system completion codes are in sync.
- Data is effectively aggregated across systems. Completion code descriptions and completion code assignments, such as RPC, Abandon, and Closure, must remain consistent across all the systems in a pod.

Jobs naming guidelines

Use the following guidelines for naming jobs, when you create or modify jobs:

- Do not create multiple jobs on multiple systems with the same name if the jobs have different job parameters. When you use the same name on jobs, you limit your ability to aggregate similar data across multiple systems.
- To control jobs with similar parameters, also called similar jobs, assign the same name to the jobs on different systems in a single step. For example, you can change the quota on job1 on all systems in a single step.

Related Links

[Pod deployment options](#) on page 87

Switching on pods

About this task

In Proactive Contact, the controls for a pod are switched off by default. To switch on the pod control, perform the following procedure:

Procedure

1. Select **Settings > Options**
2. Select the systems in a pod to view.
3. After you switch on the pod control, each job control dialog box is highlighted with a check mark. For example, **Job Linking** or **Change Time Zones**. To control a single system, clear the check box.

Related Links

[Pod deployment options](#) on page 87

[Pod checklist](#) on page 90

Pod checklist

The following table explains the checklist for the POD requirements:

#	Description	Notes	✓
1	Designates one of the systems to be the primary system in the pod. The primary system is the statistics collection location for the entire pod.	—	—
2	Provides the primary system IP address and DNS name to your Avaya Project Manager.	—	—

#	Description	Notes	✓
3	Provides the secondary systems a maximum of three IP addresses and DNS names to your Avaya Project Manager.	—	—
4	Determines whether the primary and secondary systems are configured with shared features.	 Tip: For ease of management and consistency in reporting, the configuration must be identical between the systems in a pod.	—
5	Determines whether all the dialers in a pod configuration are on the same version of dialer software.	—	—

Related Links

[Switching on pods](#) on page 90

[Pod deployment options](#) on page 87

Chapter 6: Hardware specifications

Deployment option specifications

Rack Specifications

If a customer provides a rack for all the components in the system, the rack must comply with the following specifications:

- Use a 39U enclosure if using a UPS. Otherwise, a 31U enclosure is adequate for the components.
- Depth must be more than 800 mm, that is, 31.5 inches.
- You can mount the tape drive and Lantronix network access device directly in the 19-inch rack without needing a separate shelf. If you cannot mount the drive and the device directly, you require a shelf.
- A separate shelf is required for CPU if the CPU is not mounted on a rack.
- The network switch and modem require a shelf.
- If a UPS is required, the UPS must be mounted at the bottom of the rack.
- Three shelves might be required depending on how the tape drive and Lantronix unit are mounted.
- Mounting order, from bottom to top: UPS ,if applicable, PG230RM, Lantronix or Modem/Hub, CPU, Tape Drive.
- From bottom up, all:-Dow: 5u for UPS and 1u space, if applicable, 18u for the PG230RM unit, 1u space, 2u for Lantronix on a shelf or rack mounted, 1u for space, 5u for CPU, 1u for space 3u for modem/hub/tape drive and 37u with the UPS (if applicable), and 31u with allowing 1U space for cabling runs and access between components without the UPS.

Proactive Contact with PG230RM components

To prepare for the installation of Proactive Contact with PG230RM system, develop a rack mounting plan. The mounting plan includes the location of each component. Use the specifications in the related topics to determine the requirements of each component and to identify heating, ventilation, and air conditioning requirements.

In addition to meeting the requirements in this section, you must comply with the requirements in *Avaya Proactive Contact Safety and Regulation Information*. You must also comply with all local regulations that govern the installation of your PG230RM.

**Electrostatic alert:**

Failure to comply with the requirements described in this section can lead to severe damage of your PG230RM equipment.

**Caution:**

You can mount the components in the rack before the Avaya installation personnel arrive at your site. The fully-loaded unit (cards and UPS) can weigh up to 150 pounds.

The Proactive Contact with PG230RM deployment option contains the following components:

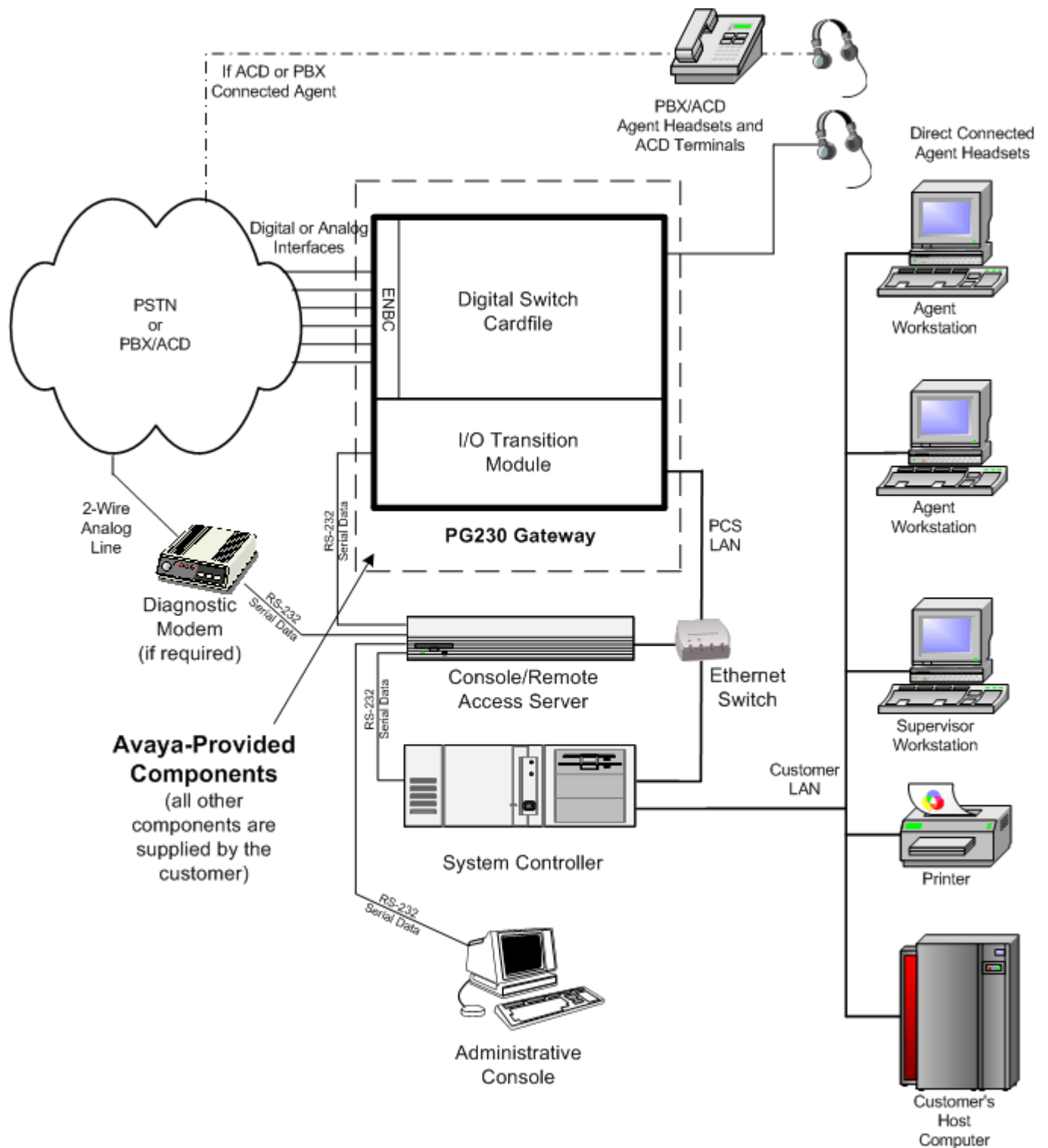
- Avaya PG230RM system
- Maintenance modem that the customer provides or that you purchase from Avaya
- Remote access server that Avaya provides
- Proactive Contact System CPU (Avaya or customer provided)
- Uninterruptible power supply (UPS) (Customer provided)
- Disk mirroring (optional)
- Ethernet switch that the customer provides or that you purchase from Avaya)
- Administrator console that the customer provides
- Supervisor workstation that the customer provides
- Agent workstations that the customer provides
- Printers that the customer provides

Related Links

[PG230RM deployment](#) on page 93

PG230RM deployment

The following diagram illustrates a typical PG230RM deployment with all the supporting equipment:



Related Links

[Proactive Contact with PG230RM components](#) on page 92

Proactive Contact with CTI specifications

This section describes the equipment that you must install for Proactive Contact with CTI to function properly.

This deployment option contains the following components:

- Maintenance modem that the customer provides or you can purchase from Avaya.
- AES server.
- Communication Manager (Avaya Aura® CM) must have TN744E call classification cards or newer.

One TN744E card for each eight outbound lines that you expect to use for the dialer during peak production.

- The PBX must have the latest IPSI firmware installed, at least version 38.
- Remote access server that Avaya provides
- Proactive Contact System CPU that the customer provides or you can purchase from Avaya
- Uninterruptible power supply (UPS) that the customer provides
- Ethernet switch that the customer provides or you can purchase from Avaya
- Administrator console that the customer provides
- Supervisor workstation that the customer provides
- Agent workstations that the customer provides
- Printers that the customer provides

Note:

For a CTI deployment, you can use G450 with the soft call classification, the Announcement ports, and additional gateways added for additional resources for these services. This is a solution that costs lower than the G650 which requires the TN744E cards and the Announcement boards.

Pod deployment specifications

You can combine up to ten of the same system types together in a pod. See the other deployment specifications for information on components. You must designate one of the systems in the pod to be the primary system. The primary system functions as the statistics collection location for the entire pod. Determine whether the primary and secondary systems must be configured with the shared features.

Important:

The systems in the pod can be a combination of multiple Proactive Contact with PG230RM or multiple Proactive Contact with CTI. The Proactive Contact software version present on all the dialers must be same.

Cabinet specifications

Avaya PG230RM cabinet specifications

The PG230RM cabinet contains the digital switch card cage to place and answer phone calls.

