



Avaya™

Connectivity Guide

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About This Guide

This document provides instructions for installing and configuring AltiGen products as an adjunct solution to an Avaya Definity G3 PBX. The adjunct solution can be used as a cost effective solution for call centers, remote IP agents, remote IP extensions, IP gateways, or any of these solutions.

The document also outlines numbering plans associated with adjunct connecting of call centers, remote agents, extensions or IP tie lines. It supplements the *AltiWare OE 4.6 System Installation and Administration Manual*.

Avaya Definity G3 Integration

This following shows the AltiServ system as a call center and/or IP extension or trunk gateway for the Avaya Definity G3 switch via PRI spans.

A sample configuration and connected call flow is shown below.

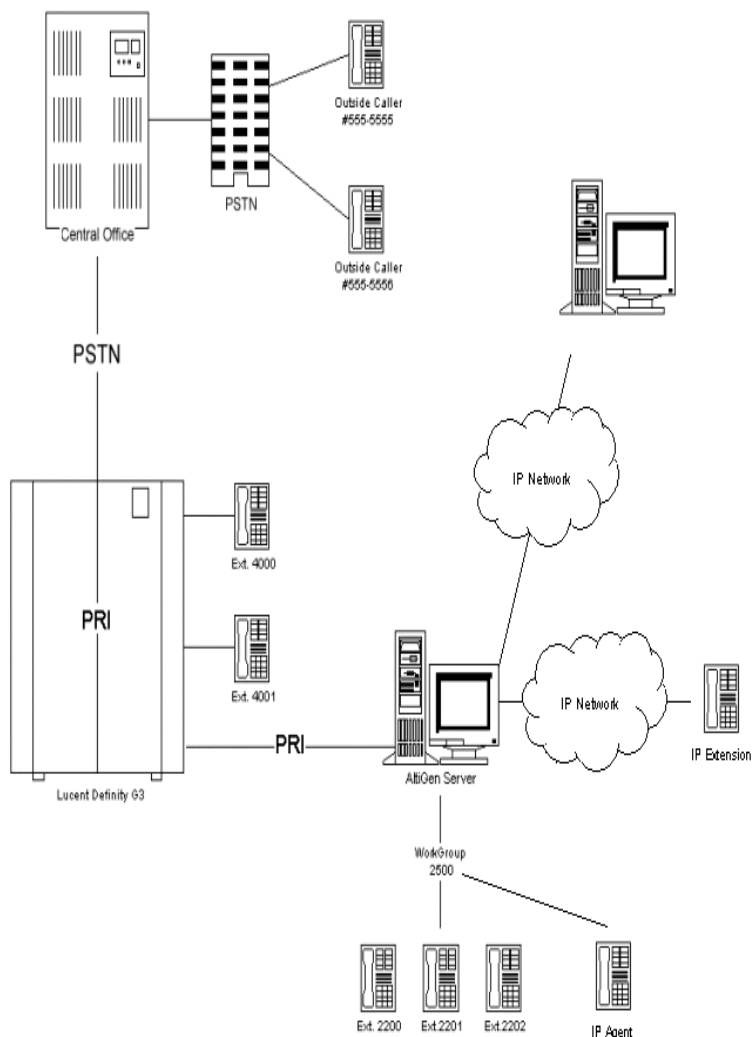


Figure 1. AltiGen system integrated with Avaya Definity G3 Switch (legacy PBX)

System Requirements and Installation

AltiWare-specific minimum system requirements are:

- Avaya Definity running G3 software with at least one DS1/ISDN Trunk Pack (PRI trunk)
- An AltiServ system running AltiWare OE Release 4.0A or above, with at least one T1/PRI board; to install this board, consult the *Quick Install Guide* provided with it
- Analog or IP extensions

AltiServ System Requirement Guidelines

Table 1. System Selection Guidelines

Number of Quantum or Triton Boards per System	CPU Type	Available Memory	Hard Disk Controller	Power Supply	5V Requirement	12V Requirement
1–3	333 MHz	128 MB	IDE/SCSI	Single 300W	15A	6A or better
4–6	700 MHz	256 MB	IDE ATA-100/SCSI	Single 400W or Dual 400W load sharing recommended	20A	16A
7–16	850+ MHz	512 MB	IDE ATA-100/SCSI	Dual 400W with load sharing required	40A	20A

