



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring NovaLink NovaMail with Avaya Communication Manager and Avaya SIP Enablement Services – Issue 1.0

Abstract

These Application Notes describe the configuration of the NovaLink NovaMail voicemail system utilizing Avaya SIP Enablement Services and SIP trunking to Avaya Communication Manager.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab:

1. Introduction

The purpose of this document is to describe the configuration of the NovaLink NovaMail voicemail (NovaMail) server, Avaya SIP Enablement Services (Avaya SES), and Avaya Communication Manager, including a description of the tests that were performed, and a summary of the results of those tests.

The NovaMail server handles calls for NovaMail clients who are unable to answer the telephone. The NovaMail server greets callers with a message which indicates whether the called party is

- busy with another call
- away from the desk or unable to answer the phone
- out of the office

NovaMail takes voice messages from callers and turns on the message waiting lamp on the client's telephone when new messages are received. NovaMail clients can call the NovaMail server, which executes commands corresponding to telephone key input and responds with audio messages, providing clients with a means of retrieving messages and administering their mailbox from their local telephone or remotely. The NovaMail server turns off the client's telephone message waiting lamp after messages have been retrieved by the client.

The NovaMail server includes a web-based administration facility that allows remote administration from a web browser.

NovaMail clients can optionally be assigned a PIN code with which they are required to authenticate themselves.

NovaMail supports multiple interfaces, including the SIP trunk described in these Application Notes.

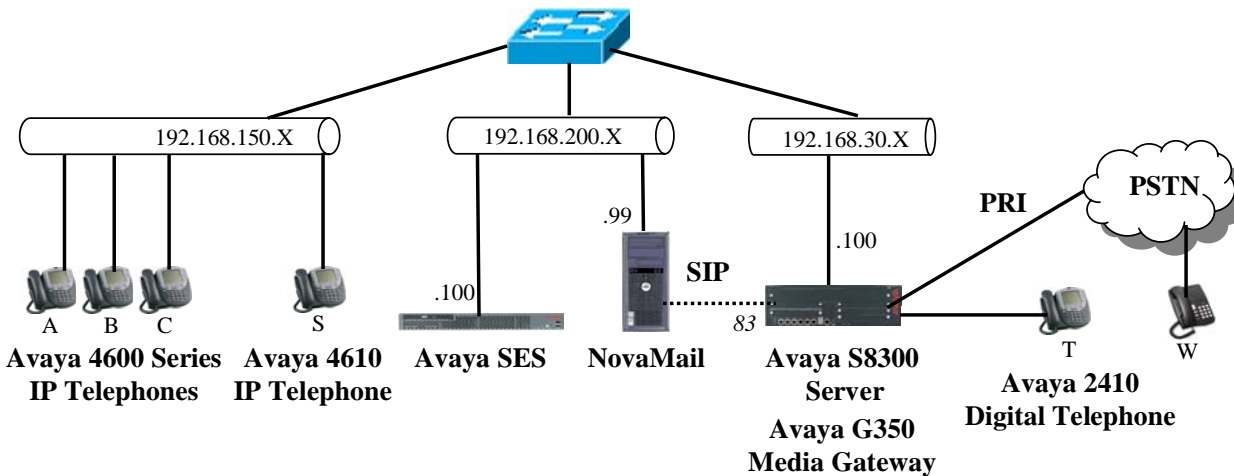


Figure 1: NovaMail Test Configuration

The SIP trunk connecting Avaya Communication Manager to the NovaMail server was configured as Trunk Group 83, as shown in the diagram. The function of each of the components in **Figure 1** is as follows:

- The NovaMail server provides voice mail coverage for calls from telephones connected to Avaya Communication Manager as well as those connected remotely via the PSTN.
- Avaya Communication Manager runs on the Avaya S8300 Server and communicates with the NovaMail server and Avaya Telephones via the Avaya G350 Media Gateway.
- The Avaya SIP Enablement Services (SES) server is the interface between Avaya Communication Manager, the NovaMail server, and Avaya SIP Telephones.

The following table contains the extensions that are used for testing. The capital letter designations correspond to the telephones shown in **Figure 1**.

Extension	Designation
3000136	A
3000134	B
3000133	C
3000115	S
3000001	T
01000113	W
6000000	NovaMail via SIP

Table 1: Extensions Used for Testing

2. Equipment and Software Validated

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

Equipment	Software Version
Avaya S8300 Server	Avaya Communications Manager 4.0 (R014x.00.0.730.5) Service Pack 00.0.730.5-13566
Avaya SIP Enablement Services Server	SES-3.1.2.0-309.0
Avaya G350 Media Gateway	26.31.0
MM712AP DCP	HW05 FW008
Avaya 4600 series IP Telephones	2.8
Avaya 4600 series SIP Telephone	2.2.2
Avaya 2410 Digital Telephone	5.0
NovaLink NovaMail	7.5
Microsoft Windows Server 2003 SE	SP2

Table 2: Version Numbers of Equipment and Software

3. Configuration

3.1. Configure Avaya Communication Manager

The configuration and verification operations illustrated in this section were all performed using the Avaya Communication Manager SAT terminal via SSH port 5022.

