



Avaya Solution & Interoperability Test Lab

Sample Configuration for Location Preference Distribution and Vector Conditionals for Media Gateway, Port Network, and Server Status – Issue 1.0

Abstract

These Application Notes describe the configuration of Location Preference Distribution and configuration examples of Vector Conditionals for Media Gateway, Port Network, and Server Status, which are Automatic Call Distribution (ACD) Contact Center features of Avaya Communication Manager.

Introduction

Avaya Communication Manager introduced several new Automatic Call Distribution (ACD) Contact Center features. These Application Notes illustrate a configuration using the following features:

- Location Preference Distribution
- Media Gateway, Port Network, and Server Vector Conditionals.

These features are verified utilizing Avaya Communication Manager Release 3.1.

1.1. Location Preference Distribution

In a multiple location environment, there are networking costs associated with the amount of bandwidth necessary for delivering traffic to and from each location as defined by business requirements for better customer service and contact center resource utilization. Today's architecture of Avaya Communication Manager provides a simpler, flatter communication network to maintain and administer than the previous architecture of a complex network of nodes that utilized multi-site Best Services Routing (BSR) for efficient call routing. A multiple location environment can now be a single Media Server managing a network of Media Gateways and Port Networks. Agents in any location that share a common skill set are part of a single virtual pool where routing is determined by administered distribution algorithms and agent selection criteria without regard to location. An agent in the same location as the incoming ACD call may not receive it, therefore increasing intra-switch network traffic, bandwidth requirements, and networking costs to deliver the call to an agent in a different location.

The Location Preference Distribution feature was developed to precede most caller-agent selection features, to route an incoming ACD call to an available agent in the same location. It works in conjunction with the Multiple Locations feature that defines location numbers to trunk and agents based on the administered assignment. Location Preference Distribution matches the trunk and agent location numbers to give the call delivery preference to the local agent. The use of the Location Preference Distribution feature lowers network costs by reducing the amount of intra-switch network traffic. These Application Notes offer a step by step description for the configuration of Location Preference Distribution.

1.2. Vector Conditionals for Media Gateway, Port Network, and Server Status

Avaya Communication Manager allows for scalability, survivability, and distributed networking (local and remote) using different Media Gateways, Media Servers, and Port Networks. Avaya Communication Manager is designed with failover and redundant call control capabilities for the continuity of operations that is vital in business today, without the loss of centralized administration or feature functionality.

There are several survivability options available with Avaya Communication Manager. One option includes an Enterprise Survivable Server (ESS) that is designed to take over call processing capabilities in the event that Port Networks and Media Gateways are unable to reach the Primary

Server. ESS is typically located in a remote location from the Main Server. It allows for support of distributed Media Gateways and Port Networks located throughout the customer network. Another survivability option includes a H.248 Media Gateway configured with a Local Survivable Processor (LSP) that allows for connection-preserving failover when the Media Gateway can no longer maintain registration with the remote Main Server. This condition may be due to isolation resulting from local WAN connection problems. The remote Media Gateway-Server pair takes over call processing capabilities from the Main Server.

Avaya Communication Manager is also designed to provide alternate routing of calls based on the different failover conditions of Media Gateways, Port Networks, and Servers in the communication network. Three new call vector conditionals with the **goto step** or **goto vector** commands test which type of Server is processing the vector or test the registration status of the Media Gateways and Port Networks connected with that Server. The three conditionals are as follows:

- Media-Gateway – monitors the registration status of the H.248 Media Gateway.
- Port-Network – monitors the registration status of the active IPSI that provides service to the respective Port Network.
- Server – monitors the type of Server currently processing the call vector step (e.g. Main, ESS, or LSP).

These vector conditionals allow for flexibility and provide automatic alternate call routing or call handling. These Application Notes offer several vector configuration examples using Media Gateway, Port Network, and Server Vector Conditionals and explain the rationale.

1.3. Reference Network Configuration

The sample Avaya Solutions Assurance Credit Card & Banking Configuration depicted in **Figure 1** is used to verify these Application Notes. **Figure 1** simulates a typical multi-location financial customer with a hub and spoke architecture. The Main Office consists of an Avaya S8710 Media Server IP Connect High Reliability Configuration. It also consists of two Avaya G650 Media Gateways in an IP Connect High Reliability configuration. The Branch Office Port Networks and Media Gateways register to the C-LAN located in Main Office G650 Media Gateways, each with its local survivability option. All IP Telephones in the sample configuration register to the C-LANs located in the G650 in the Main Office and Branch 2. Each location has Public Switched Telephone Network (PSTN) trunks and private WAN access. The Main Office has Internet Access via the Cisco PIX Firewall. Remote Access Users utilizing the Internet have access to the private network by either connecting through the Cisco PIX Firewall or by authenticating using a Cisco VPN Client and Cisco VPN 3000 Concentrator.

Section 2 of these Application Notes provides an equipment breakdown by location in **Table 2** through **Table 8**. **Table 1** provides a summary of assigned Location Numbers for the sample configuration.