**Individual requirements may vary depending on particular applications. Please contact AltiGen Sales Engineering or Technical Support for assistance on selecting the most appropriate system configuration for your installation.*

Power Requirements

The power requirements are as follows for *each* individual board:

Table 2. Individual Board Power Requirements

Board	5V	12V	Slot Type
Quantum	1.6	1.4A	ISA
Triton Analog Extension	1.6	1A*	PCI
Triton Analog Trunk LS/GS	1.6	0.25A	PCI
Triton Analog Trunk LS	1.6A	0	PCI
Triton VoIP	1.6	0	PCI
Triton T1/PRI	1.6	0	PCI

*1A@12V is provided by power connector.

For complete instructions on installing and configuring the AltiServ system, consult the *AltiWare OE System Installation and Administration Manual*.

AltiWare T1/PRI and Trunk Configuration

See Chapters 6 and 7 in the *AltiWare OE Release 4.6 System Installation Administration Manual* for instructions on configuring the T1/PRI board and the trunk. Use the following settings for AltiWare.

T1 Configuration

- Frame Type = ESF
- Line Code = B8ZS

Triton T1 Configuration - TritonT1/PRI-1

Span: 0

Status: OK

Statistics since: Fri 02/07/03 16:09:01

Frame Errors:	0	Line Code Errors:	0
OOF Errors:	0	Bit Errors:	0
Rec Frame Slips:	0	Xmt Frame Slips:	0

Clear

Frame Type

☐ SF ☒ ESF

Line Code

☐ AMI ☒ B8ZS

Zero Code Suppression: None

CD Bits Handling: Set CD = AB

☐ System Clock Master

T1/E1/PRI Configuration OK Cancel

Figure 2. T1 Configuration window

T1/PRI Configuration

- Span type selection = Regular ISDN PRI
- Switch mode = ATT 5ESS PRI
- NSF = None
- TEI = Default setting

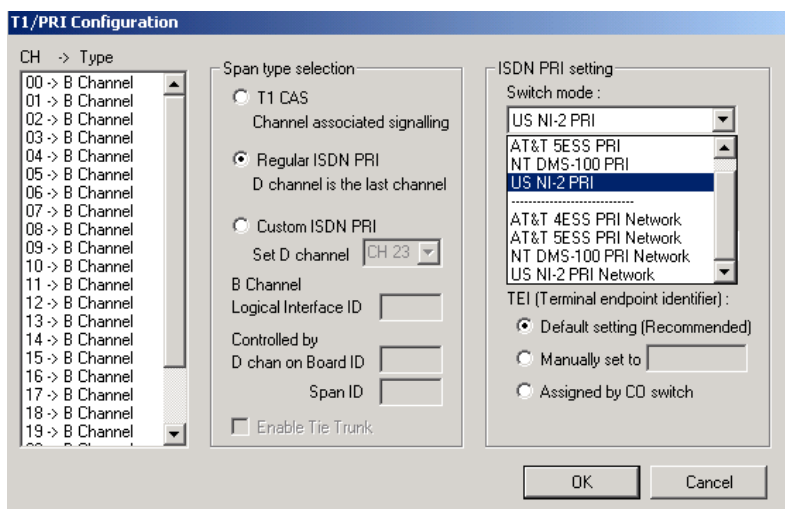


Figure 3. T1/PRI Configuration window

Trunk Configuration

- Assign an access code for the PRI trunks to your system number plan.
- Assign an access code for an out call route, which will be created after trunk configuration is complete.

The screenshot shows the 'System Configuration' window with the 'First Digit Assignment' section. The 'Route Access' option for digit 9 is highlighted with a red circle. The 'Extension' section shows 'Number Length' set to 3 and 'Default Password (For newly created ext)' set to 74903. The 'DID' section shows 'Number Length' set to 3. The 'First Digit Assignment' section has a grid of dropdown menus for digits 1 through 9, and an asterisk (*) for 'Invalid'. The 'Route Access' option for digit 9 is highlighted with a red circle. Below the grid, a note explains that the screen defines how the system responds to the first digit entered by the user.

Digit	Assignment
1	Extension
2	Extension
3	Extension
4	Extension
5	Extension
6	Trunk Access
7	Extension
8	IP Trunk Access
9	Route Access
*	Invalid
0	Operator
#	Feature Access

This screen defines how the system responds to the first digit entered by the user. For example, if Extension is selected for digit '1', the system will then treat the number, that begins with a '1' as an extension number.