The information provided in this section describes the configuration of Avaya Communication Manager for this solution. For all other provisioning information such as installation and configuration, please refer to the product documentation in reference [1].

The configuration operations described in this section can be summarized as follows:

- Verify that the licenses allocated to the system are sufficient to support the required configuration.
- Configure the dial plan and call routing required for the NovaMail configuration.
- Configure the SIP interface that is used to connect to the NovaMail server.
- Configure Avaya Communication Manager as required to interface to the Avaya SIP Enablement Services server.

3.1.1. Verify system-parameters customer-options

Use the **display system-parameters customer-options** command to verify that Avaya Communication Manager is licensed to meet the minimum requirements to interoperate with the NovaMail server. Those items shown in bold indicate required values or minimum capacity requirements. If these are not met in the configuration, please contact an Avaya representative for further assistance.

The number “Maximum Administered SIP Trunks” must be sufficient to support the maximum number of members assigned to all SIP trunks. This is the sum of the number of SIP telephones plus the SIP trunk to the NovaMail Server.

display system-parameters customer-options		Page 2 of 10
OPTIONAL FEATURES		
IP PORT CAPACITIES		USED
Maximum Administered H.323 Trunks:	30	5
Maximum Concurrently Registered IP Stations:	10	3
Maximum Administered Remote Office Trunks:	0	0
Maximum Concurrently Registered Remote Office Stations:	0	0
Maximum Concurrently Registered IP eCons:	0	0
Max Concur Registered Unauthenticated H.323 Stations:	0	0
Maximum Video Capable H.323 Stations:	0	0
Maximum Video Capable IP Softphones:	0	0
Maximum Administered SIP Trunks:	10	3
Maximum Number of DS1 Boards with Echo Cancellation:	0	0
Maximum TN2501 VAL Boards:	0	0
Maximum Media Gateway VAL Sources:	0	0
Maximum TN2602 Boards with 80 VoIP Channels:	0	0
Maximum TN2602 Boards with 320 VoIP Channels:	0	0
Maximum Number of Expanded Meet-me Conference Ports:	0	0

Figure 2: System-Parameters Customers-Options Form, Page 2

On page 3 of this form, the “Cvg Of Calls Redirected Off-net” parameter must be set to “y” to allow redirection of calls to NovaMail.

display system-parameters customer-options		Page 3 of 10	
OPTIONAL FEATURES			
Abbreviated Dialing Enhanced List?	n	Audible Message Waiting?	n
Access Security Gateway (ASG)?	n	Authorization Codes?	n
Analog Trunk Incoming Call ID?	n	CAS Branch?	n
A/D Grp/Sys List Dialing Start at 01?	n	CAS Main?	n
Answer Supervision by Call Classifier?	n	Change COR by FAC?	n
ARS?	y	Computer Telephony Adjunct Links?	n
ARS/AAR Partitioning?	y	Cvg Of Calls Redirected Off-net?	y
ARS/AAR Dialing without FAC?	y	DCS (Basic)?	n
ASAI Link Core Capabilities?	n	DCS Call Coverage?	n
ASAI Link Plus Capabilities?	n	DCS with Rerouting?	n
Async. Transfer Mode (ATM) PNC?	n		
Async. Transfer Mode (ATM) Trunking?	n	Digital Loss Plan Modification?	n
ATM WAN Spare Processor?	n	DS1 MSP?	n
ATMS?	n	DS1 Echo Cancellation?	n
Attendant Vectoring?	n		

Figure 3: System-Parameters Customers-Options Form, Page 3

On page 4 and 5, the parameters must be set as shown in **Table 3**.

Parameter	Required Setting	Comment
Enhanced EC500 (Page 4)	y	This is required to enable the allocation of off-PBX SIP telephones
IP Trunks (Page 4)	y	This is required to allow the allocation of the H.323 trunks to be attached to NovaMail.
Uniform Dialing Plan (Page 5)	y	This is required to support the call routing scheme chosen for testing.