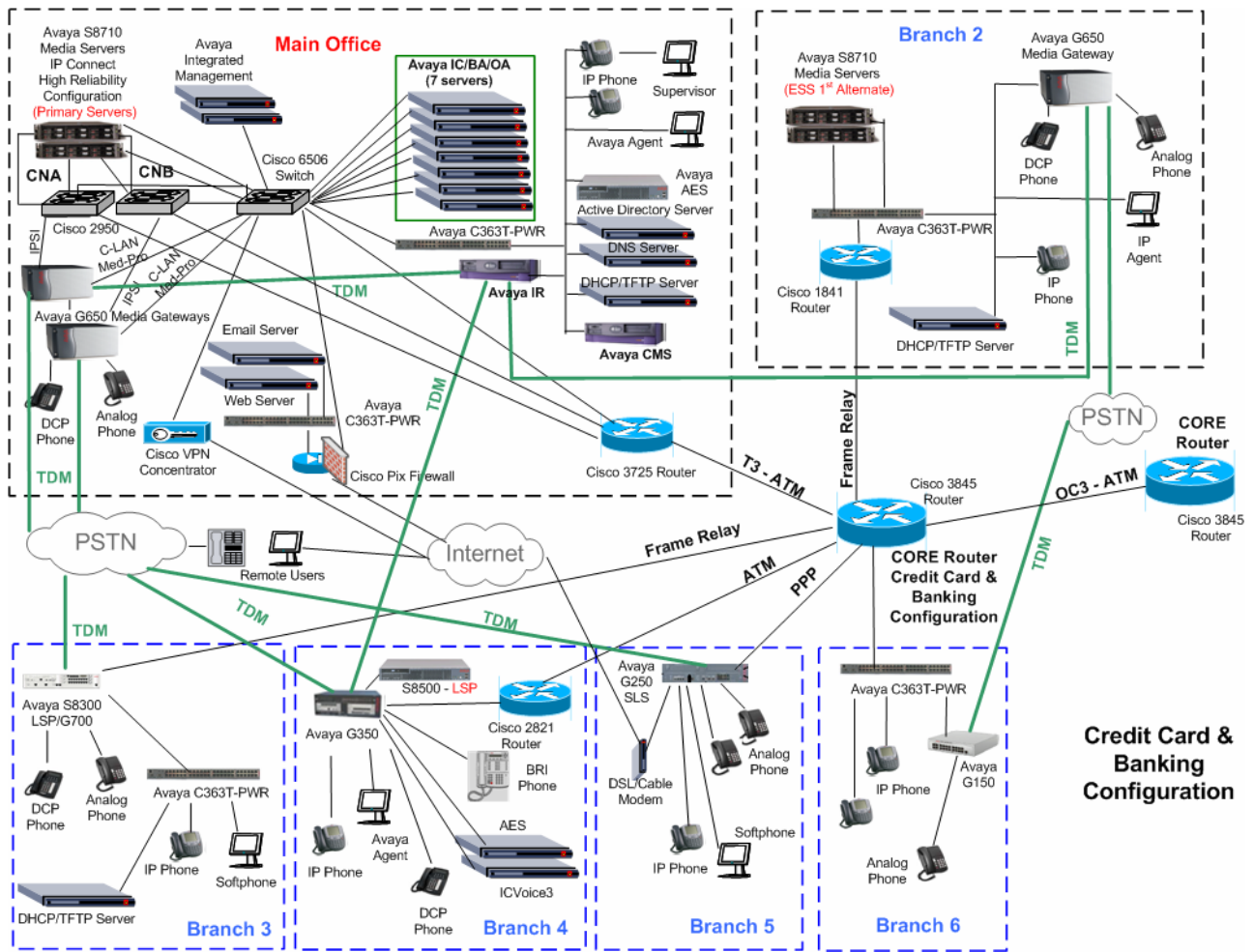


Figure 1: Reference Network Configuration

Location Name	Location Number
Main Office	1
Branch 2	2
Branch 3	3
Branch 4	4
Branch 5	5
Branch 6	6
Remote Access	7

Table: 1

2. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment – Main Office	Software
Avaya S8710 Media Server	R3.1 (R013x.01.0.628.3)
Avaya G650 Media Gateway (2) <ul style="list-style-type: none"> • Avaya TN2312BP IPSI Circuit Packs (2) • Avaya TN779DP C-LAN Circuit Packs (2) • Avaya TN2602AP Crossfire Circuit Packs (2) • Avaya TN2501AP VAL Circuit Pack 	FW 030 FW 017 FW 030 FW 009
Avaya Converged Stackable Switch C363T-PWR (2)	4.5.14
Avaya Call Management System Supervisor (CMS)	R13.1AUX
Avaya Interactive Response (IR)	R2.0
Avaya Application Enablement Service (AES)	R3.0
Avaya Interaction Center (IC)	7.0
Cisco 6506 Switch Router	12.4(5)
Cisco 2950 Switch (2)	12.4(5)
Cisco 3725 Router	12.4(5)
Cisco VPN 3000 Concentrator	V4.7
Cisco PIX Firewall	V7.0(4)

Table 2: Main Office (Location 1)

Equipment	Software
Avaya G650 Media Gateway <ul style="list-style-type: none"> • Avaya TN2312BP IPSI Circuit Pack • Avaya TN779DP C-LAN Circuit Pack • Avaya TN2602AP Crossfire Circuit Pack • Avaya TN2501AP VAL Circuit Pack 	FW 030 FW 017 FW 030 FW 009
Avaya S8710 Media Server <ul style="list-style-type: none"> • Enterprise Survivable Server (ESS) 	R3.1 (R013x.01.0.628.3)
Avaya Converged Stackable Switch C363T-PWR	4.5.14
Cisco 1841 Router	12.4(5)

Table 3: Branch Office 2 (Location 2)