Figure 4. Assigning first-dialed digits to the Avaya PRI trunk access code and the out call route

- Set the access code for all PRI trunks to the same value.

Trunk Configuration -- Card:1 Channel:0

General | In Call Routing | Out Call Blocking

Location	Type	Access Code	Phone No
01:00	LS	9	-
01:01	LS	9	-
01:02	LS	9	-
01:03	LS	9	-
05:00	LS	9	-
05:01	LS	9	-
05:02	LS	9	-
05:03	LS	9	-
05:04	LS	9	-
05:05	LS	9	-
05:06	LS	9	-
05:07	LS	9	-
05:08	LS	9	-
05:09	LS	9	-
05:10	LS	9	-
05:11	PRI	6	-
07:00	PRI	6	-
07:01	PRI	6	-
07:02	PRI	6	-
07:03	PRI	6	-
07:04	PRI	6	-
07:05	PRI	6	-
07:06	PRI	6	-
07:07	PRI	6	-
07:08	PRI	6	-
07:09	PRI	6	-
07:10	PRI	6	-
07:11	PRI	6	-
07:12	PRI	6	-
07:13	PRI	6	-

Access Code: 6

Area Code:

Phone Number:

Description:

Trunk Call Predial String: ☐ Trunk Predial String

Centrex Transfer: ☐ Enable Centrex Transfer
Transfer Predial String:

Note: Flash will be used if predial string is not set.

Trunk Dialing Scheme: ☒ Overlap ☐ En-bloc

Attribute: ☒ In Service ☐ Out Of Service

Tenant Selection: 0 NA

Tie Trunk: ☐ Enable Tie Trunk

Trunk Properties

Print Apply to... OK Cancel Apply Help

Figure 5. Access Code for all PRI trunks set to “6”

Routing Calls Across PRI Trunks

To route outgoing calls from AltWare through the PRI trunks on the Avaya Definity system, use Out Call Routing. See Chapter 9 in the *AltWare OE Release 4.6 System Installation and Administration Manual* for complete instructions on configuring out call routing.

- Create an out call route and assign all the PRI trunks to it.
- Set “Insert Digits” to the Avaya Definity trunk access code.

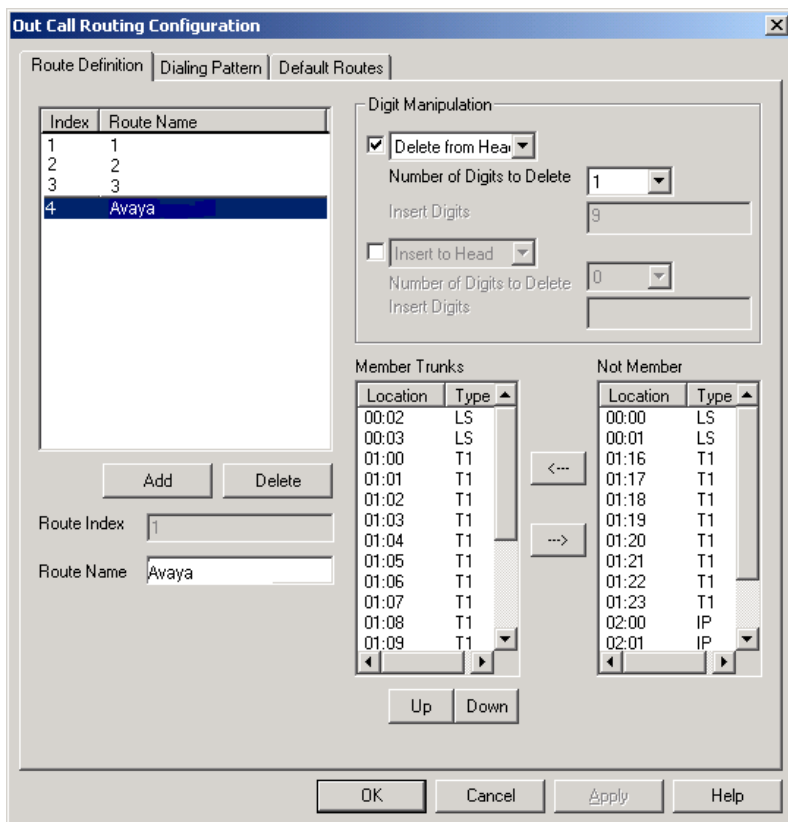


Figure 6. All PRI trunks are Member Trunks of Route “Avaya,” with the Avaya Definity trunk access code inserted at the head of each outbound call

- Create a Dialing Pattern something like the example shown below, setting the Route Priority to the route you created. This pattern designates outgoing trunk calls beginning with a “1” as long-distance calls, and calls beginning with digits 2 through 9 as any type of call (for example, local calls with or without area code).