Table 3: System-Parameters Customers-Options Form, Page 4

display system-parameters customer-options		Page 4 of 10
OPTIONAL FEATURES		
Emergency Access to Attendant? y	IP Stations? y	
Enable 'dadmin' Login? y		
Enhanced Conferencing? n	ISDN Feature Plus? n	
Enhanced EC500? y	ISDN Network Call Redirection? n	
Enterprise Survivable Server? n	ISDN-BRI Trunks? y	
Enterprise Wide Licensing? n	ISDN-PRI? y	
ESS Administration? n	Local Survivable Processor? n	
Extended Cvg/Fwd Admin? n	Malicious Call Trace? n	
External Device Alarm Admin? n	Media Encryption Over IP? n	
Five Port Networks Max Per MCC? n	Mode Code for Centralized Voice Mail? n	
Flexible Billing? n		
Forced Entry of Account Codes? n	Multifrequency Signaling? y	
Global Call Classification? n	Multimedia Call Handling (Basic)? n	
Hospitality (Basic)? y	Multimedia Call Handling (Enhanced)? n	
Hospitality (G3V3 Enhancements)? n		
IP Trunks? y		
IP Attendant Consoles? n		

Figure 4: System-Parameters Customers-Options Form, Page 4

On page 5, the “Uniform Dialing Plan” parameter must be set to “y”.

```
display system-parameters customer-options                                Page 5 of 10
                                OPTIONAL FEATURES

    Multinational Locations? n          Station and Trunk MSP? n
Multiple Level Precedence & Preemption? n    Station as Virtual Extension? n
    Multiple Locations? n

    Personal Station Access (PSA)? n      System Management Data Transfer? n
    Posted Messages? n                    Tenant Partitioning? n
    PNC Duplication? n                    Terminal Trans. Init. (TTI)? n
    Port Network Support? n                Time of Day Routing? n
                                           Uniform Dialing Plan? y
    Processor and System MSP? n            Usage Allocation Enhancements? y
    Private Networking? n                  TN2501 VAL Maximum Capacity? y
    Processor Ethernet? y                  Wideband Switching? n
                                           Wireless? n

    Remote Office? n
Restrict Call Forward Off Net? y
    Secondary Data Module? y
```

Figure 5: System-Parameters Customers-Options Form, Page 5

3.1.2. Configure Node Names

Use the **change node-names ip** command to configure the IP addresses of the NovaMail and the Avaya SES servers. The value assigned to **ses** must be the same value that was assigned in **Figure 7, Figure 24, Figure 26, Figure 29, and Figure 41**

```
change node-names ip                                                    Page 1 of 2
                                IP NODE NAMES

    Name          IP Address
default          0.0.0.0
NovaMail        192.168.200.99
procr           192.168.30.100
ses             192.168.200.100
```

Figure 6: Node-Names IP Form

3.1.3. Configure SIP Interface to the NovaMail Server

Use the **add signaling-group** command to configure the Signaling Group parameters for the SIP trunk group. Assign values for this command as shown in the following table.

Parameter	Usage
Group Type	Enter the Group Type as “sip”.
Near-end Node Name	Enter “procr” to utilize the processor C-LAN interface of the Avaya S8300 Server.
Far-end Node Name	Enter node name assigned to the Avaya SES in Figure 6 .
Near-end Listen Port	Accept the default value of 5061. This must be the same value which is assigned to the SES contact shown in Figure 34 .
Far-end Listen Port	Accept the default value of 5061.
Far-end Domain	Specify “ffm.com” as the far end node name. This must be the same value that was assigned in Figure 7 , Figure 24 , Figure 26 , Figure 29 , and Figure 41 .

Table 4: Signaling-Group Parameters for SIP Interface

add signaling-group 83		Page 1 of 1
SIGNALING GROUP		
Group Number: 83	Group Type: sip	
	Transport Method: tls	
Near-end Node Name: procr	Far-end Node Name: ses	
Near-end Listen Port: 5061	Far-end Listen Port: 5061	
Far-end Domain: ffm.com	Far-end Network Region:	
	Bypass If IP Threshold Exceeded? n	
DTMF over IP: rtp-payload	Direct IP-IP Audio Connections? y	
	IP Audio Hairpinning? n	
Enable Layer 3 Test? n		
Session Establishment Timer(min): 3		

Figure 7: Avaya SES Signaling-Group Form

Use the **add trunk-group** command to configure the SIP interface to Avaya SES. Assign values for this command as shown in the following table.

Parameter	Usage
Group Type	Specify the Group Type as “sip”.
Group Name	Select an appropriate name to identify the device.
TAC	Specify a trunk access code consistent with the administered dial plan which can be used to provide dial access to the trunk group. The Trunk Access Code (TAC) code assignment is defined in Figure 9 .
Service Type	Designate the trunk as a “tie” line to a peer system.
Signaling Group	Enter the number assigned to the SIP signaling group shown in Figure 7 .
Number of Members	Specify sufficient number of members to support the maximum simultaneous connections required.