Components that connect to the PG230RM cabinet include:

- Maintenance modem and remote access server for remote technical support of the system.
- Avaya Proactive Contact System CPU to run the system software with a DVD or DDS drive for backing up and restoring the database and files.
- Uninterruptible power supply (UPS) to provide a dual power supply to the system cabinet components in addition to the power supply included at the factory with the PG230RM.
- Administrator console, which is customer provided, for access to the digital switch and system controller.
- Public Switched Telephone Network (PSTN) for placing and receiving calls.
- Local Area Network (LAN) for connecting to agent and supervisor workstations.
- Customer-provided Agent workstations and Supervisor workstation, headsets or phones, using the trunk connections to the switch.
- For CTI deployment options, Application Enablement Services (AES) communicates with the Avaya Aura[®] Communication Manager switch. The server integrates telephones on the desktops of agents with telephony-enabled applications or telephony-based applications. These applications can reside either on the server as server applications or on the desktop computer as client applications. For more information on installing AE Services, see *AE Services Client Installation Guide*.

Related Links

[Avaya PG230RM system cabinet environmental specifications](#) on page 96

[PG230RM cabinet specifications](#) on page 98

Avaya PG230RM system cabinet environmental specifications

The environment can influence PG230RM system performance and reliability. You must control the temperature, humidity, and other environmental factors to meet the operating requirements of PG230RM.

Electrical

Connect the system cabinet ground to the building ground. Use a minimum of 10 AWG (5.26 sq-mm) stranded ground conductor (green insulated wire with at least one yellow stripe).

Air Conditioning

A qualified air conditioning engineer must determine the exact requirements for your environment. 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), the system continually generates heat. Ensure that air conditioning requirements are met.

The environment must have 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 must not exceed ± 5 degrees Fahrenheit (± 3 degrees Celsius).

Heat dissipation from a system is estimated in British Thermal Units (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 that each person in the occupied area generates heat. Consult your (Heating, Ventilation, and Air Conditioning (HVAC) representative for specific air conditioning, heating, and ventilation requirements.

Use the following guidelines for all the hardware components of the Avaya Proactive Contact system:

- Keep the temperature between 45°F to 80° F (7°C to 26° C).
- Maintain 8% to 80% relative humidity.
- Protect from heat, cold, and water exposure.
- Avoid direct sunlight.

Other environmental factors

In addition to controlling temperature, you must control the following environmental factors in the equipment areas:

Environmental factors	Description
Humidity	Low humidity can increase static electricity buildup, while high humidity can affect the performance of disks and printers. Maintain a non-condensing, relative humidity between 8 percent and 80 percent.
Static electricity	You must place the system cabinet on an antistatic electrical grade matting. When you work on Avaya Proactive Contact System equipment, use an antistatic wrist strap.
Lighting	Avoid direct sunlight.
Ventilation	Do not block the vents on the system cabinet.

Grounding and power requirements

In addition to meeting the requirements in this topic, you must comply with the requirements in *Avaya Proactive Contact Safety and Regulatory Information*.

Warning:

If you fail to follow the grounding procedures, the installation can be unsafe for personnel, unprotected from lightning or power transients, and subject to service interruptions and degraded performance. The power supply conductors must be dedicated and uninterrupted from the service panel to the system cabinet.

Related Links

[Avaya PG230RM cabinet specifications](#) on page 96

PG230RM cabinet specifications

PG230RM does not require an enclosure to house all the other support equipment (CPU, modems, access servers, UPS, etc.). You can house the equipments described in this section in an enclosure or open rack; however, you must comply with the cable length and environmental requirements.

Dimensions

- PG230RM cabinet: 28 inches x 17.5 inches x 25.5 inches (0.71 meters x 0.44 meters x 0.65 meters)

Placement

Allow sufficient space to open and close the front and rear doors. The front door requires a 17.25-inch arc from the right side of the front and rear of the system cabinet. The rear door swings down within an 18 inch arc.

PG 230RM cabinet

- Provide minimum of 3 feet (0.92 meters) of work space at the front and back of the rack.
- Ensure that the ventilation slots on each side of the cabinet are not blocked and adequate airflow is provided. Typical rack spacing will ensure adequate airflow.
- Provide a distance of minimum 5 feet (1.5 meters) from air conditioning or heating ducts
- Ensure that the rack can support 135 pounds (62 kilograms) for each cabinet and can be a two or four rail rack.
- Provide the bare enclosure with rack mount ears installed, front door removed, and without switch cards, adapter modules, or cables with a non-redundant power supply that weighs 70 pounds.
- Provide the bare enclosure, the same as described earlier, with a redundant power supply that weighs 85 pounds.
- Ensure that the front door weighs six pounds and has lift-off hinges for easy removal before installation.
- If you leave switch cards and adapter modules/cables in the enclosure, the weight increases. As most switch cards weigh 1.7 pounds, a system with eight Quad-T1 cards and the other standard cards including ENBC, two LPVC2s, and two DSP2s adds 22 pounds to the weight. I/O modules and cables add another 6 pounds. The total weight of the system with a nonredundant power supply with the front door is 104 pounds.
- Four installation guide pins are provided to make installation easier. You can lift the enclosure and slide the enclosure over the pins to hold the enclosure until the rack mount screws are installed. Then remove the guide pins and replace with normal screws.

Clearance

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

You must move the system cabinet in the shipping crate.

*** Note:**

After the initial installation, use the shipping crate to move your system anytime. After the initial installation, you must first contact your Customer Support Engineer or risk non-compliance before moving your system.

IP address

Provide the required IP addresses for the PG230RM.

Electrical connections

The system cabinet is equipped with an IEC-320 C14 electrical connector. Use one separate, dedicated circuit with the appropriate receptacle for the system cabinet.

Comply with the following guidelines for electrical connections:

Power input	Cord	Plug (PG230RM end)	Plug (customer end)
120 VAC, 50-60 Hz	10A, 8 ft provided	ICE-320 C13, 90°	NEMA 5-15P
100 VAC, 50-60 Hz	10A, 8 ft provided	ICE-320 C13, 90°	NEMA 5-15P
220-240 VAC, 50-60 Hz	5A, not provided	IEC-320 C13, 90°	Country specific, customer provided

*** Note:**

The circuit must meet the appropriate power input requirements. You must manage any change to the supplied electrical connection where the call center is located. You must use the services of a qualified electrician for this purpose. The local building inspectors must approve all electrical connections and components to ensure that the electrical connections and components meet local electrical requirements.

Ethernet

Do not exceed the networking limitations of the Proactive Contact System CPU when you set up the Ethernet network.

Power consumption

Proactive Contact with PG230RM uses approximately 800 watts.

Grounding

Install wire to connect the system cabinet to the building earth ground. Use minimum 10 AWG (5.26 sq-mm) stranded ground conductor (green insulated wire with yellow stripes).

In addition to meeting the requirements in this section, you must comply with the requirements in *Avaya Proactive Contact Safety and Regulatory Information*.

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 PG230RM cabinet can produce up to 3,000 BTUs per hour.

Security

Place the system cabinet in a secure location with controlled access.

Related Links

[Avaya PG230RM cabinet specifications](#) on page 96

Hardware components

Digital switch description

The digital switch places calls, performs call progress analysis, answers calls, processes calls, plays messages, and communicates with the Proactive Contact CPU.

The digital switch is made up of three subsystems:

- Digital switch subrack
- Enhanced Network Bus Controller (ENBC) I/O Transition Module
- Digital switch power supply

The digital switch uses an internal isolated Ethernet connection to communicate with the system controller.

Related Links

[Digital switch subrack description](#) on page 100

[ENBC I/O Transition Module description](#) on page 102

[Digital switch power supply](#) on page 102

Digital switch subrack description

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

- Provide a central processor for the digital switch.
- Monitor alarm conditions and provide controls for resetting the digital switch.
- Provide interfaces for phone circuits.
- Place, receive, and process phone calls.
- Provide call progress analysis to screen out answering machines, busies, no answers, and intercepts.
- Play and record digitized voice messages.
- Switch calls to workstation headsets.

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

Card type	General function	Description
Enhanced Network Bus Controller (ENBC)	Control circuit card	Controls the operation of the digital switch under the direction of the system controller (CPU).
Digital Signal Processor (DSP2))	Service circuit card - all DSP functions	Enhanced Digital Tone Generator (EDTG) Enhanced Conference Card (ECC) Enhanced DTMF Receiver Card (EDRC) Enhanced Call Progress Analyzer (ECPA) Digital Dialer Card (DDC) Enhanced MFCR2 (EMFCR2) (Multi Frequency Compelled R2 signaling)
Large Port Voice Card (LPVC2) ()	Service circuit card	Plays and records digitized voice messages and ziptones.
EUTC (Enhanced Universal Trunk Card)	Port interface card	Provides an interface to 16 analog ground start/loop start phone trunks.
QT1 (Quad T1 card)	Port interface card	Provides interfaces for up to four digital T1 phone trunks (non-ISDN).
QE1 (Quad E1 card)	Port interface card	Provides interfaces for up to four digital E1 phone trunks (non-ISDN).
QT1-PRI (Quad T1 Primary Rate ISDN card)	Port interface card	Provides interfaces for up to four T1-based Primary Rate ISDN (PRI) phone trunks.
Quad E1 Primary Rate ISDN card (QE1-PRI) ()	Port interface card	Provides interfaces for up to four E1-based Primary Rate ISDN (PRI) phone trunks.
Operator Line Interface Card (OLIC2)	Port interface card	Provides an interface to 24 direct-connect headsets.

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

The following table describes the digital switch buses:

Digital switch bus name	Description
Ethernet	Carries communication network traffic between the system controller (CPU) and the digital switch.
SCSI	Connects ENBC I/O Transition Module to the digital switch subrack. When the call center starts a job, ENBC uses the SCSI bus to download digitized voice messages to LPVC.

Digital switch bus name	Description
Communication	Carries control signals and data between ENBC and the cards in the digital switch subrack. When you reset the digital switch, the ENBC uses the communication bus to download application software to cards in the digital switch subrack.
Pulse Code Modulation (PCM)	Carries phone 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.

Related Links

[Digital switch description](#) on page 100

ENBC I/O Transition Module description

The ENBC 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 includes a hard disk drive and a diskette drive.

The hard disk drive stores the operating system, switch generic software, card download, and configuration information that the digital switch uses.

Related Links

[Digital switch description](#) on page 100

Digital switch power supply

The power supply module can be either a single supply or two supplies connected in a current sharing, redundant configuration.

The supply provides the following DC voltages:

- +5 V DC
- +/- 1-15 V DC
- +24 V DC
- -48 V DC

Related Links

[Digital switch description](#) on page 100

Proactive Contact System CPU specifications

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

The Proactive Contact System CPU also contains a writable DVD drive that provides data storage and is used for backing up system software. A DDS tape drive is available as an option for larger backups.