Equipment	Software
Avaya G700 Media Gateway <ul style="list-style-type: none"> • MM760 • MM712 • MM711 • MM710 	25.22.0 Version 60 Vintage 3 Version 7 Vintage 27 Version 68 Vintage 5 Version 14
Avaya S8300 Media Server (LSP)	R3.1 (R013x.01.0.628.3)
Avaya Converged Stackable Switch C363T-PWR	4.5.14

Table 4: Branch Office 3 (Location 3)

Equipment	Software
Avaya G350 Media Gateway <ul style="list-style-type: none"> • MM712 • MM710 (2) • MM720 • MMANALOG 	25.22.0 Vintage 5 Version 7 Vintage 5 Version 14 Vintage 5 Version 6 Version 68
Avaya S8500 Media Server (LSP)	R3.1 (R013x.01.0.628.3)
Cisco 2821 Router	12.4(5)

Table 5: Branch Office 4 (Location 4)

Equipment	Software
Avaya G250 Media Gateway	25.22.0

Table 6: Branch Office 5 (Location 5)

Equipment	Software
Avaya G150 Media Gateway	R3.1
Avaya Converged Stackable Switch C363T-PWR	4.5.14

Table 7: Branch Office 6 (Location 6)

Equipment	Software
Avaya Call Center	R3.0
Avaya Site Administration (ASA)	3.0.8
Avaya Voice Announcement LAN (VAL) Manager	3.0
Avaya Terminals <ul style="list-style-type: none"> • Avaya 4600 Series IP Telephones • Avaya DCP 2420 Telephones • Avaya 6211 Analog Telephones • Avaya IP Agent Client • Avaya IP Softphone Client 	2.3 (2.5 for 4625) R6.0 R5.2
Cisco VPN Client	R4.7
Cisco 3845 WAN Router (2)	12.4(5)
Servers: Microsoft Windows Server 2003	Enterprise Edition
PC Workstations: Microsoft Windows XP Professional	Version 2002

Table 8: Common Use Equipment and Software

3. Configure Avaya Communication Manager

These Application Notes assume all equipment in **Table 2** through **Table 9** has been previously administered with the exception of the Location Preference Distribution, and Port Network, Media Gateway, and Media Server Vector Conditionals feature. The following pages detail step-by-step instructions on how to administer these features. Please refer to the appropriate User Guides for more information on how to setup the equipment of the sample configuration depicted in **Figure 1**.

3.1. Verify Avaya Communication Manager Licenses

To set the Location Preference Distribution and Port Network, Media Gateway, and Media Server Vector Conditionals features, certain Avaya Communication Manger licenses must be active. The next steps verify these required licenses. If any licenses are missing, contact your Avaya Authorized Sales representative.

The following commands were entered on an Avaya Communication Manager System Access Terminal (SAT):

Step	Description
1.	<p>Issue the command “display system-parameters customer options” to display the active licensed features. Go to page 5 and verify that the “Multiple Locations” feature is set to “y”.</p> <p>Figure 2 shows the administration screen for page 5 of this command.</p> <div data-bbox="240 1083 1421 1705" style="border: 1px solid black; padding: 10px;"> <pre> display system-parameters customer-options Page 5 of 11 OPTIONAL FEATURES Multinational Locations? n Station and Trunk MSP? n Multiple Level Precedence & Preemption? n Station as Virtual Extension? n Multiple Locations? y Personal Station Access (PSA)? y System Management Data Transfer? n Posted Messages? n Tenant Partitioning? n PNC Duplication? n Terminal Trans. Init. (TTI)? y Port Network Support? y Time of Day Routing? y Processor and System MSP? n Usage Allocation Enhancements? y Private Networking? n TN2501 VAL Maximum Capacity? y Processor Ethernet? y Wideband Switching? y Remote Office? y Wireless? n Restrict Call Forward Off Net? y Secondary Data Module? y (NOTE: You must logoff & login to effect the permission changes.) </pre> </div> <p style="text-align: center;">Figure 2: Multiple Locations Feature</p>

Step	Description
2.	<p data-bbox="240 268 1429 336">Go to page 6 and verify that the “Call Center Release:” is set to “3.0”, and optional features “Expert Agent Selection (EAS)” and “Vectoring (3.0 Enhanced)” are set to “y”.</p> <p data-bbox="240 378 1136 409">Figure 3 shows the administration screen for page 6 of this command.</p> <div data-bbox="240 462 1421 1081" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="256 472 1404 1071"> display system-parameters customer-options Page 6 of 11 CALL CENTER OPTIONAL FEATURES Call Center Release: 3.0 ACD? y BCMS (Basic)? y BCMS/VuStats Service Level? y BSR Local Treatment for IP & ISDN? y Business Advocate? y Call Work Codes? y DTMF Feedback Signals For VRU? y Dynamic Advocate? y Expert Agent Selection (EAS)? y EAS-PHD? y Forced ACD Calls? n Lookahead Interflow (LAI)? y Multiple Call Handling (On Request)? y Multiple Call Handling (Forced)? y PASTE (Display PBX Data on Phone)? y (NOTE: You must logoff & login to effect the permission changes.) Reason Codes? y Service Level Maximizer? n Service Observing (Basic)? y Service Observing (Remote/By FAC)? y Service Observing (VDNs)? y Timed ACW? y Vectoring (Basic)? y Vectoring (Prompting)? y Vectoring (G3V4 Enhanced)? y Vectoring (3.0 Enhanced)? y Vectoring (ANI/II-Digits Routing)? y Vectoring (G3V4 Advanced Routing)? y Vectoring (CINFO)? y Vectoring (Best Service Routing)? y Vectoring (Holidays)? y Vectoring (Variables)? y </pre> </div> <p data-bbox="633 1144 1055 1176" style="text-align: center;">Figure 3: Call Center Features</p>

3.2. Administer the Location Preference Distribution Feature

The following steps display how to configure the Location Preference Distribution feature.