Table 5: Trunk-Group Parameters for the SIP Interface

```

add trunk-group 83                                     Page 1 of 21
                                     TRUNK GROUP

Group Number: 83          Group Type: sip          CDR Reports: y
  Group Name: SIP          COR: 1          TN: 1          TAC: *83
    Direction: two-way    Outgoing Display? n
    Dial Access? n
    Queue Length: 0
  Service Type: tie          Auth Code? n

                                     Signaling Group: 83
                                     Number of Members: 5

```

Figure 8: Trunk-Group Screen Form

3.1.4. Configure Dial Plan and Call Routing

Use the **change dialplan analysis** command to specify the dialed strings for the dial plan, as shown in **Table 6**.

Dialed String	Usage
"3"	The seven digit local extensions each begin with "3".
"6"	The extensions assigned to the NovaMail are all seven digit numbers which begin with "6".
"*7"	The three-digit Feature Access Codes described in Table 11 each begin with "*7".
"*83"	Access to the SIP trunk defined in Figure 8 is provided by the Trunk Access Code "*83".

Table 6: Parameters for dial plan analysis

change dialplan analysis						Page 1 of 12		
DIAL PLAN ANALYSIS TABLE								
						Percent Full: 3		
Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type
3	7	ext						
6	7	ext						
*7	3	fac						
*83	3	dac						

Figure 9: Dialplan Analysis Form

Use the **change uniform-dialplan** command to designate extensions which begin with "7" and are seven digits in length to use the Automatic Alternate Routing (AAR) table.

change uniform-dialplan 0						Page 1 of 2	
UNIFORM DIAL PLAN TABLE							
						Percent Full: 0	
Matching			Insert		Node		
Pattern	Len	Del	Digits	Net	Conv	Num	
6	7	0		aa	n		

Figure 10: Uniform-Dialplan Form

Use the **change aar analysis** command to select routing pattern "6" for numbers which have the leading dialed string "6", as specified in the uniform dial plan shown in **Figure 14**.

change aar analysis 0							Page 1 of 2	
AAR DIGIT ANALYSIS TABLE								
							Percent Full: 3	
	Dialed	Total		Route	Call	Node	ANI	
	String	Min	Max	Pattern	Type	Num	Reqd	
6		7	7	6	aar		n	

Figure 11: AAR Analysis Form

Use the **change route-pattern** command to route numbers using Routing Pattern 6 via Trunk Group 83.

change route-pattern 6															Page 1 of 3			
Pattern Number: 2 Pattern Name: NovaMail SIP																		
SCCAN? n Secure SIP? n																		
Grp	FRL	NPA	Pfx	Hop	Toll	No.	Inserted							DCS/	IXC			
No			Mrk	Lmt	List	Del	Digits							QSIG				
								Dgts							Intw			
1:	83	0								n							user	
2:										n							user	
3:										n							user	
4:										n							user	
5:										n							user	
6:										n							user	

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	PARM	No.	Numbering	LAR
0	1	2	M	4	W	Request		Dgts	Format	
							Subaddress			
1:	y	y	y	y	y	n	n		rest	none
2:	y	y	y	y	y	n	n		rest	none
3:	y	y	y	y	y	n	n		rest	none
4:	y	y	y	y	y	n	n		rest	none
5:	y	y	y	y	y	n	n		rest	none
6:	y	y	y	y	y	n	n		rest	none

Figure 12: Route-Pattern 6 Form

3.1.5. Configure Public-Unknown-Numbering Format

Use the **change public-unknown-numbering** command to designate how telephone numbers are to be displayed on stations that have displays. Specify that seven digit numbers starting with “6” from trunk group “6” and “3” from trunk group “83” should not be modified.

change public-unknown-numbering 7					Page 1 of 2	
NUMBERING - PUBLIC/UNKNOWN FORMAT						
Ext	Ext	Trk	CPN	Total		
Len	Code	Grp(s)	Prefix	CPN		
				Len		
7	6	6		7	Total Administered: 2	
7	3	83		7	Maximum Entries: 240	

Figure 13: Public-Unknown-Numbering Form

3.1.6. Configure Telephone Stations

Use the **add station** command to configure all of the telephones shown in **Table 1**.
Reference source not found.. The settings for Avaya 2400 Digital Telephones are the same as those required for the Avaya 4621 Telephone, except that the “Type” designation must be set to match the telephone type.

Parameter	Usage
Type	Enter the type of station that is to be configured.
Security Code	Enter a numeric security code.
Coverage Path 1	Enter “1” as the number of the coverage path which directs calls to NovaMail. The coverage path number must be the same as the number of the coverage path which is allocated in Figure 16 .
Name	Enter a descriptive name for the user of the station.
BUTTON ASSIGNMENTS (Page 4)	Assign “send-calls” and “call-fwd” buttons to the stations, as required to test call coverage and call forwarding with NovaMail. This not required for SIP telephones.