The environmental requirements for the Proactive Contact CPU are listed in the following table. Every component described in this section must meet 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)
Temperature	+5° C to +35° C	-40° C to +70° C
Humidity	8% to 80% non condensing	—

Uninterruptible power supply (UPS) specifications

The UPS protects your system against power supply fluctuations and outages. The UPS provides power reserve for a fully loaded system based on the capacity of the UPS. Using the reserve time, a system administrator can shut down the system. You can monitor the UPS through its serial interface using the optional software, such as, Parachute software. If you monitor the UPS, you can automatically shutdown the system if a power interruption occurs.

In the Proactive Contact with PG230RM and CTI deployment options, you must provide a UPS. The UPS must protect all Proactive Contact equipment. The equipment include the following:

- Proactive Contact system CPU
- PG230RM
- Modem
- Remote access hardware
- Administrator console, if connected to the same UPS
- Ethernet switch
- DDS tape or DVD device

Maintenance modem

The Proactive Contact System uses the following methods to enable remote access to the system for diagnostic and maintenance purposes:

- A high-speed modem
- SAL

The modem connects an analog phone line to the access server to provide access to the major subsystems. Proactive Contact System installed in the United States and Canada includes a maintenance modem and modem cable. All other installations outside the United States and Canada include only a modem cable with Proactive Contact System. The customer, VAR, or Avaya Partner can provide the modem. The modem provides access to the Lantronix access server from where you can get access to the console of the CPU and Digital Switch.

SAL is used as a standard remote connectivity method for all Avaya products. For most products, one SEID is used to connect to the CPU through a local SSH. But engineers could not gain access to the console port, which is required for troubleshooting bootup issues and other similar problems. For engineers to connect to the Lantronix box that provides console access, another SEID was created. Using SAL with these two connection points, engineers have the option to either connect directly to the CPU or to the Lantronix box to gain the console access.

Remote access server

The Avaya support services must remotely obtain system console access and network access to Proactive Contact system CPU and the digital switch. A remote access server provides remote access. The system supports the Lantronix SLC8 device.

The Lantronix SLC8 secure access server provides end user access to the console ports of the Proactive Contact system components for tasks such as system shutdown and other administrative purposes and a secure remote access solution between Avaya Services and the Proactive Contact system. The Lantronix SLC8 supports PPP dial-back and DDR (dial-on-demand routing) using a modem, a direct modem connection, or a direct network connection that leverages Avaya Secure Access Link (SAL).

Ethernet switch specifications

You must install an Ethernet switch that supports 100-Mbit Full-duplex with a minimum of three ports. You must have a Gigabit Ethernet switch supporting 1000-Mbit. The Gigabit Ethernet switch provides a network interconnection between the built-in interfaces of the Proactive Contact system CPU, PG230RM, and the remote access server.

Configure the Ethernet port, eth1, on the Proactive Contact system CPU to communicate at 10-Mbit/ Half Duplex/Autonegotiation off and configure the port on the ethernet switch where eth1 connects to run at 10-Mbit. The Ethernet port on PG230RM communicates at 10-Mbit/Half Duplex/Autonegotiation off. As the Ethernet port on PG230RM communicates at 10-Mbit/Half Duplex/Autonegotiation off, configure the port on the Ethernet switch where PG230RM connects to communicate at 10-Mbit.

The three Ethernet segments, CPU-to-switch, PG230RM-to-switch, and remote access server-to-switch must be as short as possible.

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

- The average round-trip time between the Proactive Contact System CPU and the PG230RM for 100 packets of 1,500 bytes each must not be greater than 5 milliseconds. This network performance metric must be met or exceeded for all Ethernet segments.
- The network performance measurements must be made using the ping (1 meter) utility on the Proactive Contact System CPU in either of the following situations:
 - No jobs or record selections are running
 - Only the root user is logged in to the workstation

For example:

```
ping switch1 1500 100
```

Administrator console requirements

Using the administrator console, you can gain access to the Proactive Contact system CPU and digital switch. The administrator console connects directly to the access server inside the system cabinet. This interface requires a monitor and a keyboard. The system administrator uses this interface to perform basic system operations such as monitoring system status, backing up system files, shutting down the system, and setting the time and date of the system.

You can connect the monitor and keyboard directly to the access server inside the system cabinet. Alternatively, you can use any terminal emulation software that supports VT100 terminal emulation on Windows 2000 or later. The computer must have an available RS-232 serial port for connection to the remote access hardware. Alternatively, you can use an available USB port in conjunction with a USB to RS-232 serial adapter. You must provide the cables for either solution.

Placement

The placement specifications of the Administrator console are as follows:

- Minimum of 2 feet x 3 feet (0.6 meters x 0.9 meters) table or computer stand space
- Maximum of 10 feet (3 meters) from the system cabinet
- Minimum weight of 19.5 pounds (9 kilograms)

Table placement

If you place the Administrator console and the printer on the same table, use the following guidelines:

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

Electrical

The workstation power cord plugs can be plugged directly into the system cabinet UPS.

Data connectivity

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

Avaya supplies a 15-foot RS232 cable terminating in a DB25 connector and is designed for a dumb terminal. Depending on the requirement, provide a serial-to-USB I/O converter to connect to a computer with terminal emulation software.

Security

For system security, you require the administrator user name and password.

Supervisor workstation requirements

Supervisor workstations are network-attached computers. Supervisor workstations require a headset or phone. Identify and dedicate workstations for each Proactive Contact Supervisor license purchased. The location of Supervisor workstation can vary based on your operational requirements.

Proactive Contact Supervisors use these workstations to:

- Set up and manage system settings
- Set up jobs
- Monitor calling activity
- Produce call center reports

Supervisor workstation hardware requirements

Following are the minimum system requirements for Microsoft Windows XP Service Pack 2 (32-bit or 64-bit Operating System):

- 1.3-GHz (Dual Core) Processor.
- 2-GB RAM.
- 2-GB free disk space.
- DVD drive.
- Network capable.
- Microsoft Internet Explorer 8.0 or later.

The following are the minimum system requirements for Microsoft Windows Vista Enterprise Edition (32-bit or 64-bit Operating System):

- 1.3-GHz (Dual Core) Processor.
- 2-GB RAM.
- 2-GB free disk space.
- DVD drive.
- Network capable.
- Microsoft Internet Explorer 8.0 or later.

*** Note:**

For more information about additional hardware requirements to support Microsoft Vista, go to the Microsoft website: <http://technet.microsoft.com/en-us/library/cc507845.aspx>

*** Note:**

If the Supervisor workstation machine has multiple network interfaces, and the dialer is not accessible through any one of the network interface on the workstation, then the data in all the Monitor applications connected to the dialer might freeze for 15 minutes when the user runs the Monitor application from this workstation.

Minimum System Requirements for Microsoft Windows 7 Enterprise Edition (32-bit or 64-bit Operating System):

- 1.3GHz (Dual Core) processor.
- 2-GB RAM.
- 2-GB free disk space.
- DVD drive.
- Network capable.
- Microsoft Internet Explorer 8.0 or later.

*** Note:**

For more information about additional hardware requirements to support Microsoft Windows 7 Enterprise Edition, go to the Microsoft website at: <http://windows.microsoft.com/en-IN/windows7/products/system-requirements>

Minimum System Requirements for Microsoft Windows Server 2008 SP2 Enterprise version (32-bit or 64-bit Operating System):

- 1.3GHz (Dual Core) processor.
- 2-GB RAM.
- 2-GB free disk space
- CD/DVD drive
- Network capable
- Microsoft Internet Explorer 8.0 or later

*** Note:**

For more information about additional hardware requirements to support Microsoft Windows Server 2008 SP2 Enterprise version, go to the Microsoft website, at: <http://www.microsoft.com/windowsserver2008/en/us/system-requirements.aspx>

Supervisor workstation software requirements

- Microsoft Windows XP Service Pack 2 (32-bit or 64-bit Operating System)

*** Note:**

If you are using Microsoft Windows XP SP2 with the Windows Firewall turned on, you can set permissions so that Avaya applications can run.

- Microsoft Windows Vista Enterprise Edition (32-bit or 64-bit Operating System)

- Microsoft Windows 7 Enterprise Edition (32-bit or 64-bit Operating System)
- Microsoft Windows Server 2008 SP2 Enterprise version (32-bit or 64-bit Operating System)
- Microsoft 32 bit ODBC

*** Note:**

If you install a version of Oracle client on the system and the setup detects the Oracle client environment settings, the setup overwrites the existing Oracle environment variables.

Agent workstation requirements

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

Agent workstations can be network connected or serial connected, that is, direct connected. The Proactive Contact system provides quality service using network connected computers. The Proactive Contact system supports connections to an Ethernet network. The Proactive Contact system uses the TCP/IP protocol to move data to the agent workstations and back. These systems can use the Avaya graphical user interface or through Agent API.

Agent workstation hardware requirements

Minimum system requirements for Microsoft Windows XP Service Pack 2 (32-bit or 64-bit Operating System):

- 1.3GHz (Dual Core) processor.
- 2-GB RAM.
- 2-GB free disk space.
- CD/DVD drive.
- Network capable.
- Microsoft Internet Explorer 8.0 or later.

Minimum system requirements for Microsoft Windows Vista Enterprise Edition (32-bit or 64-bit Operating System):

- 1.3GHz (Dual Core) processor.
- 2-GB RAM.
- 2-GB free disk space.
- Network capable.
- CD/DVD drive.
- Microsoft Internet Explorer 8.0 or later.

*** Note:**

For additional hardware requirements to support Microsoft Vista, see the Microsoft Web site at: <http://technet.microsoft.com/en-us/library/cc507845.aspx>

Minimum System Requirements for Microsoft Windows 7 Enterprise Edition (32-bit or 64-bit Operating System):

- 1.3GHz (Dual Core) processor.
- 2-GB RAM.
- 2- GB free disk space.
- Network capable.
- CD/DVD drive.
- Microsoft Internet Explorer 8.0 or later.

*** Note:**

For more information about additional hardware requirements to support Microsoft Windows 7 Enterprise Edition, go to the Microsoft Web site: <http://windows.microsoft.com/en-IN/windows7/products/system-requirements>

Minimum System Requirements for Microsoft Windows Server 2008 SP2 Enterprise version (32-bit or 64-bit Operating System):

- 1.3GHz (Dual Core) processor.
- 2-GB RAM.
- 2-GB free disk space.
- Network capable.
- CD/DVD drive.
- Microsoft Internet Explorer 8.0 or later.