Step	Description
3.	<p>Issue the command “change locations” to establish the Location Numbers for each location as per Table 1 and the sample configuration.</p> <p>Figure 4 shows the administration screen for page 1 of this command.</p> <div data-bbox="240 621 1422 1241" data-label="Code-Block"> <pre> change locations Page 1 of 16 LOCATIONS ARS Prefix 1 Required For 10-Digit NANP Calls? y Loc. Name Timezone Rule NPA ARS Attd Pre- Proxy Sel. No. Offset 1: Main + 00:00 0 732 2: Branch-2 + 00:00 0 908 3: Branch-3 + 00:00 0 201 4: Branch-4 + 00:00 0 215 5: Branch-5 + 00:00 0 703 6: Branch-6 + 00:00 0 310 7: Remote Access + 00:00 0 732 8: : 9: : 10: : 11: : 12: : 13: : 14: : </pre> </div> <p>Figure 4: Location Number Assignments Form</p> <p>NOTE: In this form, the following location characteristics can also be established:</p> <ul style="list-style-type: none"> • Time zone offset – between local standard time and the remote location. • Daylight Savings Rule Number – based on the administered rules defined in Avaya Communication Manager • Numbering Plan area codes • ARS prefix – Allows different locations to use different access codes

Step	Description
4.	<p data-bbox="240 268 1404 336">Issue the command “change cabinet xx”, where xx = is the cabinet number of the relevant Port Network. Assign the respective “Location” number for this Port Network.</p> <p data-bbox="240 378 1437 445">Figure 5 shows the administration screen for Cabinet 1 (Main Office Location) of the sample configuration.</p> <div data-bbox="240 489 1421 1087" style="border: 1px solid black; padding: 10px;"> <pre data-bbox="256 499 1404 1077"> change cabinet 1 Page 1 of 1 CABINET CABINET DESCRIPTION Cabinet: 1 Cabinet Layout: G650-rack-mount-stack Cabinet Type: expansion-portnetwork Location: 1 IP Network Region: 1 Rack: 1 Room: 1B-337 Floor: Building: CARRIER DESCRIPTION Carrier Carrier Type Number E not-used PN 01 D not-used PN 01 C not-used PN 01 B G650-port PN 01 A G650-port PN 01 </pre> </div> <p data-bbox="625 1144 1063 1180" style="text-align: center;">Figure 5: Change Cabinet Form</p> <p data-bbox="240 1218 1209 1253">Repeat the step above and change cabinet 2 for the Branch 2 Port Network.</p> <p data-bbox="240 1291 1380 1358">NOTE: The following explains how trunks, stations, and agent endpoints obtain location numbers:</p> <ul data-bbox="289 1402 1396 1696" style="list-style-type: none"> • Non-IP station endpoints, Non-IP agent endpoints, and trunks obtain the location numbers from the connected hardware (cabinet, remote office, or media gateway) • IP phones obtain a location number based on the Network Region form (<i>Shown in subsequent steps</i>). • IP and SIP trunks (near-end) obtain a location number depending on which cabinet contains the CLAN used for signaling. <p data-bbox="289 1738 1161 1774">If none of the above applies, the default Location number is set to 1.</p>

Step	Description
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5. For the H.248 Media Gateways (G250, G350, and G700) issue the command “**change media-gateway xx**”, where xx = is the number of the relevant Media Gateway. Assign the respective “**Location**” number for this Media Gateway.

Figure 6 shows the administration screen for G700 Media Gateway 3 (Branch 3 Location) of the sample configuration.

```

change media-gateway 3                                     Page 1 of 1
                                     MEDIA GATEWAY
      Number: 3                                           IP Address: 10 .13 .2 .12
      Type: g700                                         FW Version/HW Vintage: 25 .22 .0 /4
      Name: br3                                          MAC Address: 00:04:0d:8e:74:7d
      Serial No: 051629400577                            Encrypt Link? y
      Network Region: 3                                  Location: 3
      Registered? y                                       Controller IP Address: 10 .1 .2 .21
      Recovery Rule: 2                                    Site Data:
      Slot  Module Type                                Name
      V1:   S8300                                       ICC MM
      V2:   MM712                                       DCP MM
      V3:   MM711                                       ANA MM
      V4:   MM710                                       DS1 MM

      V8:
      V9:   gateway-announcements                       ANN VMM
  
```

Figure 6: Change Media Gateway Form

Repeat the step above to **change media-gateway 4** for the Branch 4 G350 Media Gateway and **change media-gateway 5** for the Branch 5 G250 Media Gateway.

6. For the G150 Media Gateway, issue the command “**change remote-office xx**”, where xx = is the number of the relevant G150 Media Gateway. Assign the “**Location**” number for this Media Gateway.