Table 7: Station Parameters

add station 3000136		Page 1 of 5
STATION		
Extension: 300-0136	Lock Messages? n	BCC: 0
Type: 4621	Security Code: 6310003	TN: 1
Port: S00006	Coverage Path 1: 1	COR: 1
Name: extn 3000136	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
Loss Group: 19	Time of Day Lock Table:	
	Personalized Ringing Pattern: 1	
Speakerphone: 2-way	Message Lamp Ext: 300-0136	
Display Language: english	Mute Button Enabled? y	
Survivable GK Node Name:	Expansion Module? n	
Survivable COR: internal	Media Complex Ext:	
Survivable Trunk Dest? y	IP SoftPhone? n	
	Customizable Labels? y	

Figure 14: Add Station Form, Page 1

add station 3000136		Page 4 of 5
STATION		
SITE DATA		
Room:		Headset? n
Jack:		Speaker? n
Cable:		Mounting: d
Floor:		Cord Length: 0
Building:		Set Color:
ABBREVIATED DIALING		
List1:	List2:	List3:
BUTTON ASSIGNMENTS		
1: call-appr	5: call-fwd	Ext:
2: call-appr	6:	
3: call-appr	7:	
4: send-calls Ext:	8:	

Figure 15: Add Station Form, Page 4

3.1.7. Configure Coverage Path to NovaMail

Use the **add coverage path** <x> command, where <x> is the number of an unused coverage point which is to be used to direct calls to NovaMail. Assign values for this command as shown in the following table. This coverage path can be assigned to stations to direct calls to NovaMail, as shown in **Figure 14**.

Parameter	Usage
Point1	Enter “r6” to assign coverage to a remote destination. This must be the same remote coverage point that is allocated for NovaLink in Figure 17 .

Table 8: Parameters for Coverage Path

add coverage path 1		Page 1 of 1	
COVERAGE PATH			
Coverage Path Number: 1		Hunt after Coverage? n	
Next Path Number:		Linkage	
COVERAGE CRITERIA			
Station/Group Status	Inside Call	Outside Call	
Active?	n	n	
Busy?	Y	Y	
Don't Answer?	Y	Y	Number of Rings: 2
All?	n	n	
DND/SAC/Goto Cover?	Y	Y	
Holiday Coverage?	n	n	
COVERAGE POINTS			
Terminate to Coverage Pts. with Bridged Appearances? n			
Point1: r6	Rng:	Point2:	
Point3:		Point4:	
Point5:		Point6:	

Figure 16: Coverage Path Form

Use the **change coverage remote** command to create a remote coverage path for NovaMail. This remote coverage path can assigned to the NovaMail coverage path, as shown in **Figure 16**. Assign values for this command as shown in the following table.

Parameter	Usage
06	Enter “6000000” to assign the NovaMail extension as the remote coverage point.

Table 9: Parameters for Coverage Path

change coverage remote 1 Page 1 of 23

REMOTE CALL COVERAGE TABLE

ENTRIES FROM 1 TO 1000

01:	16:	31:
02:	17:	32:
03:	18:	33:
04:	19:	34:
05:	20:	35:
06: 6000000	21:	36:
07:	22:	37:
08:	23:	38:
09:	24:	39:
10:	25:	40:
11:	26:	41:
12:	27:	42:
13:	28:	43:
14:	29:	44:
15:	30:	45:

Figure 17: Coverage Remote Form

3.1.8. Configure Interface to Avaya SES and Integration for SIP Telephones

Use the **change off-pbx-telephone station-mapping** command to configure SIP telephones. Assign values for this command as shown in the following table.

Parameter	Usage
Station Extension	Enter the extension of the SIP telephone.
Application	Enter “OPS”.
Phone Number	Enter the phone number assigned to the SIP telephone.
Trunk Selection	Enter the number assigned to the SIP trunk group in Figure 8 .
Call Limit (Page 2)	Enter “3” to allow the SIP telephone to do call transfers.

Table 10: Parameters for Off-PBX-Telephone Station-Mapping

change off-pbx-telephone station-mapping 3000115						Page 1 of 2
STATIONS WITH OFF-PBX TELEPHONE INTEGRATION						
Station Extension	Application	Dial Prefix	CC	Phone Number	Trunk Selection	Config Set
300-0115	OPS	-		3000115	83	1

Figure 18: Off-PBX-Telephone Form, Page 1

change off-pbx-telephone station-mapping 3000115					Page 2 of 2
STATIONS WITH OFF-PBX TELEPHONE INTEGRATION					
Station Extension	Call Limit	Mapping Mode	Calls Allowed	Bridged Calls	
300-0115	3	both	all	both	

Figure 19: Off-PBX-Telephone Form, Page 2

Use the **change feature-access-codes** command to assign feature codes required by SIP telephones, as shown in the following table:

Parameter	Usage
Call Forwarding Activation Busy/DA and Deactivation	Assign unused feature access codes that are within the local dial plan to activate/deactivate call forwarding.
Send All Calls Activation and Deactivation (Page 3)	Assign unused feature access codes that are within the local dial plan to activate/deactivate call sending all calls to coverage.