*** Note:**

For more information about additional hardware requirements to support Microsoft Windows Server 2008 SP2 Enterprise version, go to the Microsoft Web site: <http://www.microsoft.com/windowsserver2008/en/us/system-requirements.aspx>

Agent workstation software requirements

- Microsoft Windows XP Service Pack 2 (32-bit or 64-bit Operating System)

*** Note:**

If you are using Microsoft Windows XP SP2 with the Windows Firewall turned on, you can set permissions so that Avaya applications can run.

- Microsoft Windows Vista Enterprise Edition (32-bit or 64-bit Operating System)
- Microsoft Windows 7 Enterprise Edition (32-bit or 64-bit Operating System)
- Microsoft Windows Server 2008 SP2 Enterprise version (32-bit or 64-bit Operating System)
- If you are not using Proactive Contact Agent Desktop or Proactive Contact Agent API, provide VT100 Emulation software for connection to host and system. You can install the following:
 - WallData Rumba
 - Attachmate Extra!
 - WRQ Reflections

- Hummingbird

 Note:

Integration development and consulting is not usually included as part of your services agreement with Avaya Professional Services.

or

- If you are using an Agent API solution, provide network-connected agent computers. The Proactive Contact Agent session communicates through the Agent API to the system. An emulation session is not necessary.

The Proactive Contact Agent application broadcasts record information via DDE. If you are creating a cut and paste solution to your host, the host emulation session must support DDE. You are responsible for creating any cut and paste solution, unless you have contracted with Avaya Professional Services (APS) for this cut and paste work. If you have contracted with APS to create a cut and paste solution to your host, you will be asked to provide the host emulation software name, for example, Reflections and the host emulation software type, for example, vt100 or 3270.

Printers specifications (customer provided)

Connect at least one network printer for printing Proactive Contact reports 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. Purchase a laser printer that has either an internal or an external HP Jet Direct Card. The printer must be able to use PCL 6, which is HP's Printer Control Language version 6.0.

The printer must have network access via TCP/IP. You must provide either the static IP address or DNS name to be entered into the Proactive Contact hosts table.

The printer is connected to the LAN at your call center, which makes the printer available to other application software. The printer connects to the system controller by an Ethernet LAN connection.

Chapter 7: Component hardware checklists

Electrical checklist

The checklist for electrical requirements is explained in the following table:

#	Description	Notes	✓
1	Provide one dedicated AC circuit.	• North America: 105-125 VAC at 60 Hz and an additional AC circuit for the added equipment. • Europe and South America: 210-250 VAC (220 VAC nominal) at 50 Hz • Japan: 85-110 VAC at 50 Hz	—
2	Provide a 15 A circuit with 15 A circuit breaker.	—	—
3	Provide a power cord.	• One Earth-grounded, three-wire, single or double outlet within 9 ft. of the cabinet. • North America: Use the provided 3 prong grounded, NEMA 5-15 plug. • Europe, South America, and Japan: Provide the appropriate power cord, locking plug, and receptacle for the electrical cord. See Component hardware specifications on page 100.	—
4	Provide a wire to connect the system chassis to building Earth ground.	Use a wire of minimum 10 gauge with dimensions .1019" / 2.6mm and ground conductors that are green insulated wires with minimum one yellow stripe.	—

Space checklist

The checklist for space requirements is explained in the following table:

#	Description	Notes	✓
1	Allow a total space of 33.81 cubic ft. (0.97 cubic m.), per cabinet.	Physical cabinet size: (H x W x D) 4.7 ft x 2.16 ft x 3.33 ft (1.42 m x 0.66 m x 1.04 m)	
2	Reserve a minimum workspace of 3 ft (0.92 m) at the front and the rear of the cabinet to allow the doors to open fully.	—	
3	Reserve a minimum space of 2.34 ft (0.75 m) on each side of the cabinet to allow proper ventilation.	—	
4	Place one 4 ft. X 2 ft (1.3 m. x 0.6 m.) or larger table that supports 50 lbs (18.65 kg), located no more than 8 ft. (2.66 m) away from the cabinet.	This table will support the administrator consoles. The administrator console cable extends approximately 10 ft (3.3 m) from the cabinet.	
5	Tiled floors or concrete floors are preferred for computer rooms. Ensure that raised floors support a minimum weight of 550 lbs (250 kg) for each cabinet. If a static-free floor is not available, provide static mats.	—	

Environmental checklist

You must adhere to the specifications mentioned in this section. Avaya is not responsible if you fail to adhere to the specifications mentioned in this section.

The checklist for the external environment setup is explained in the following table:

Electrostatic alert:

Prepare the cabinet location to meet environmental requirements and to prevent component failure because of extreme temperatures, moisture, static electricity, and bad air quality.

#	Description	Notes	✓
1	Maintain the temperature of the laboratory between 45 degrees and 80 degrees Fahrenheit (7° C to 26° C). The ideal temperature is between 65 degrees Fahrenheit and 75 degrees Fahrenheit.	 Caution: You must consistently maintain this temperature in the mentioned range. The system produces up to 5500 BTUs of heat per hour. In a small room lacking air conditioning, this heat can raise the temperature above the operating limits of the system.	
2	Maintain the humidity between 8% and 80% in the non-condensing state.		

#	Description	Notes	✓
3	Keep the system cabinet 5 ft. (1.7 m.) from any air conditioning or heating ducts.		
4	Protect your system from direct sunlight.		
5	Ensure that the system cabinet is not under an overhead sprinkler or in an area near water such as a damp basement.	! Important: If the sprinkler placement cannot be changed, then note that the warranty provided by Avaya is limited.	

Phone line configuration and cabling checklists

T1 digital line assignment

The following table lists the T1 utilization. Each T1 will use 24 channels for your system. Review the table carefully for discrepancies.

ID	Channels	Line Type
1	# - #	Outbound calls through PBX or PSTN signaling type
2	# - #	Overflow inbound calls through PBX or PSTN signaling type
3	# - #	Call transfer through PBX or PSTN signaling type
4	# - #	Agent headset connection through PBX or PSTN signaling type
	# - #	Channels that remain unused

+ Tip:

Label and number each cable with its circuit ID, cable assignment, sequence of lines, and function. For example: #1/01-24Out, #2/25-48Inb, #3/1-12Trans, #4/1-24Head.

Related Links

[ISDN-PRI digital line requirements](#) on page 114
[T1 digital line configuration and cabling](#) on page 115
[Analog line assignment](#) on page 117
[Analog line configuration and cabling](#) on page 118
[E1 digital line assignments](#) on page 119
[E1 digital line configuration and cabling](#) on page 120
[Inbound phone lines](#) on page 121
[Outbound phone lines](#) on page 122
[Call transfer phone lines](#) on page 124
[Headsets checklist](#) on page 125

ISDN-PRI digital line requirements

North American ISDN requirements

- Proactive Contact supports the custom (N1) protocol for your switch or the national (N2) ISDN protocol.
- ISDN circuit must use the E.164/E.163 ISDN/Telephony numbering plan.
- If you are not using Non Facility Associated Signaling (NFAS), each ISDN circuit must have its own D-Channel on channel 24.
- If the outbound circuits connect from the Proactive Contact directly to the central office (CO), configure the digital switch as the *user* side and the CO must be configured for the *network* mode.

If the outbound circuits connect from the Proactive Contact through your PBX, you must configure the system as the *network* side and the customer PBX must be configured as the *user* side.

- ISDN signaling uses ESF format, B8 zero substitution (B8ZS), and clear channel signaling.

Additional NFAS requirements

- Proactive Contact can interface with NFAS with the following switches:
 - DMS COs (DMS100, DMS250, DMS500, and so on)
 - 5ESS
 - 4ESS
- If you use NFAS, you need two ISDN/PRI spans, primary and backup, with D-Channel per NFAS group.
- For NFAS implementations, limit the group to 192 ports, 8 T1 spans, including the primary and backup ISDN/PRI spans.
- Inbound and outbound lines must be in separate NFAS groups.
- You must order all the T1 spans as ISDN T1 without D-Channel, except the two D-Channel spans.
- If the ISDN T1 spans connect to different COs, then this configuration requires two ISDN spans with D-Channel for each different CO.

CO Switch Requirements

For trunk groups that connect to Proactive Contact, request the ISDN carrier to activate the Central Office (CO) feature for trunk groups called B-channel Availability. The B-channel Availability feature is usually activated, but for some COs, the B-channel Availability feature must be requested.

5ESS CO Switch B-channel Availability must be activated. The default setting is No. Change it to as required.

DMS CO Switch B-chan Serve. Default setting is Yes. Verify this setting for your site.

Seimens CO Switch

B-channel Availability default is off. On the CO switch screen, the CO Translations technician must access Edit Access, and configure the ILNATT=BCHAVS parameter.

Using ISDN on Meridian PBX

When the Meridian PBX of the customer receives the inbound calls via ISDN, the inbound lines to the system cannot be E&M. The Meridian can not change an ISDN call to a non-ISDN call using a trunk interface like E&M. To convert an ISDN call to a non-ISDN call, implement one of the following solutions:

- Line side T1 (loop start signaling) or analog loop start lines between the Meridian and Proactive Contact, configured in an ACD group on the Meridian.
 - Option 125 is required on the Meridian
 - ANI/DNIS digits can not be passed
- Use ISDN from the Meridian to the Proactive Contact system.
 - The circuit has to be configured using #5ESS protocol on both Avaya Proactive Contact (*network* end) and the Meridian PBX (*user* end).
 - ANI and DNIS digits are available.

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T1 digital line configuration and cabling**+ Tip:**

To prevent delay in the installation of, Proactive Contact ensure that the cables are installed 1 week before the installation engineer from Avaya arrives to install. If you have questions about the cabling, call your project manager before the installation begins. If you have a contractor for constructing the cables, ensure that the contractor is available during the installation of the Proactive Contact System to handle any unexpected cabling problems.