Figure 7 shows the administration screen for G150 Media Gateway 6 (Branch 6 Location) of the sample configuration.

```

change remote-office 6                                     Page 1 of 1
                                     REMOTE OFFICE 6

      Node Name: B06
      Network Region: 6
      Location: 6
      Site Data:
  
```

Figure 7: Change Remote Office Form

Step	Description
7.	<p>Issue the command “change ip-network-region xx”, where xx = is the number of the relevant network region. Assign the “Location” number for this IP Network Region.</p> <p>Figure 8 shows the administration screen for IP Network Region 1 (Main Office Location) of the sample configuration.</p> <div data-bbox="240 453 1421 1073" style="border: 1px solid black; padding: 10px;"> <pre> change ip-network-region 1 Page 1 of 19 IP NETWORK REGION Region: 1 Location: 1 Authoritative Domain: Name: CC Main Office MEDIA PARAMETERS Intra-region IP-IP Direct Audio: yes Codec Set: 1 Inter-region IP-IP Direct Audio: yes UDP Port Min: 2048 IP Audio Hairpinning? n UDP Port Max: 4029 DIFFSERV/TOS PARAMETERS RTCP Reporting Enabled? y Call Control PHB Value: 46 RTCP MONITOR SERVER PARAMETERS Audio PHB Value: 46 Use Default Server Parameters? y Video PHB Value: 26 802.1P/Q PARAMETERS Call Control 802.1p Priority: 6 Audio 802.1p Priority: 6 Video 802.1p Priority: 5 AUDIO RESOURCE RESERVATION PARAMETERS H.323 IP ENDPOINTS RSVP Enabled? n H.323 Link Bounce Recovery? y Idle Traffic Interval (sec): 20 Keep-Alive Interval (sec): 5 Keep-Alive Count: 5 </pre> </div> <p style="text-align: center;">Figure 8: Change IP Network Region Form</p> <p>Repeat the step above to change ip-network-region 2 through 7 for each region used in the sample configuration.</p> <p>NOTE:</p> <ol style="list-style-type: none"> 1. If the location field is left blank, the IP endpoint derives its location number from the CLAN board located on the cabinet or media gateway where the phone is registered. 2. Setting the Location Number on the IP Network Region form also sets the correct date, time, and trunk routing.

3.2.1. Administer Call-handling Conditions

The Location Preference Distribution feature is also designed to control how the system handles either an agent-surplus or a call-surplus condition in a call center. Each condition is administered separately and combined to handle either call-handling condition when it occurs.

3.2.1.1 Agent-surplus Condition

An agent surplus condition occurs when agents are in the available state waiting for incoming ACD calls. When an incoming ACD call is utilizing a trunk in a particular location, the Location Preference Distribution algorithm routes the call to an idle agent in that same location. If there are no available agents in the trunk's location, the incoming ACD call is routed based on the administered selection criteria to the agent at the top of the skill's free-agent list. The skilled agent selected to receive the call may exist anywhere within the sample configuration. Since a local agent was not available, the administered ACD routing superseded the Location Preference Distribution feature. The following step illustrates how to administer Location Preference Distribution to handle an agent-surplus condition.

Step	Description
1.	<p>Issue the command “change hunt-group XX”, where XX = is the ACD skill set with an agent-surplus condition. Set the “Local Agent Preference” field to “y”.</p> <p>Figure 11 shows the administration screen for Hunt Group 1 (Skill A) for the sample configuration.</p> <div data-bbox="240 1066 1421 1507" style="border: 1px solid black; padding: 10px;"> <pre> change hunt-group 1 Page 1 of 3 HUNT GROUP Group Number: 1 ACD? y Group Name: Skill A Queue? y Group Extension: 20501 Vector? y Group Type: ead-mia TN: 1 COR: 1 MM Early Answer? n Security Code: Local Agent Preference? y ISDN/SIP Caller Display: Queue Limit: unlimited Calls Warning Threshold: Port: Time Warning Threshold: Port: </pre> </div> <p style="text-align: center;">Figure 11: Change Hunt Group Form</p> <p>Repeat the step above and change hunt-group XX for each skill set with Agent-surplus conditions.</p>

3.2.1.2 Call-surplus Condition

The call-surplus condition occurs when there are ACD calls in queue waiting for an available agent. A call center may have multiple skill queues with multi-skilled EAS agents in multiple locations. The Location Preference Distribution algorithm looks at the call at the top of each queue and uses the administered selection criteria to pick a call for the agent from the same location the call is queued. The Location Preference Distribution does not try to match the agent’s location from the skill queue. The following step illustrates how to administer Location Preference Distribution to handle a call-surplus condition.

Step	Description
1.	<p>Issue the command “change agent-login ID XXXXX”, where XXXXX = is the agent’s extension. Set the “Local Call Preference” field to “y”.</p> <p>Figure 12 shows the administration screen for Agent Login ID 20611.</p> <div data-bbox="256 760 1437 1264" data-label="Form"> <pre> change agent-loginID 20611 AGENT LOGINID Direct Agent Skill: Call Handling Preference: skill-level Service Objective? n Local Call Preference? y SN RL SL SN RL SL SN RL SL SN RL SL 1: 1 1 16: 31: 46: 2: 17: 32: 47: 3: 18: 33: 48: 4: 19: 34: 49: 5: 20: 35: 50: 6: 21: 36: 51: 7: 22: 37: 52: 8: 23: 38: 53: 9: 24: 39: 54: 10: 25: 40: 55: 11: 26: 41: 56: 12: 27: 42: 57: </pre> </div> <p>Figure 12: Change Agent Login ID Form</p> <p>Repeat the step above and change agent-login ID XXXXX for each agent.</p>

3.3. Configuration Examples for the Port Network, Media Gateway, and Media Server Vector Conditionals Feature

3.3.1. Example 1: Main Server or Media Gateway Failover Condition

The call flow example depicted in **Figure 13** allows for alternate call handling during a Main Server failover, loss of Media Gateway 4, or both. During a Main Server failover, the calling party receives an Alternate Greeting to notify the caller of possible higher queue times or technical difficulty. When Media Gateway in Branch 4 is not registered, the queue-to skill changes from Skill 1 to Skill 2, which may be a part of every agent’s skill profile that engages all agent resources.