Prefix	length
1	11
2	?
3	?
4	?
5	?
6	?
7	?
8	?
9	?

☐ Disallow this dialing pattern

Prefix and Digit Length

Prefix: 1

Pattern length including prefix: 11

SIP Server

☐ SIP redirect sever

Route Priority

1. 4: Avaya
2. 0: N/A
3. 0: N/A
4. 0: N/A
5. 0: N/A
6. 0: N/A

Add Delete OK Cancel Apply Help

Figure 7. Creating a dialing pattern for outbound calls

Enabling Transparent Dialing

To enable transparent dialing between the Avaya and AltiServ systems, map virtual extensions to the extensions on the Avaya system. See Chapter 8 in the *AltiWare OE Release 4.6 System Installation and Administration Manual* for complete instructions on configuring extensions.

- Add a virtual extension corresponding to each extension number on the Avaya system.

The screenshot shows a Windows-style dialog box titled "Add New Extension". It has a close button (X) in the top right corner. The dialog is divided into several sections. The first section, labeled "Extension Number", contains a text input field with the value "400" and a message below it stating "Please enter a valid 5 digit long extension number". The second section, labeled "Physical Extension License", contains two fields: "Max Allowed" with the value "64" and "Used" with the value "10". The third section, labeled "Type", contains four radio button options: "Physical extension", "Virtual extension" (which is selected), "Huntgroup", and "Workgroup". To the right of these sections is a large empty rectangular area with a header row containing "Slot" and "Channel". At the bottom of the dialog are two buttons: "OK" and "Cancel".

Add New Extension

Extension Number
400
Please enter a valid 5 digit long extension number

Physical Extension License
Max Allowed 64
Used 10

Type
☐ Physical extension
☒ Virtual extension
☐ Huntgroup
☐ Workgroup

Slot	Channel
------	---------

OK Cancel

Figure 8. Adding extensions

- Allow call forwarding for these extensions to an outside number.

The screenshot shows the 'Extension Configuration' window for extension 400. The 'Restriction' tab is selected. Under 'Outcall Restrictions', the 'No Restriction on Outcalls' radio button is selected. Below this are two sections: 'Prefixes Allowed' and 'Prefixes Disallowed', each with three input fields and a note: 'Enter prefix less or equal to 10 digits. (e.g. 1900 or 976)'. Under 'Other Call Restrictions', the following options are checked: 'Allow Calls to be Transferred or Conferenced to an Outside Number', 'Allow Extension User to Configure Forwarding, Notification and Reminder Call to an Outside Number', and 'Allow Outside Caller to Make or Return Calls from within VM System'. The 'Allow Outside Caller to Make or Forward International Calls from within VM System' option is unchecked. At the bottom are buttons for 'Print', 'Apply to ...', 'OK', 'Cancel', 'Apply', and 'Help'.

Figure 9. Allowing calls to be forwarded to an outside number

- Set call forwarding to an outside number for this extension. Set the first digit to the PRI trunk access code and the number to the Avaya user's DID extension.

Extension Configuration --400

General | Group | Station Speed | Mailbox Setting | Notification | Restriction | **Forwarding** | One Number Access | Monitor List

Forward All Calls

☒ Enable Forward to Voice Mail

6 400

Busy Call Handling

☒ Enable Busy Call Handling

☐ Forward to Extension 102

☒ Forward to Voice Mail

☐ Place Caller in Queue

☐ Forward to Auto Attendant 1

Call Waiting

☐ Enable Single Call Waiting

☐ Enable Multiple Call Waiting

☐ Enable Live Call Handling

Do Not Disturb

☐ Enable Do Not Disturb
Enabling Do Not Disturb will take callers to Busy Handling without ringing the extension.