#	Description	Notes	✓
1	For all outbound, inbound, headset transfers, T1s must be configured as any or all of the following signaling types: • Superframe • D4 channelized • Robbed-bit signaling • Alternate Mark Inversion (AMI) or Extended Superframe (ESF) format • B8ZS	—	—
And/or			
2	For all, or outbound, and/or inbound, and/or headset and/or transfer T1s must be configured as ISDN or ISDN/NFAS: • ESF format • B8ZS • Clear channel signaling	—	—
3	Provide Channel Service Unit (CSU) for each T1.	A CSU is required for circuits connecting directly to the central office (CO), and must be used for circuits going to your PBX. Provide a cable for each T1 from CSU to the system.	—
4	Cat5e ,4–pair 8–wire Ethernet, cable Minimum 4-wire shielded, twisted pair, 26 gauge (0.129 sq-mm) or larger, Teflon or PVC coated	Primary cable solution Alternate cable solution	—
5	Maximum cable length 655 ft (199.6 m).	—	—
6	Terminate as MALE DB-15 (straight) connector at the system. The system is not compatible with cables that are terminated with a 90-degree cable hood.	—	—
7	Leave 10 ft (3 m.) of slack at the system.	—	—
8	Primary connector. 8-pin modular connector Alternative connector. DB-15 pin configuration: 1 (tip), 9 (ring) for transmit; 3 (tip), 11 (ring) for receive as noted below. • Transmit Tip, Pin #1 to Receive Tip, Pin # _____ • Transmit Ring, Pin #9 to Receive Ring, Pin # _____	Primary connector. See T1 twisted pair I/O module on page 50 for pinouts. Alternative connector. ! Important: Proactive Contact T1s are DTE devices. Ensure that pins are configured to connect properly to transfer and receive correctly.	—

#	Description	Notes	✓
	• Receive Tip, Pin #3 from Transfit Tip, Pin # ____ • Receive Ring, Pin #11 from Transmit Ring, Pin # ____		

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Analog line assignment

Review the following table that illustrates the phone cable utilization:

ID	Channels	Line Type
1	# - #	Outbound calls through PBX or PSTN signaling type
2	# - #	Overflow inbound calls through PBX or PSTN signaling type
3	# - #	Call transfer through PBX or PSTN signaling type
4	# - #	Agent headset connection through PBX or PSTN signaling type
	# - #	Channels that remain unused

+ Tip:

Label and number each cable with its circuit ID, cable assignment, sequence of lines, and function. For example: #1/01-24Out, #2/25-48Inb, #3/1-12Trans, #4/1-24Head.

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Analog line configuration and cabling

#	Description	Notes	✓
1	Provide cables from the system to a punch down block at the distribution panel	—	—
2	Provide one cable for every 24 (2-wire) lines (outbound, inbound, transfer, network-attached headset) or for every 12 (4-wire) lines (direct-attached headset)	—	—
3	Cable type is shielded, 25-twisted pair Telco, 26 gauge or larger.	—	—
4	Terminate the system end of each cable with male, 50-pin, 90 degree Amphenol connectors	• If 2-wire cabling, connect one pair of wires for each line. • If 4-wire cabling, connect two pair of wires for each line (direct-attached headsets only).	—
5	Use an RJ21X (4-wire, 4-row, connectorized) punch down block for termination of analog lines at distribution panel.	—	—
6	Maximum length from punch block to the system is 150 ft (46.15 m).	—	—
7	Leave minimum 9 ft (3 m) of slack for each cable terminating at the system	—	—

You must ensure that the following are present:

- Administrator console, which is customer provided, for access to the digital switch and system controller.
- Local Area Network (LAN) for connecting to agent and supervisor workstations.
- Customer-provided Agent workstations and Supervisor workstation, headsets or phones, using the trunk connections to the switch.

Related Links

[T1 digital line assignment](#) on page 113

[ISDN-PRI digital line requirements](#) on page 114

[T1 digital line configuration and cabling](#) on page 115

[Analog line assignment](#) on page 117

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E1 digital line assignments

Review the following table that illustrates the E1 utilization (each E1 uses 30 channels).

ID	Channels	Line Type
1	2-16, 18-32	Outbound calls via PBX or PSTN (signaling type)
2	# - #	Overflow inbound calls via PBX or PSTN (signaling type)
3	# - #	Call transfer via PBX or PSTN (signaling type)
4	# - #	Agent headset connection via PBX or PSTN (signaling type)
	# - #	Channels remain unused

Available E1 Calling Circuits are:

- ISDN - DPNSS
- ISDN - DASS2 (UK only)
- ISDN - NET5 signaling
- ISDN - Q.931
- ISDN - Q.SIG
- CAS with MFCR2
- CAS with DTMF

Out of the 32 channels on an E1, channels 1 and 17 on each E1 are reserved for signaling.

* Note:

Label and number each cable pair (Transmit and Receive) with its cable assignment, sequence of lines, and function. For example: #1/01-30Out, #2/31-60Out, #5/1-30Head.

Related Links

[T1 digital line assignment](#) on page 113

[ISDN-PRI digital line requirements](#) on page 114

[T1 digital line configuration and cabling](#) on page 115

[Analog line assignment](#) on page 117

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E1 digital line configuration and cabling

+ Tip:

To prevent delay in the installation of, Proactive Contact ensure that the cables are installed 1 week before the installation engineer from Avaya arrives to install. If you have questions about the cabling, call your project manager before the installation begins. If you have a contractor for constructing the cables, ensure that the contractor is available during the installation of the Proactive Contact System to handle any unexpected cabling problems.

#	Description	Notes	✓
1	Install E1 cables, with one Receive (Rx) and one Transmit (Tx), for each 30 telephone lines between the system and an NTP/NE1 or another PBX at the distribution panel.	—	—
2	Leave 3 meters of slack on each cable terminating at the system cabinet.	—	—
3	Clearly label each E1 cable pair which has 50 meter maximum run length.	- Label outbound E1 cables Outbound and indicate Rx and Tx at the appropriate ends of the cable - Label agent voice E1 cables with the voice connection type and agent location	—
4	For 75 ohm E1 circuits, cables must be coaxial with BNC connectors.	—	—
5	Primary connection. For 120 Ohm E1 circuits, cables must be 4-wire, shielded, twisted-pair with 8-pin modular connectors. 120 Ohm ISDN cable uses four wires consisting of a transmit pair and a receive pair . Alternative connection. For 120 Ohm E1 circuits, cables must be 4-wire, shielded, twisted-pair with DB15 connectors. 120 Ohm ISDN cable uses four wires consisting of a transmit pair and a receive pair .	—	—

* Note:

See [E1 Connection Specifications](#) on page 56 for additional information on digital cabling specifications.

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[ISDN-PRI digital line requirements](#) on page 114

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Inbound phone lines

This section provides the checklists for configuring inbound phone line for digital or analog line types.

Digital inbound phone line checklist

#	Description	Notes	✓
1	Provide inbound-dedicated channels for receiving inbound calls	—	—
2	Inbound lines must be configured as hunt group on PBX or PSTN.	A cyclic hunt type of Round Robin or Least Used must be used on the hunt group.	—
3	If switch type is Meridian, inbound lines can be configured as E&M Winkstart or Loopstart (lineside T).	—	—
4	If switch type is Meridian and line side T1s (Loopstart) are used, then option 125 for the Meridian must be purchased.	—	—
5	If switch type is Avaya G3, inbound lines must be configured as Loopstart.	—	—
6	The system will busy out all inbound lines until an agent logs in to a blend or inbound job, therefore, PBX or PSTN configuration for off-hours call handling must be arranged.	—	—

Analog inbound phone line checklist

#	Description	Notes	✓
1	Provide inbound-dedicated channels for receiving inbound calls.	—	—
2	Install a total of (# Inbound/24) 25-pair cables for inbound calls to be routed to the agent via the system.	—	—
3	Configure analog inbound lines as Loop Start or Ground Start.	—	—

#	Description	Notes	✓
4	Inbound lines must be configured as hunt group on (PBX or PSTN).	A cyclic hunt type of Round Robin or Least Used must be used on the hunt group.	—
5	If PBX or PSTN does not work with the auto logon feature for ACD Agents, then provide login and logout sequence to the Avaya Project Manager.	—	—
6	The system will busy out all inbound lines until an agent logs in to a blend or inbound job, therefore, PBX or PSTN configuration for off-hours call handling must be arranged.	—	—

*** Note:**

See [Analog connection specifications](#) on page 49 for more information.

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Outbound phone lines

This section provides the checklists for configuring outbound phone line for digital or analog line types.

! Important:

Unless the outbound lines you purchase from your carrier are configured to allow toll-free dialing, Proactive Contact will not be able to dial toll-free numbers during outbound campaigns. To dial toll-free numbers using Proactive Contact, procure a service like AT&T Digital Link (ADL) on your outbound lines. For more information on leased lines, contact your long distance carrier.

Digital outbound phone lines

#	Description	Notes	✓
1	Provide outbound-dedicated channels for outbound calling.	—	—

#	Description	Notes	✓
2	Provide sufficient capacity from PBX or PSTN if new or additional lines are being installed.	 Note: Outbound calling volume can be disrupted if there are not enough outbound lines to accommodate dialing speed.	—
3	Does not allow transfer between two agents that are logged on to the system.	—	—
4	If switch type is Avaya G3 and the ANI Outpulse feature is being used, the outbound lines through the G3 must be configured as ISDN.	—	—

Analog outbound phone lines

#	Description	Notes	✓
1	Provide ___ outbound-dedicated channels for outbound calling	—	—
2	Install a total of (# Outbound/24) 25-pair cables to be used by the system to place outbound calls to the customers.	—	—
3	Configure analog outbound lines as Loop Start or Ground Start. (If Loop Start is used and the switch type is Meridian, Option 125 must be purchased.)	—	—
4	Provide sufficient capacity from (PBX or PSTN) if new or additional lines are being installed (outbound calling volume can be disrupted if the system is line-starved)	—	—
5	Does not allow transfer between two agents that are logged on to the system	—	—
6	If switch type is Avaya G3 and the ANI Outpulse feature is being used, the outbound lines through the G3 must be configured as ISDN.	—	—

 Note:

See [Analog connection specifications](#) on page 49 for more information.

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Call transfer phone lines

Digital call transfer phone line checklist

#	Description	Notes	✓
1	Provide a total of ____ transfer-dedicated channels for call transferring using the system.		
2	Configure transfer trunks as E&M Winkstart or Ground start.		
3	Does not allow transfer between agents that are logged on to the system.		
Or, provide for call transferring via hookflash functionality.			
4	Configure both outbound and inbound lines as Loopstart with Hookflash transfer functionality.		
5	Verify hookflash configured as 500 millisecond duration at (PBX or PSTN).		

Analog call transfer phone line checklist

#	Description	Notes	✓
1	Configure both outbound and inbound lines as Loopstart with Hookflash transfer functionality.		
2	Verify hookflash configured as 500 millisecond duration at PBX or PSTN.		
Or, provide a total of ____ transfer/24-dedicated lines for call transferring via PBX or PSTN.			
3	Order or install ____ transfer/24 cables for use by agents to transfer either inbound or outbound calls.		
4	Verify hookflash configured as 500 millisecond duration at PBX or PSTN.		