Table 11: Parameters for the Feature Access Codes

change feature-access-codes		Page 1 of 5
FEATURE ACCESS CODE (FAC)		
Abbreviated Dialing List1 Access Code:		
Abbreviated Dialing List2 Access Code:		
Abbreviated Dialing List3 Access Code:		
Abbreviated Dial - Prgm Group List Access Code:		
Announcement Access Code:		
Answer Back Access Code:		
Attendant Access Code:		
Auto Alternate Routing (AAR) Access Code:		
Auto Route Selection (ARS) - Access Code 1:		Access Code 2:
Automatic Callback Activation:		Deactivation:
Call Forwarding Activation Busy/DA: *75	All: *73	Deactivation: *74
Call Forwarding Enhanced Status:	Act:	Deactivation:
Call Park Access Code:		
Call Pickup Access Code:		
CAS Remote Hold/Answer Hold-Unhold Access Code:		
CDR Account Code Access Code:		
Change COR Access Code:		
Change Coverage Access Code:		
Contact Closure	Open Code:	Close Code:

Figure 20: Feature Access Codes Form, Page 1

change feature-access-codes		Page 3 of 5
FEATURE ACCESS CODE (FAC)		
Leave Word Calling Send A Message:		
Leave Word Calling Cancel A Message:		
Limit Number of Concurrent Calls Activation:		Deactivation:
Malicious Call Trace Activation:		Deactivation:
Meet-me Conference Access Code Change:		
PASTE (Display PBX data on Phone) Access Code:		
Personal Station Access (PSA) Associate Code:		Dissociate Code:
Per Call CPN Blocking Code Access Code:		
Per Call CPN Unblocking Code Access Code:		
Priority Calling Access Code:		
Program Access Code:		
Refresh Terminal Parameters Access Code:		
Remote Send All Calls Activation:		Deactivation:
Self Station Display Activation:		
Send All Calls Activation: *71		Deactivation: *72
Station Firmware Download Access Code:		

Figure 21: Feature Access Code Form, Page 3

Use the **change off-pbx-telephone feature-name-extension** command to assign extensions to features required by SIP telephones, as shown in the following table below. Note that the extensions used here are assigned to speed dial entries for SIP telephones, as shown in **Table 15**.

Parameter	Usage
Call Forward All	Assign an unused extension within the local dial plan to the “Call Forward All” feature.
Call Forward Cancel	Assign an unused extension within the local dial plan to the “Call Forward Cancel” feature.
Send All Calls	Assign an unused extension within the local dial plan to the “Send All Calls” feature.
Send All Calls Cancel (Page 2)	Assign an unused extension within the local dial plan to the “Send All Calls Cancel” feature.

Table 12: Parameters for Off-PBX-Telephone Feature-Name-Extension

```

change off-pbx-telephone feature-name-extensions                               Page 1 of 2
EXTENSIONS TO CALL WHICH ACTIVATE FEATURES BY NAME

Active Appearance Select:
Automatic Call Back:
Automatic Call-Back Cancel:
    Call Forward All: 300-1804
Call Forward Busy/No Answer:
    Call Forward Cancel: 300-1806
Call Park:
Call Park Answer Back:
Call Pick-Up:
Calling Number Block:
Calling Number Unblock:
Conference on Answer:
Directed Call Pick-Up:
Drop Last Added Party:
Exclusion (Toggle On/Off):
Extended Group Call Pickup:
Held Appearance Select:

```

Figure 22: Off-PBX-Telephone Feature Name Extensions Form, Page 1

```

change off-pbx-telephone feature-name-extensions                               Page 2 of 2
EXTENSIONS TO CALL WHICH ACTIVATE FEATURES BY NAME

Idle Appearance Select:
Last Number Dialed:
Malicious Call Trace:
Malicious Call Trace Cancel:
Off-Pbx Call Enable:
Off-Pbx Call Disable:
Priority Call:
    Send All Calls: 300-1825
    Send All Calls Cancel: 300-1826
Transfer On Hang-Up:
Transfer to Voice Mail:
Whisper Page Activation:

```

Figure 23: Off-PBX-Telephone Feature Name Extensions Form, Page 2

Use the **change ip-network-region** command to configure the network region used by Avaya SES. Assign values for this command as shown in the following table.

Parameter	Usage
Authoritative Domain	Enter the domain name assigned to Avaya SES. This must be the same value which was assigned in Figure 7 , Figure 26 , Figure 29 , and Figure 41 .
Name	Enter a descriptive name.