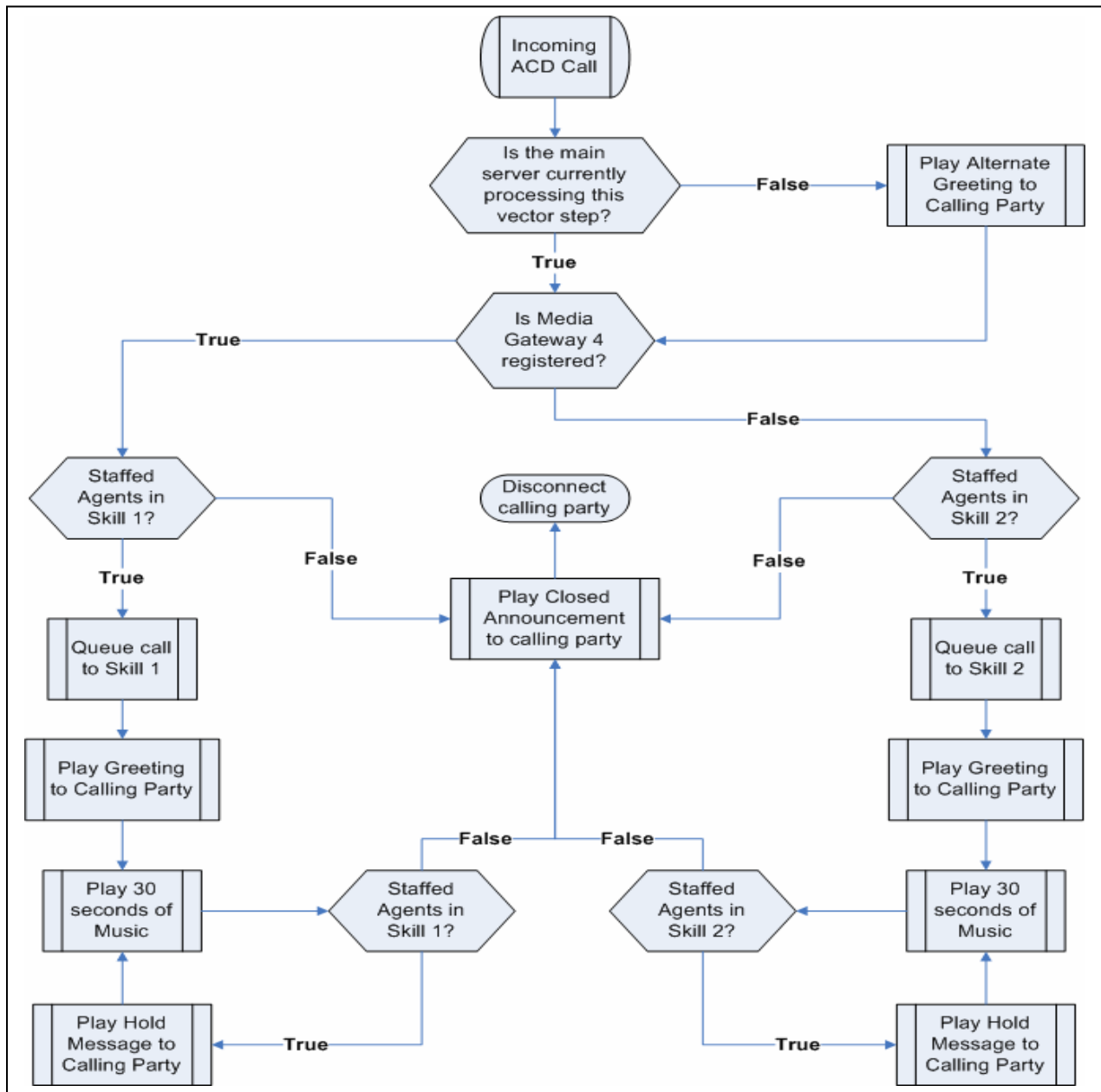


Figure 13: Example 1

The following commands were entered on an Avaya Communication Manager SAT:

Step	Description
1.	<p>Issue the command “change vector xxx”, where xxx = the call vector number.</p> <p>Figure 14 shows the vector steps for the call flow depicted in Figure 13. The Media Server and Media Gateway Vector conditional steps are shown in bold.</p> <div data-bbox="240 499 1421 1333" style="border: 1px solid black; padding: 5px;"> <pre> change vector 1 Page 1 of 3 CALL VECTOR Number: 1 Name: Main w/ ALT Multimedia? n Attendant Vectoring? n Meet-me Conf? n Lock? n Basic? y EAS? y G3V4 Enhanced? y ANI/II-Digits? y ASAI Routing? y Prompting? y LAI? y G3V4 Adv Route? y CINFO? y BSR? y Holidays? y Variables? y 3.0 Enhanced? y 01 wait-time 0 secs hearing ringback 02 goto vector 98 @step 1 if server <> main 03 goto step 12 if media-gateway 4 <> registered 04 goto step 20 if staffed-agents in skill 1 < 1 05 queue-to skill 1 pri m 06 announcement 20703 07 wait-time 30 secs hearing music 08 goto step 20 if staffed-agents in skill 1 < 1 09 announcement 20704 10 goto step 7 if unconditionally 11 stop Page 2 of 3 12 goto step 20 if staffed-agents in skill 2 < 1 13 queue-to skill 2 pri h 14 announcement 20703 15 wait-time 30 secs hearing music 16 goto step 20 if staffed-agents in skill 2 < 1 17 announcement 20704 18 goto step 12 if unconditionally 19 stop 20 disconnect after announcement 20705 21 stop </pre> </div> <p style="text-align: center;">Figure 14: Main Vector with Alternate Call Routing</p> <div data-bbox="240 1417 1421 1732" style="border: 1px solid black; padding: 5px;"> <pre> change vector 98 Page 1 of 3 CALL VECTOR Number: 98 Name: ESS Special Msg Multimedia? n Attendant Vectoring? n Meet-me Conf? n Lock? n Basic? y EAS? y G3V4 Enhanced? y ANI/II-Digits? y ASAI Routing? y Prompting? y LAI? y G3V4 Adv Route? y CINFO? y BSR? y Holidays? y Variables? y 3.0 Enhanced? y 01 announcement 20705 02 return </pre> </div> <p style="text-align: center;">Figure 15: ESS Special Message Vector</p>

3.3.2. Example 2: Branch Office Isolation

The call flow depicted in **Figure 16** utilizes alternate Multi-site BSR routing when the Media Server that is processing the call is the ESS in Branch Office 2. The consider location step is bypassed if the Port Network or Media Gateway is registered to the ESS Server.

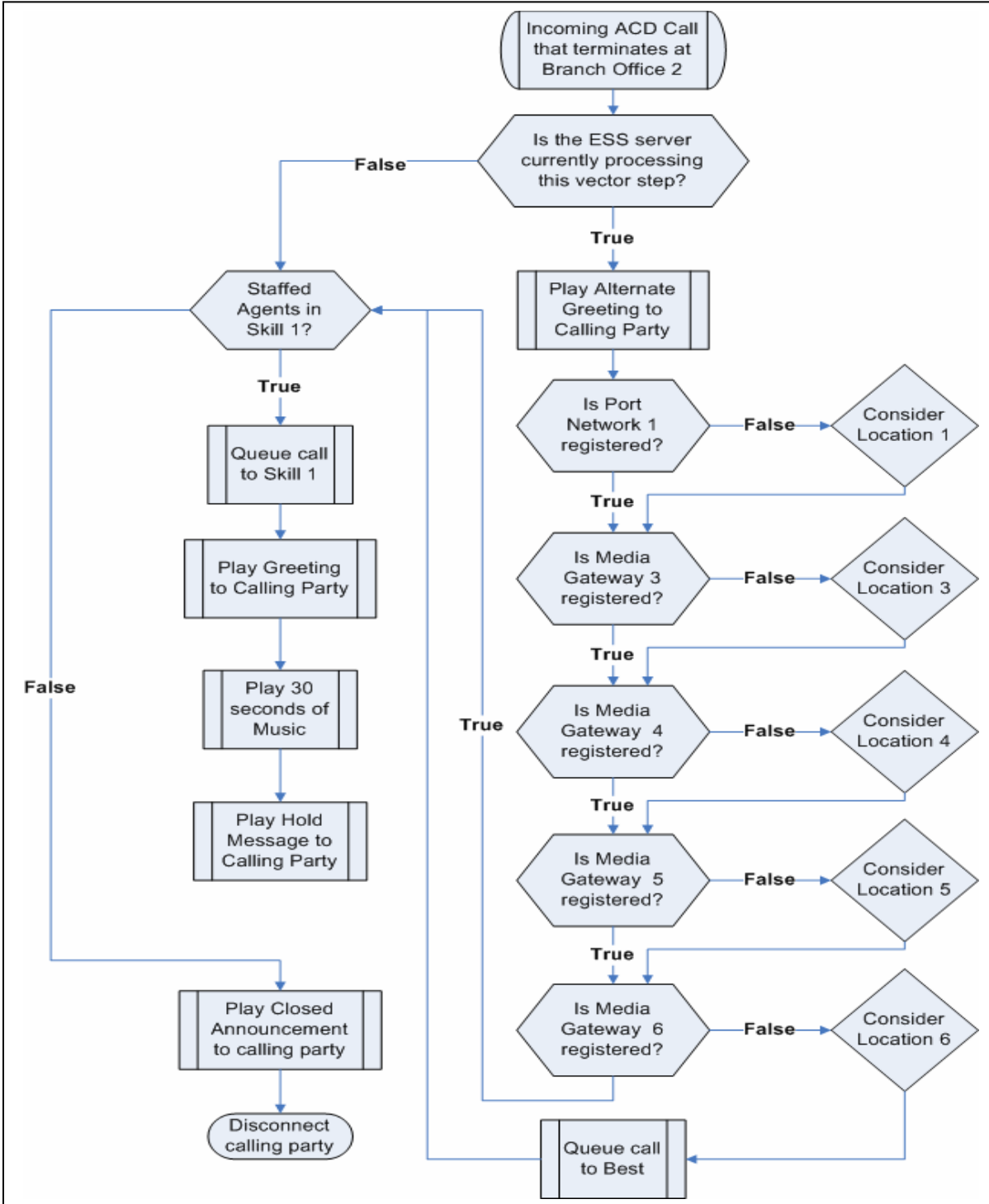


Figure 16: Example 2

The following commands were entered on an Avaya Communication Manager SAT:

Step	Description
1.	<p data-bbox="237 306 1247 338">Issue the command “change vector xxx”, where xxx = the call vector number.</p> <p data-bbox="237 380 1354 447">Figure 17 shows the vector steps for the call flow depicted in Figure 16. The alternate routing, that includes the vector conditional steps, is shown in bold.</p> <div data-bbox="237 464 1421 1402" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="256 478 1401 1392"> change vector 3 Page 1 of 3 CALL VECTOR Number: 3 Name: B02 w/BSR Multimedia? n Attendant Vectoring? n Meet-me Conf? n Lock? n Basic? y EAS? y G3V4 Enhanced? y ANI/II-Digits? y ASAI Routing? y Prompting? y LAI? y G3V4 Adv Route? y CINFO? y BSR? y Holidays? y Variables? y 3.0 Enhanced? y 01 wait-time 0 secs hearing ringback 02 goto step 15 if server <> ess 03 announcement 20705 04 goto step 6 if port-network 1 = registered 05 consider location 1 06 goto step 8 if media-gateway 3 = registered 07 consider location 3 08 goto step 10 if media-gateway 4 = registered 09 consider location 4 10 goto step 12 if media-gateway 5 = registered 11 consider location 5 Page 2 of 3 12 goto step 15 if media-gateway 6 = registered 13 consider location 6 14 queue-to best 15 goto step 23 if staffed-agents in skill 1 < 1 16 queue-to skill 1 pri m 17 announcement 20703 18 wait-time 30 secs hearing music 19 goto step 23 if staffed-agents in skill 1 < 1 20 announcement 20704 21 goto step 18 if unconditionally 22 stop Page 3 of 3 23 disconnect after announcement 20705 24 stop </pre> </div> <p data-bbox="394 1436 1297 1467" style="text-align: center;">Figure 17: Branch Office Vector with Alternate BSR Call Routing</p> <p data-bbox="237 1512 342 1543">NOTE:</p> <ol data-bbox="289 1549 1414 1833" style="list-style-type: none"> These Application Notes assume that the required Avaya Communication Manager licenses for Multi-site BSR routing are already active. It is also assumed that the administration for BSR routing is already in place that includes Status Poll and Interflow Vector and VDNs. These VDNs utilize the PSTN for routing traffic to the remote destination. Examples do not include Time-of-Day, Holiday, or other possible check steps generally part of vector call flow design.

4. Verification Steps

4.1. Location Preference Distribution

Use the following steps to verify proper configuration of the Location Preference Distribution feature with agent-surplus conditions.

1. Log in an agent at the Main Office and several agents at other Branch Offices.
2. Move all agents to the “**Auto-In**” state.
3. Place a call using the Incoming VDN that terminates at the Main Office.
4. Verify the call terminates with an agent on the Main Office.
5. Repeat the steps above utilizing a different Incoming VDN that terminates at one of the Branch Offices.
6. Verify the call terminates with an agent located in the same location as the Incoming VDN.

Use the following steps to verify proper configuration of the Location Preference Distribution feature with call-surplus conditions.

1. Log in an agent at the Main Office and several agents at other Branch Offices. Agent skill profiles should include two skill sets [A & B].
2. Move all agents to the “**Auto-In**” state.
3. Place several calls using the Incoming VDN for skill set [A] that terminates at the Main Office to occupy every agent available with an ACD call.
4. Now place a call in queue using the Incoming VDN for skill set [A] that terminates at the Main Office.
5. Place a call in queue using the Incoming VDN for skill set [B] that terminates at Branch Office 3.
6. An Agent at Branch 3 becomes available.
7. Verify that the Agent answers a skill set [B] call, even though calls for skill set [A] have been in queue longer.

4.2. Port Network, Media Gateway, and Media Server Vector Conditionals Feature

Use the following steps to verify proper configuration of the Media Server, Media Gateway, or Port Network vector conditional feature:

1. Use the call flow diagrams in **Figure 13** or **Figure 16** to determine normal and alternate call flows.
2. Use vectors shown in **Figure 14** or **Figure 17** with the respective Media Server, Media Gateway, or Port Network vector conditional steps.
3. Place an Incoming VDN call that points to this vector.
4. Verify that the normal routing specified is correct.
5. Cause the respective failover for the Media Server, Media Gateway, or Port Network that matches the conditional step in the vector.
6. Place another Incoming VDN call.
7. Verify that the alternate routing specified becomes active.

5. Conclusion

These Application Notes illustrate the configuration steps of the Location Preference Distribution feature and of Vector Conditionals for Media Gateway, Port Network, and Server Status. These features are ACD Contact Center features of Avaya Communication Manager.

6. References

For more information on the use and proper syntax for the Location Preference Distribution feature, and the Port Network, Media Gateway, and Media Server Vector Conditionals feature, please refer to the Avaya Communication Manager Call Vectoring and EAS Guide, June 2005 Guide, Issue 1.0.

Product documentation for Avaya products may be found at <http://support.avaya.com>.

1. “*Avaya Communications Manager- Automatic Call Distribution (ACD) Guide, Issue 1.0, June 2005*”, Document ID: 07-300301.
2. “*Avaya Communications Manager Network Region Configuration Guide*”, COMPAS ID: 103244
3. “*Avaya Communications Manager Release 3.0, Call Center Software, Call Vectoring and Expert Agent Selection (EAS) Guide, Issue 1.0, June 2005*”, Document ID: 07-300303

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