No Answer Call Handling

☒ Enable No Answer Handling

☐ Forward to Extension 102

☒ Forward to Voice Mail

☐ Forward to Member Voice Mail

☐ Forward to Next Group Member

☐ Forward to Auto Attendant 1

☐ Enable One Number Access

☐ Enable RNA Member Auto Log Out.

Number of Rings Before Handling

4

Print | Apply to ... | OK | Cancel | Apply | Help

Figure 10. Forwarding all calls over the PRI trunks

- Set each physical extension's Direct Inward Dialing value to the extension number itself.

Extension Configuration -- 105 : Physical

General | Group | Station Speed | Mailbox Setting | Notification | Restriction | Answering | One Number Access | Monitor List

Extension	Type	Location
100	Workgroup	
101	Physical(Agent)	04:11
105	Physical	04:10
110	Physical	01:09
120	Virtual	
125	Virtual(Agent)	
199	Physical(Agent)	02:11
200	Huntgroup	
202	Virtual	
220	Virtual	
222	Huntgroup	
300	Physical(Agent)	01:10
333	Huntgroup	
350	Virtual	
351	Virtual	
352	Virtual	
353	Virtual	
354	Virtual	
355	Virtual	
356	Virtual	
357	Virtual	

Physical Location
 Slot: 4 Previous
 Channel: 10 Next
 Add Delete
 Line Properties

Personal Information
 First Name: One Last Name: Five
 Password: Password DID Number: 105
 Tenant: 0 NA
 Description:
☒ Enable Dial-By-Name Service
☐ Enable Intercom
☐ Agent

Forced Account Code
☐ Enable Forced Account Code
☐ Account Code Validation
☐ Override Allowed

Call Recording Options
☒ Record on Demand to Ext VM
☒ Insert Recording Tone

SMTP/POP3 Setting
 Email Name: ext105 ☐ Retrieve Voice Mail By E-mail Client

Mail Forwarding Options
☐ Enable Mail Forwarding Delete Messages After Forward
 Forward Email Address:
☐ Forward Email ☐ Forward Voice Mail

Type
☒ Physical Extension
☐ Virtual Extension
☐ Huntgroup
☐ Workgroup

IP Extension
☐ Enable IP Extension
☒ Dynamic IP Address
☐ Static IP Address
 Logon IP Address: 0 . 0 . 0 . 0
 Available IP License: 31

Phone Display
 Number Field: Caller Number
 Name Field: Caller Name

Print Apply to ... OK Cancel Apply Help

Figure 11. DID for physical extensions set to the same numbers as the extensions themselves

Avaya Definity Configuration

For the Avaya Definity G3, you must configure the **Trunk Group** and the **Signaling Group**.

Trunk Group Configuration

Use all defaults, with the following exceptions:

- **Group Number** - assign any (shown as *[N]* in the sample screen below)
- **Group Name** - assign any (shown as *[Name]* in the sample screen below)
- **Carrier Medium** - set *PRI/BRI*
- **Disconnect Supervision** - set *In=y, Out=n*

- **UDP Codes** - A Universal Dialing Plan (UDP) maintains the appearance of caller information as coming from a single system. The following settings are an example:

— Ext code= 2xxx

— Type UDP code = 222

With these settings, a call from ext 4000 on Avaya to ext 2000 on the AltiGen server would show “2224000” as the Caller ID on the Alti-Gen side.

Trunk Group Configuration Sample Screen

TRUNK GROUP

Group Number: [N] Group Type: isdn CDR Reports: y
Group Name: [Name] COR: 1 TN: 1 TAC: 8009
 Direction: two-way Outgoing Display? n **Carrier Medium: PRI/BRI**
 Dial Access? n Busy Threshold: 99 Night Service:
 Queue Length: 0
 Service Type: cbc Auth Code? n TestCall ITC: rest
 Usage Alloc? n Far End Test Line No:
 TestCall BCC: 4 TestCall Service:
TRUNK PARAMETERS
 Codeset to Send Display: 6 Codeset to Send National IEs: 6
 Max Message Size to Send: 260 Charge Advice: none
 Supplementary Service Protocol: a Digit Handling (in/out): enbloc/enbloc

Trunk Hunt: descend

 Digital Loss Group: 13
 Calling Number - Delete: Insert: Numbering Format:
 Bit Rate: 1200 Synchronization: async Duplex: full