Table 13: Parameters for IP-Network-Region 1

```

change ip-network-region 1                                     Page 1 of 19

                                IP NETWORK REGION

Region: 1
Location: 1      Authoritative Domain: ffm.com
Name: FFM
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? y
UDP Port Max: 3329
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

```

Figure 24: IP-Network-Region Form

Use the **change ip-codec-set** command to specify the codec to be used for the Network Region assigned to Avaya SES. Specify that the G.711A codec is to be used.

```

change ip-codec-set 1                                         Page 1 of 2

                                IP Codec Set

Codec Set: 1

Audio      Silence      Frames      Packet
Codec      Suppression  Per Pkt   Size(ms)
1: G.711A      n          2         20
2:
3:
4:
5:
6:
7:

```

Figure 25: IP-Codec-Set Form

3.2. Configure Avaya Telephones

Configure the **46xxsettings.txt** text file to be used by Avaya Telephones. The parameters that are required to be configured in this file are shown in the following table. This is a “flat” ASCII file that must reside in the directory of the TFTP server accessible by the Avaya Telephones. Avaya Telephones must be configured so that the “FileSv” parameter is set to the address of the TFTP server that contains this configuration file, which is re-read each time the phone is restarted.

Parameter	Usage
MWISVR	The value “SES_IP_address” indicates that Avaya SIP Telephones should register with the Avaya SES server to receive message waiting events.
SIPDOMAIN	Enter the name of the SIP domain. This must be the same value which was assigned in Figure 7 , Figure 24 , Figure 29 , and Figure 41 .
ENHDIALSTAT	Set this parameter to “0” to indicate that enhanced dialing is not required.

Table 14: Parameters for Telephone Setting File

SET MWISVR	"SES_IP_address"
SET SIPDOMAIN	"ffm.com"
SET ENHDIALSTAT	0

Figure 26: Telephone Settings File Content

In addition to these settings, Avaya SIP Telephones must be configured manually to add speed dial entries to activate/deactivate Call Forwarding and Send All Calls features, by assigning the extensions that were assigned to the features shown in the following table to speed dial entries. These extensions are those that were assigned to using the **Off-Pbx-Telephone Feature-Name-Extensions** command described in **Table 12**.

Parameter	Extension	Usage
CallFwd On	3001804	Activate Call Forwarding
CallFwd Off	3001806	Deactivate Call Forwarding
SendAll On	3001825	Activate Send All Calls
SendAll Off	3001826	Deactivate Send All Calls

Table 15: Speed Dial Entry Assignments for Avaya SIP Telephones

3.3. Configure Avaya SIP Enablement Services

Log in to the Avaya SES Web-based Integrated Management tool by selecting the IP address of the Avaya SES server followed by “/admin” from the Web browser. After entering the login ID and password, select “Launch Administration Web Interface”.

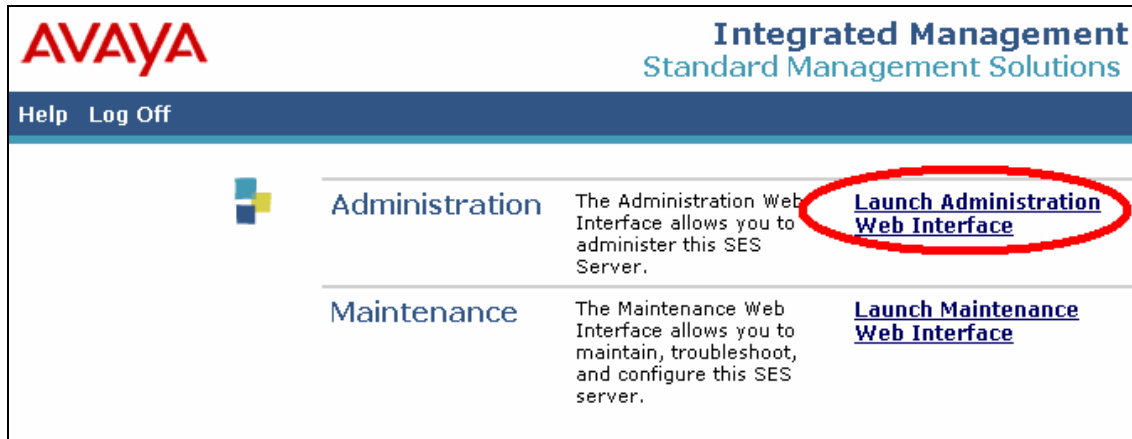



Figure 27: SES Initial Greeting Screen

The SES Integrated Management top level menu is then displayed.