* Note:

See [Analog connection specifications](#) on page 49 for more information.

! Important:

If you are not using transfer trunks and still want to use the transfer functionality, then you must configure the outbound and inbound lines for hookflash transfer.

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Headsets checklist**Digital network-attached headsets**

#	Description	Notes	✓
1	Provide ____ headset-dedicated channels for headset lines from PBX to the system	—	—
2	Headset connections are tie line/tie trunks to the PBX. These agents will not be logged in to an ACD queue during participation in blend campaigns.	—	—
3	An agent line will be offhook (nailed-up) to the PBX while the agent is logged on to the system. The system uses the T1 agent headset tie lines to establish this connection.	—	—

*** Note:**

See [Blending and ACDs](#) on page 76 for more information.

Analog network-attached headsets

#	Description	Notes	✓
1	Provide headset-dedicated channels for headset lines from PBX to the system	—	—
2	Provide a total of headset/24, 25-pair, twisted cables for headset connections for supervisor	—	—

#	Description	Notes	✓
	and calling agents to handle outbound and inbound calling.		
3	An agent line will be offhook (nailed-up) to the PBX while the agent is logged on to the system. The system uses the T1 agent headset tie lines to establish this connection.	—	—

*** Note:**

OLIC headset connections are not supported in the CTI deployment option. The OLIC headset connections are approved for use on PG230RM.

Analog direct-attached headsets

#	Description	Notes	✓
1	Provide headset-dedicated headset lines through the distribution panel to the system.	—	—
2	Provide cabling from the distribution panel to each agent workstation location.	—	—
3	Cable type is shielded, 25-twisted pair Telco, 26 gauge or larger.	—	—
4	Provide one cable for every 12 headset lines.	—	—
5	Label each cable with: Port, voice connection type, and agent location.	—	—
6	Terminate each cable with male, 50-pin, 90 degree Amphenol connector at distribution panel. Terminate at headset with appropriate connector based upon the model selected.	—	—
7	Use 4-wire cabling, connecting two pair of wires for each headset line.	—	—
8	Use of RJ21X (4-wire, 4-row, connectorized) punch down block for termination of analog lines at distribution panel.	—	—
9	Cables running from the distribution panel to the agent headsets are hard-wired directly in to the punch down block at the distribution panel.	—	—
10	Maximum cable length from the system to any headset location must not exceed 3000-ft. (900 m).	—	—
11	Leave at least 9-ft. (3m) of slack for each cable terminating at the system.	—	—

Related Links

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[ISDN-PRI digital line requirements](#) on page 114
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Modem line checklist

Ensure that the installation of modem lines is complete before the site preparation begins. Provide the modem lines, as explained in the following table, dedicated to the system and components:

#	Description	Notes	✓
1	One modem line terminating at the Proactive Contact cabinet location.	This modem line acts as the primary point of entry for supporting your system.	—
2	Modem lines must be standard analog Direct Inward Dial (DID), capable of two-way calling and long-distance outbound dialing such as a POTS line.	—	—
3	Modem lines must be configured without any PBX features, such as call waiting.	—	—
4	10 feet of slack cable and a MALE RJ-11 termination must be available at each device location.	—	—

Network checklist

Customers must set up a 100-Mbps, full-duplex, no auto-negotiation network connection or a 1000-Mbps, full-duplex network connection. For better system performance, use a 1000-Mbps network connection. You must provide a network connection at the system terminated as a male UTP (RJ-45).

#	Description	Notes	✓
1	Provide one static IP Address for the CPU that is configured on your network and routing table, if the routing table is present.	—	—
2	Supply a default router address if the system needs to communicate with any network node not on the same subnet.	The system components must be on the same subnet as the default router. Provide the subnet mask to your Avaya Project Manager.	—
3	Assign an IP address for the Network printer.	—	—
4	Provide the network Domain Name.	—	—
5	Provide the DNS server name and IP address.	—	—

*** Note:**

For more information, see [Data Transfers](#) on page 37.

File transfer checklist

The file transfer method is a host-initiated SFTP using TCP/IP. For more information, contact the Avaya Project Manager.

The following table is a checklist for the file transfer feature:

#	Description	Notes	✓
1	Each file that is uploaded and downloaded requires a unique filename.	Naming convention for the downloaded files are: • rcvfile1.raw • rcvfile2.raw, etc. Naming convention for the uploaded files are: • xmtfile1.xfr • xmtfile2.xfr, etc.	
2	Download file transfer is initiated by <customer name or Avaya > and is scheduled for the number of days and hours as specified by your Host contact.		
3	Upload File Transfer is initiated by <customer name or Avaya> and is scheduled for the number of days and hours as specified by your Host contact.		

*** Note:**

For more information, see [Data Transfers](#) on page 37.

Administrator console checklist

The checklist for the Administrator console is explained in the following table:

#	Description	Notes	✓
1	The Administrator console is a dedicated computer.	The computer must meet the minimum Administrator console requirements. See Administrator Console on page 105.	
2	The location of the Administrator console is as per the requirements.	See Administrator Console on page 105 for the requirements.	
3	If the Administrator console and the printer are on the same table, observe the positioning guidelines.	For the requirements, see Administrator Console on page 105 for the guidelines.	
4	The computer must have an available RS-232 serial port for connecting to the remote access hardware.	Avaya supplies a 15– foot RS232 cable which terminates in a DB25 connector and is designed for a dumb terminal. Alternatively, use an available USB port in conjunction with a USB to Serial Adapter. You must have the cables for either of the solutions.	
5	Assign an IP address to the Network printer.		

Supervisor workstation checklist

Identify and dedicate workstation facilities for each Supervisor application license purchased. The location of the Supervisor workstation varies based upon your organizational requirements. Avaya provides the Proactive Contact Supervisor software. The customer provides a computer that meets the minimum Supervisor workstation requirements. See [Supervisor Workstation](#) on page 106.

#	Description	Notes	✓
1	Verify network connectivity from the Supervisor address to the system.		

Agent workstation checklist

The checklist for the Agent workstations is explained in the following table:

#	Description	Notes	✓
1	Provide the Agent workstations on the network as required.	For personal computer specifications, see Agent Workstation on page 108.	—
2	Personal computers designated as Agent workstations are connected through the network to the system.	—	—
3	Provide the Proactive Contact Agent operating system.	—	—
4	Provide the Proactive Contact Agent desktop.	—	—
5	If you are using Proactive Contact Agent API application, ensure that the host emulation session supports DDE.	—	—

Printer checklist

The system requires minimum one network printer for printing reports.

#	Description	Notes	✓
1	Purchase a laser printer that has either an internal or external HP Jet Direct Card.	Ensure that this printer can communicate in PCL 6, the Printer Control Language version 6.0 of HP.	—
2	The printer must have network access via TCP/IP.	Provide either the static IP address or the DNS name to enter into the Avaya hosts table.	—

Internet Monitor checklist

The checklist for the installation of Internet Monitor is explained in the following table:

#	Description	Notes	✓
1	Browsers that are used to connect to the Internet Monitor must be Microsoft Internet Explorer 6.0 or later or Mozilla Firefox 3.0 or later.	—	—

#	Description	Notes	✓
2	Internet Monitor transfers approximately 40 KB of data from the system to Web server every 30 seconds.	—	—

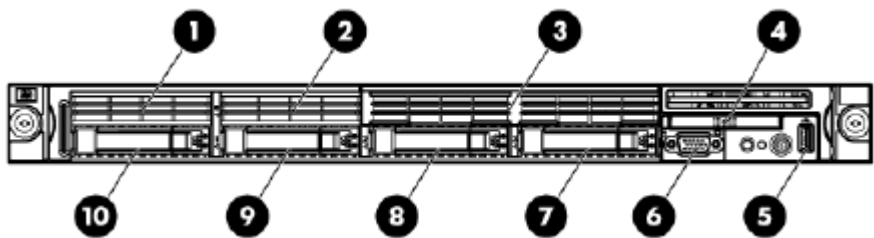
Cut and paste checklist

The following table lists the items that you require to create a cut and paste solution to your host:

#	Description	Notes	✓
1	Provide the host emulation software name, for example, Reflections and the host emulation software type, for example, VT100 or 3270.	—	—
2	Identify one Agent workstation that Avaya can use for development and testing of your desktop Cut and paste solution.	You can reassign the selected workstation upon completion of the new system installation.	—
3	Install and configure workstation hardware and software two weeks prior to the scheduled installation date or earlier, based on the custom solution requirements.	—	—
4	Workstation must be configured with full production functionality, and associated Agent headset telephone facility.	—	—
5	Verify installation of analog DID modem line to this workstation location.	—	—
6	Provide this modem number, with a Host login and password.	You can provide a temporary login and password for security reasons.	—
7	Install Avaya Web Conferencing.	—	—
8	Provide a production telephone for use during the development and testing period.	—	—
9	For the development work, allocate one resource person to each organization with the Avaya resource. The resource must be familiar with Host. The resource is usually required for 4 hours for each cut and paste solution	—	—

Chapter 8: PG230RM special component hardware checklists

Front view of HP DL360 G7 Server

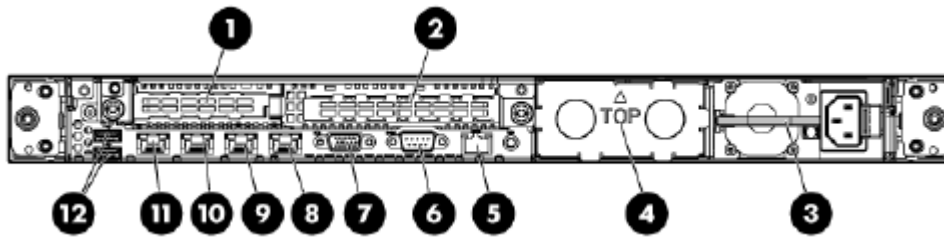


Note:

Servers ship with 2–4 hard disk drives, depending upon product requirements.

No.	Description
1	Not present
2	Not present
3	DVD-RW
4	HP Systems Insight Display
5	Front USB connector
6	Video connector
7	Hard drive bay 4
8	Hard drive bay 3
9	Hard drive bay 2
10	Hard drive bay 1

Back view of HP DL360 G7 Server



No.	Description
1	Slot 1 PCIe x8 (8, 4, 2, 1) * Note: Servers might ship with a PCI card installed, depending upon product requirements.
2	Slot 2 PCIe x16 (16, 8, 4, 2, 1), 75W +EXT 75W* * Note: Servers might ship with a PCI card installed, depending upon product requirements.
3	Power supply bay 1 (populated)
4	Power supply bay 2
5	iLO 3 connector
6	Serial connector
7	Video connector
8	NIC 4 connector
9	NIC 3 connector
10	NIC 2 connector
11	NIC 1 connector
12	USB connectors (2)

*This expansion slot provides 75 W of power to an adapter, with an additional 75 W of power supplied by external power.