Disconnect Supervision - In? y Out? n

Answer Supervision Timeout: 0

TRUNK FEATURES

 ACA Assignment? n Measured: none Wideband Support? n
 Maintenance Tests? y
 Data Restriction? n NCA-TSC Trunk Member:
 Send Name: y Send Calling Number: y
 Used for DCS? n
 Suppress # Outpulsing? n Numbering Format: public
 Outgoing Channel ID Encoding: preferred UII IE Treatment: service-provider
 Replace Restricted Numbers? n
 Replace Unavailable Numbers? n
 Send Connected Number: n

 Send UCID? n
 Send Codeset 6/7 LAI IE? n

Ds1 Echo Cancellation? n

US NI Delayed Calling Name Update? n

Network (Japan) Needs Connect Before Disconnect? n

INCOMING CALL HANDLING TREATMENT

Service/ Feature	Called Len	Called Number	Del Insert	Per Call CPN/BN	Night Serv
---------------------	---------------	------------------	------------	--------------------	---------------

TRUNK GROUP

Administered Members (min/max): 1/23

GROUP MEMBER ASSIGNMENTS Total Administered Members: 23

Port	Code	Sfx	Name	Night	Sig Grp
1:	01A1301	TN464	F		[N]
2:	01A1302	TN464	F		[N]
3:	01A1303	TN464	F		[N]
4:	01A1304	TN464	F		[N]
5:	01A1305	TN464	F		[N]
6:	01A1306	TN464	F		[N]
7:	01A1307	TN464	F		[N]
8:	01A1308	TN464	F		[N]
9:	01A1309	TN464	F		[N]
10:	01A1310	TN464	F		[N]
11:	01A1311	TN464	F		[N]
12:	01A1312	TN464	F		[N]
13:	01A1313	TN464	F		[N]
14:	01A1314	TN464	F		[N]
15:	01A1315	TN464	F		[N]

TRUNK GROUP

Administered Members (min/max): 1/23

GROUP MEMBER ASSIGNMENTS Total Administered Members: 23

Port	Code	Sfx	Name	Night	Sig Grp
16:	01A1316	TN464	F		[N]
17:	01A1317	TN464	F		[N]
18:	01A1318	TN464	F		[N]
19:	01A1319	TN464	F		[N]
20:	01A1320	TN464	F		[N]
21:	01A1321	TN464	F		[N]
22:	01A1322	TN464	F		[N]
23:	01A1323	TN464	F		[N]
24:					
25:					
26:					
etc.					

Signal Group Configuration

Use all defaults, with the following exceptions:

- **Group Number** - assign any (shown as *[N]* in the sample screen below)
- **Group Type** - set *isdn-pri*
- **Associated Signaling** - set *y*
- **Primary D-Channel** - physical address of the PRI D-channel

Signaling Group Configuration Sample Screen

SIGNALING GROUP

```

Group Number: [N]           Group Type: isdn-pri
Associated Signaling? y      Max number of NCA TSC: 0
Primary D-Channel: 01A1324  Max number of CA TSC: 0
                             Trunk Group for NCA TSC:
Trunk Group for Channel Selection: [N]
Supplementary Service Protocol: a    Network Call Transfer? n

```

System Limitations

The following are known limitations of the Avaya Definity G3 integration.

- Incoming trunk calls transferred from the Avaya system to the AltiServ system will show the caller ID of the Avaya user.
- Voice messages cannot be forwarded between the Avaya and AltiServ systems; however, AltiServ can forward voice messages via email to individual users.
- AltiWare Call Detail Reporting will not be available on incoming calls to the Avaya system, but will be available for all calls to and from the AltiServ system.
- Currently, the maximum PRI spans are as follows:
 - a maximum of 4 PRI spans is supported in OE 4.0
 - a maximum of 6 PRI spans is supported in OE 4.5
 - a maximum of 8 PRI spans is supported in OE 4.6

Glossary of Terms

AltiClient - AltiGen's client software for call center workgroup agents.

AltiGen - AltiGen Communications, Inc.

AltiServ system - the AltiServ call center that adjuncts to another system (AltiWare or Avaya Definity) that contains the PRI trunks used for incoming and outgoing calls.

AltiSupervisor - AltiGen's client software for call center workgroup supervisors; allows silent monitoring and barge-in.

AltiWare system - a system running AltiGen's system software and containing the PRI trunks used for incoming and outgoing calls to and from the adjunct AltiServ system.