Standard server specifications

Standard configurations and options for the HP DL360 G7 server:

Base unit	Baseline	Options
DL360 G7	1U chassis, dual socket	No additional options supported.
Processor	Intel E5620 Quad Core /2.4 GHz (Westmere)	Intel X5670 six Core/2.93 GHz (Westmere)

Base unit	Baseline	Options
	3 memory channels per CPU with up to 3 RDIMMs per channel. Most applications use 1 or 2 RDIMMs per channel to optimize memory speed.	Upgradable to dual processors for either E5620 or X5670
Memory	4 GB DDR3 RDIMMs (1333 MHz) Modules Total of 24GB (4GB x 6) DDR3 1333MHz Registered CAS-9 Memory	—
HW RAID 1	P410i RAID controller with 256 MB cache and battery backup. Optioned as RAID 1 or 5	N/A
Hot-Plug disk drive cage	4 Small Form Factor 2.5" hot-plug hard drives bays are available when an optical drive is installed.	HP offers servers with 8 drive bays that do not support an optical drive that is not supported by Avaya.
Disk drive	146GB SAS 2.5" 10K RPM 6G DP Hard Drive. Two base configurations: - RAID 1, 2 x 146GB drives - RAID 5, 3 x 146GB drives	Options: - Additional 146GB 10K RPM drive (4 max. with optical drive) - High performance 146GB 15K drives 300GB 10K HDD
NICs	4 integrated ENET Gigabit NIC ports with TCP offload engine (included on motherboard)	HP NC382T PCI Express Dual Port Gigabit NIC expansion card (Broadcom 5709 silicon)
PCI slots	Two PCI-Express Gen 2 expansion slots: one full-length, full-height slot and one low-profile slot (1-FL/FH x 16 PCIe & 1-LP x 8 PCIe Riser	Meeting Exchange Recording uses a PCI-X riser in place of the low profile PCIe riser in the standard server.
Removable media	Slim line SATA DVD-RW optical drive (used in all Avaya configurations)	No additional options supported.
Power supply	460 W hotplug AC power supply (qty 2)	750W AC power supply 1200W DC power supply - Single and dual power supply configurations
Fans	3 fan modules (fan redundancy standard)	No additional options supported.
Additional items	One front USB, two back USB, one internal USB	—

HP DL360 G7 Server environmental specifications

Specification	Value
Temperature range	 Note: All temperature ratings shown are for sea level. An altitude derating of 1°C per 300 m (1.8° per 1,000 ft.) to 3048 m (10,000 ft.) is applicable. No direct sunlight allowed.
Operating	10°C to 35°C (50°F to 95°F)
Shipping	-40°C to 70°C (-40°F to 158°F)
Maximum wet bulb temperature	28°C (82.4°F)
Relative humidity (noncondensing)	 Note: Storage maximum humidity of 95% is based on a maximum temperature of 45° C (113°F). Altitude maximum for storage corresponds to a pressure minimum of 70 kPa.
Operating	10% to 90%
Non-operating	5% to 95%

HP DL360 G7 Server physical specifications

Type	Description
Dimensions	Height: 4.32 cm (1.70 in)
	Width: 42.62 cm (16.78 in)
	Depth: 69.53 cm (27.38 in)
Weight (maximum; two processors, two power supplies, eight hard disk drives)	15.97 kg (35.20 lb)
Weight (minimum; one processor, one power supply, no hard drives)	14.51 kg (32.00 lb)
Weight (no drives installed)	14.06 kg (31.00 lb)

Installing the server in the rack

This installation checklist contains the principle steps that are necessary to install the server in the rack. Each task refers to an existing HP document and the topic title(s) that contains the step-by-

step procedures. Where applicable, additional information and clarifications appear in the *Avaya recommendation* column. Perform each task in the order specified.

*** Note:**

Although not used frequently, Avaya customers are required to have a monitor, keyboard, and mouse available for use by servicing technicians.

No.	Task	Reference	Avaya recommendation	✓
1	Observe safety warnings	ISI UG: <i>Rack warnings</i>		
2	Examine contents of shipping container (Avaya provided equipment)	UG: <i>Contents of the server shipping carton</i>	Ensure that the 6-digit material code on the order matches the 6-digit material code on the shipping container.	
3	Verify that the rack is installed according to the manufacturer's instructions and in accordance with all local codes and laws			
4	Examine installation environment (customer provided equipment)	UG: <i>Optimum environment</i>		
5	Verify that the rack is grounded in accordance with local electrical code.	UG: <i>Electrical grounding requirements</i>		
6	Remove the cabinet doors, if necessary.			
7	Determine and plan the vertical spacing of the servers in the frame.		Note that air flows into the front of the server and out the air vents located on the top surface of the server chassis. A 1U spacing is sufficient.	
8	Attach the rails to the rack.		The rails included with the server will accommodate most square-hole racks. If these rails do not fit the rack, the customer must provide rails or a shelf for rack installation. Also, the rails included with the server might not work with round-hole racks, in which case the customer can obtain rails and/or a shelf from any	

No.	Task	Reference	Avaya recommendation	✓
			distributor, for example http://www.racksolutions.com/ . The customer-provided rails and rack must be on site prior to the first day of installation.  Note: The customer is responsible for any rack screws.	
9	Attach the server to the rack.	UG: <i>Installing the server into the rack</i>		
10	(Optional) Install the cable management arm.			
11	Connect to the network.			
12	Connect the power cord(s).	SP: <i>Connecting the power cord to the power supply</i> UG: <i>Powering up and configuring the server</i>		
13	Power up the server.	UG: <i>Powering up and configuring the server</i>		

Hardware checklists for Proactive Contact System

Remote access hardware checklist

Avaya Support Services must remotely obtain access to the system console and network. Such access is traditionally provided by a secure console server. The secure console server must have four asynchronous serial ports.

#	Avaya material code	Alternate or vendor part number	Description	Notes	✓
1	700500417	SLC00812N-03	APC ACC SRVR 8PT LANTRONIX SLC8 (SLC server only)	 Note: This unit does not have a built-in modem. Secure Console Servers leverage your existing IP network or a	—

#	Avaya material code	Alternate or vendor part number	Description	Notes	✓
				modem connection to provide remote access.	
2	700448251	50040-02	CABLE ASSY LNTRNX-ADM TRM DB9F-DB25M	—	—
3	700448269	50041-02	CABLE ASSY LNTRNX-MODEM DB9F-DB25M	—	—
4	700409030	50042-02	CABLE ASSY LNTRNX-CPU DB9F-DB9F	—	—
5	700409048	50043-02	CABLE ASSY LNTRNX-SWITCH DB9F-DB25M	—	—
6	700500485	200.2071	DB9 to RJ45 Adapter The kit provided with the Lantronix SLC8 includes all the cabling and adapters necessary to connect ACCESS SERVER.	—	—
7	700500755	—	1 FT RJ45 Straight Through Patch Cable	—	—
8	700408990	34775-02	10FT CAT5 RJ45 Patch Cable (only included with the Ethernet Hub)	—	—
9	700500891	—	Lantronix SLC8 Access Server v5.6 (Unix/Linux) CD (software)	—	—
10	700500892	—	APC ACC SRVR 8PT LANTRONIX SLC8 KIT (SCS400 to LANTRONIX SLC8 upgrade/replacement kit)	—	—
11	247873	—	APC ACC SRVR LANTRONIX 8PT KIT RHS (entire LANTRONIX SLC8 kit)	—	—

#	Avaya material code	Alternate or vendor part number	Description	Notes	✓
1 2	700204936	35231-01	MODEM US ROBOTICS 56K 3453	—	—
1 3	213942	—	MODEM US ROBOTICS 56K 3453 KIT (entire modem kit)	—	—

*** Note:**

You need four kits of material code 700500485 and four kits of material code 700500755. An upgrade or conversion kit from Lantronix SCS400 to Lantronix SLC8 is available with the material code 700500892. You also have the option of a full Lantronix SLC8 kit that has all the Lantronix components except the modem. The material code for this kit is 247873. You must order the modem separately.

For additional information, go to: http://www.lantronix.com/pdf/SecureLinx-SLC_UG.pdf

Ethernet switch checklist

#	Description	Notes	✓
1	Provide an Ethernet switch that supports 100 Mbit full-duplex (4 ports minimum; you can use Gigabit Ethernet switch supporting 1000-Mbit) to support the network interface between the workstation, PG230RM, and the remote access server. This Ethernet switch is fully dedicated to the system and is installed in the rack provided by the customer. The Ethernet switch is mandatory.	You can use the Hewlett Packard J4090A Option ABA (8 port, 10BaseT) * Note: Do not make network connections other than the three connections mentioned earlier: the workstation, PG230RM, and the remote access server.	

Tape device checklist

#	Description	Notes	✓
1	Provide an external DDS tape drive for system and application backup.	• HP AG428ATape Drive with USB connector (Required) • HP StorageWorks DAT 72 USB external Tape Drive (Product No: DW027A)	
2	Connectivity accomplished via a PCI-based SE-SCSI card.		
3	Use the following tape: DAT 72 (C8010A)	HP DAT 72 data cartridge, 72 GB, 170m, one pack	

Electrical checklist

The PG230RM cabinet is equipped with IEC-320 C14 electrical connectors. Use one separate and dedicated circuit with the appropriate receptacle for the system cabinet. See [PG230RM Cabinet Specifications](#) on page 98.

#	Description	Notes	✓
1	Provide a 15 A circuit with 15 A circuit breaker.		
2	Provide a power cord:	• One Earth-grounded, three-wire, single or double outlet within 9 ft. of the cabinet. • North America: Use the provided 3 prong grounded, NEMA 5-15 plug. • Europe, South America, and Japan: Provide the appropriate power cord, locking plug, and receptacle for the electrical cord. See Component hardware specifications on page 100.	
3	Provide a wire to connect the system chassis to building Earth ground.	Use a wire of minimum 10 gauge with dimensions .1019" / 2.6mm and ground conductors that are green insulated wires with minimum one yellow stripe.	

PG230RM space checklist

The PG230RM implementation does not require an enclosure to house all the other support equipment such as the CPU, modems, access servers, and the UPS. You can house some or all of the equipment in an enclosure or open rack. However, you must comply with the cable length and environmental requirements.

#	Description	Notes	✓
1	Access and entry ways (including doors, hallways, stairs, elevators, and lifts) must be 43 inches x 36 inches x 32 inches to accommodate the crated system cabinet.		
2	Allow for the appropriate cabinet space:	(H x W x D) 28 in x 17.5 in x 25.5 in (0.71 m x 0.44 m x 0.65 m)	
3	Reserve a minimum workspace of 3 ft (0.92 m) at the front and the rear of the cabinet to allow the doors to open fully.		
4	Provide proper ventilation:	Ensure that the ventilation slots on each side of the cabinet are not blocked and adequate	

#	Description	Notes	✓
		airflow is provided. Typical rack spacing must ensure adequate airflow.	
5	Maintain a minimum distance of 5 feet (1.5 meters) from the air conditioning or heating ducts.		
6	Place one 4 ft. X 2 ft (1.3 m. x 0.6 m.) or larger table that supports 50 lbs (18.65 kg), located no more than 8 ft. (2.66 m) away from the cabinet.		
7	Tile or concrete floors are preferred in a computer room. If a static free floor is not available, provide a static mat.	The rack must support 135 lbs (62 kg) for each cabinet and have two or four rail racks. See the following details: • The bare enclosure (with rack mount ears installed, front door removed and no switch cards or adapter modules/cables) with a non-redundant power supply weighs 70 lbs. • The bare enclosure (same as above) with a redundant power supply weighs 85 lbs. • The front door weighs 6 lbs and has lift-off hinges, so that you can remove the doors before installation. • If switch cards and adapter modules and cables are left in the enclosure, the weight will increase. Most switch cards are 1.7 lbs. Therefore, a system with eight Quad-T1 cards and the other standard cards (ENBC, two LPVC2s, two DSP2s) adds 22 lbs to the total weight. Adapter modules and cables add another 6 lbs. The total weight of the system with a nonredundant power supply and with the front door is 104 lbs. • Four installation guide pins are provided for easier installation. You can lift and slide the enclosure over the pins to hold the enclosure until the rack mount screws are installed. Then remove the guide pins and replace with normal screws.	

Chapter 9: Agent Blending switch checklists

Communication Manager integration checklist

The Proactive Contact system receives inbound call information from the Communication Manager's ACD via your network. Ensure that the following items are configured on your Communication Manager system:

#	Description	Notes	✓
1	Verify that Communication Manager is version 5.2.1 or later.	Application Enablement Services (AES) does not work with the earlier versions of Communication Manager.	
2	Set up an AES or verify if an existing AES can be used.	See the AES documentation for information on setting up and configuring the AES.	
3	Obtain licenses to use AES.		
4	Set up an unrestrictive CTI User on AES and provide this login and password for Agent Blending.		
5	Provide the IP address of the AES server.		
6	Provide a TLINK	You must configure the link in AES.	
6	Define and provide all VDNs that Proactive Contact requires for monitoring.	At a minimum, provide an inbound and acquisition VDN.	
7	Define and provide phantom extensions (CTI dialer only).		
8	Define and provide an AUX-WORK code (Reasoncode) (CTI dialer only - optional)		

Avaya CS 1000 integration checklist

The Proactive Contact system receives inbound call information from the ACD of CS 1000 through the network. Ensure that the following items are configured on your CS 1000 system:

#	Description	Notes	✓
1	Verify that the Avaya Aura® Contact Center 6.1 SP2 or later supports CS 1000		
2	Set up an Avaya Aura® Contact Center or verify that an Avaya Aura® Contact Center exists that can be used.	For information on setting up and configuring the Avaya Aura® Contact Center, see Avaya Aura® Contact Center, documentation.	
3	Obtain licenses to use Avaya Aura® Contact Center.		
4	Verify the installation type of Avaya Aura® Contact Center matches with the integration type of CS 1000.	For information on setting up and configuring the Avaya Aura® Contact Center with CS 1000, see Avaya Aura® Contact Center documentation.	
5	Verify that the services of Avaya Aura® Contact Center are functional.		
6	Verify that the CCT-OI Web services are functional on Avaya Aura® Contact Center.		
7	Verify that the CS 1000 system is correctly integrated with the Avaya Aura® Contact Center system.		
8	Verify that the CS 1000 system is correctly integrated with the Avaya Aura® Contact Center system.		
9	Set up an Avaya Aura® Contact Center User CallRecordUser on Avaya Aura® Contact Center and provide this login and password for Agent Blending.		
10	Provide the IP address of the Avaya Aura® Contact Center server.		
11	Provide the port address of CCT-OI Web services of Avaya Aura® Contact Center.		
12	Define and provide all CDNs that Proactive Contact requires for monitoring.	Provide an inbound and acquisition CDN.	

For details on integrating with AACC, see *Configuration — Avaya Communication Server 1000 Integration* at <http://support.avaya.com/css/P8/documents/100093207>

Avaya MBT integration checklist

The Proactive Contact system receives inbound call information from the Avaya MBT's ACD through your network. Ensure that the following items are configured on your Avaya MBT system:

#	Description	Notes	✓
1	Verify that Avaya MBT is the version supported by Avaya Aura® Contact Center (AACC) 6.1 SP2 or higher.		
2	Set up an Avaya Aura® Contact Center (AACC) or verify that an AACC exists that can be used.	See the AACC documentation for information on setting up and configuring the AACC.	
3	Obtain licenses to use AACC.		
4	Verify installation type of AACC is SIP.	See the AACC documentation for information on setting up and configuring the AACC with Avaya MBT.	
5	Verify AACC's services are running and up.		
6	Verify CCT-OI web services are running on AACC.		
7	Verify CS1000 system is properly integrated with AACC system.		
8	Set up an AACC User 'CallRecordUser' on AACC and provide this login and password for Agent Blending.		
9	Provide the IP address of the AACC server.		
10	Provide the port address of AACC's CCT-OI web services .		
11	Define and provide all CDNs that Proactive Contact requires for monitoring	At a minimum, provide an inbound and acquisition CDN.	

Proactive Contact with CTI integration checklist

The Proactive Contact system receives inbound call information from the Communication Manager's ACD via your network. Ensure that the following items are configured on your Proactive Contact with CTI system:

#	Description	Notes	✓
1	Verify that Communication Manager is version 3.0 or later.	Application Enablement Services (AES) does not work with the earlier versions of Communication Manager.	
2	Set up an AES or verify if an existing AES can be used.	See the AES documentation to setup and configure the AES.	
3	Obtain licenses to use AES.		

#	Description	Notes	✓
4	Set up an unrestrictive CTI User on AES and provide this login and password for Agent Blending.		
5	Provide the IP address of the AES server.		
6	Provide a TLINK	You must configure the link in AES	
7	Define and provide all VDNs that will be required to make predictive outbound calls.		
8	Define and record voice messages that will be required by Proactive Contact with CTI.		
9	Provide extensions for Proactive Contact to access the voice messages.		

ASPECT CallCenter 6.0 integration checklist

Provide a brief introduction of the purpose of the worksheet and the type of user who must gather, record, and use this information.

#	Description	Notes	✓
1	Obtain licenses and install ASPECT CallCenter optional software packages: • Application Bridge • Event Bridge		
2	Prepare for the connection between your network and the Proactive Contact system.	See Network Communications on page 29 for details.	
3	Communications protocol supports TCP/IP, standard only.		
4	Configure your Bridge/Router table to allow communications from Proactive Contact to the ASPECT CallCenter.		
5	Configure your CallCenter to enable event monitoring.	Your ASPECT representative must create a file that acts as a flag or indicator to the Aspect to allow event monitoring.	

Lucent 5ESS with PINNACLE 5E9 integration checklist

The Proactive Contact system receives inbound call information from the PINNACLE MIS workstation via your network. Ensure that the following items are configured on your PINNACLE system:

#	Description	Notes	✓
1	Configure your Bridge/Router table to allow communication from the Proactive Contact system to the PINNACLE MIS workstation.	• Maximum 600 ft. (185 m) from the MIS workstation to the Proactive Contact system cabinet. • Communication protocol supports standard TCP/IP only.	
2	Prepare for the connection between your network and the Proactive Contact system.	See Network Communications on page 29 for details.	
3	If a firewall is used, CentreVu CT must reside on the Proactive Contact side of firewall.		
4	Configure the ACD to send appropriate OSPS or BRCS messages.		

Chapter 10: ENBC software version matrix

Switch Component compatibility with various software releases

The following table contains a list of various types of cards that are used in switch component and the compatible firmware:

Switch Component	Release v18.1	Release v16.2.x	Release v15.1.x – v16.1.x	Release v14.3.x	Release v14.2.x	Release v14.1.x
ENBC EPROMS	V17.0.x, v15.2.x, or v14.1x					
QDTC2	1.00 or later.		Not supported.			
4xT1	Not supported.					
4xE1	Not supported.					
DCC		All versions. Different EPROMs required for A-law countries.				
DDC		v1.00 or later. v1.02/v10.02 required for downloading and dynamic PCM encoding.				
DSP2	1.00 or later.			Not supported.		
DTG	All versions. EPROMs and PALs vary for each country.					
E1-CAS	All versions.					
E1-PRI	v1.02 or later.					
E&M (4-wire)	All versions.					
ECC	v1.00/v10.00 or later. v1.02/v10.02 required for downloading and dynamic PCM encoding.					
ECPA	v1.00 or later.					
EDRC	v1.04/v10.04 or later. v1.05/v10.05 or later required for downloading and dynamic PCM encoding.					
EDTG	v1.00 or later.					
EMFCR2	v1.00 or later.					
EPOC	v2.0 or later.					
EUTC	v1.00 or later.					

Switch Component	Release v18.1	Release v16.2.x	Release v15.1.x – v16.1.x	Release v14.3.x	Release v14.2.x	Release v14.1.x
LPVC	v2.00 or later. Do not use v2.02.					
LPVC2	v1.00 or later.					
OLIC	V1.02 or later.					
OLIC2	V2.00 or later.					
PRI	Obsolete card. No longer available.					
PRI/N	v1.05 or later.					
QT1		v1.00 or later.				
QE1		v1.00 or later.				
QT1PRI		v3.00 or v13.00 or later.				Not supported.
QE1PRI		v3.00 or v13.00 or later.				Not supported.
QE1DSS		v3.00 or v13.00 later.			Not supported.	
T1	All versions. Different EPROMs required for various signaling protocols.					
UTC	All versions.					
SCSI Hard Disk Drive	All certified disks.					

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