Integrated Management
SIP Server Management

Help Exit

Server: 192.168.200.100

Top

- Users
- Conferences
- Media Server Extensions
 - Emergency Contacts
- Hosts
- Media Servers
- Adjunct Systems
 - Services
- Server Configuration
- Certificate Management
- IM Logs
- Trace Logger
- Export/Import to ProVision


Top

Manage Users	Add and delete Users.
Manage Conferencing	Add and delete Conference Extensions.
Manage Media Server Extensions	Add and delete Media Server Extensions.
Manage Emergency Contacts	Add and delete Emergency Contacts.
Manage Hosts	Add and delete Hosts.
Manage Media Servers	Add and delete Media Servers.
Manage Adjunct Systems	Add and delete Adjunct Systems.
Manage Services	Start and stop server processes on this host.
Server Configuration	Edit Properties of the system.
Certificate Management	Manage Certificates.
IM Logs	Download IM Logs.
Trace Logger	Manage SIP Trace Logs.
Export Import to ProVision	Export and import data using ProVision on this host.

Figure 28: SES Integrated Management Top Level Menu

3.3.1. Configure Basic Avaya SES Parameters

From the top-level management screen, select “Server Configuration” -> “System Properties”. Enter the name to be assigned to the “SIP Domain”. This must be the same value which was assigned in **Figure 7**, **Figure 24**, **Figure 26**, and **Figure 41**. Click the “Update” button.

AVAYA

Help Exit

Top

- Users
- Conferences
- Media Server Extensions
 - Emergency Contacts
- Hosts
 - List
 - Migrate Home/Edge
- Media Servers
 - List
 - Add
- Adjunct Systems
 - Services
- Server Configuration
- Certificate Management
 - IM Logs
- Trace Logger
- Export/Import to ProVision

Edit System Properties

SES Version SES-3.1.2.0-309.0

System Configuration simplex

Host Type home/edge

SIP Domain*

Note that the DNS domain is: ffm.com

If you are unsure about this field, most often the SIP domain should be the root level DNS domain. For example, for a DNS domain of eastcoast.example.com, the SIP domain would likely be configured to example.com. This allows SIP calls and instant messages to users with handles of the format handle@example.com

License Host*

Network Properties

Local IP 192.168.200.100

Local Name SES.ffm.com

Logical IP 192.168.200.100

Logical Name SES.ffm.com

Gateway IP Address 192.168.200.254

Redundant Properties

Management Device SAMP

Fields marked * are required.

Update

Figure 29: Avaya SES Edit System Properties Screen

From the top-level management screen, click “Manage Hosts” ->y “Add Host”. Enter the IP address of the Avaya SES Server, a database password, and a Profile Service Password that were allocated to the Avaya SES server when it was installed. Leave the other field assigned to their respective default values. Click the “Update” button.

Add Host

Host IP Address*

DB Password

Profile Service Password

Host Type

Parent

Listen Protocols ☒ UDP ☒ TCP ☒ TLS

Link Protocols ☐ UDP ☐ TCP ☒ TLS

Presence Access Policy (Default) ☐ Allow All ☒ Deny All

Emergency Contacts Policy ☒ Allow ☐ Deny

Minimum Registration (seconds) Registration Expiration Timer (seconds)*

Line Reservation Timer (seconds)

Outbound Routing Allowed ☒ Internal ☐ External

From OutboundProxy Port ☐ UDP ☐ TCP ☐ TLS

Outbound Direct Domains

Default Ringer Volume* Default Ringer Cadence*

Default Receiver Volume* Default Speaker Volume*

VMM Server Address

VMM Server Port VMM Report Period

Fields marked * are required.

Update

Figure 30: Avaya SES “Add Host” Screen

3.3.2. Configure Interface to Avaya Communication Manager

From the top-level management screen, select “Manage Media Servers”-> “Add Media Server”. Assign a meaningful name to the “Media Server Interface Name”. Select the IP address of the Avaya SES server as the “Host”. Enter the address of the Avaya S8300 Server as the SIP Trunk IP Address. Click the “Add” button when these parameters have been entered.

The screenshot displays the Avaya Integrated Management SIP Server Management interface. The top header features the Avaya logo and the title 'Integrated Management SIP Server Management'. A status bar indicates the server IP as '192.168.200.100'. A left-hand navigation menu lists various management options, including 'Media Servers'. The main content area is titled 'Add Media Server Interface' and contains the following fields:

- Media Server Interface Name***: Text input field containing 'G350'.
- Host**: Dropdown menu showing '192.168.200.100'.
- SIP Trunk Link Type**: Radio buttons for 'TCP' and 'TLS', with 'TLS' selected.
- SIP Trunk IP Address***: Text input field containing '192.168.30.100'.
- Media Server** section with four text input fields:
 - Media Server Admin Address (see Help)
 - Media Server Admin Login
 - Media Server Admin Password
 - Media Server Admin Password Confirm

A note at the bottom states: 'Fields marked * are required.' The 'Add' button at the bottom left is circled in red.

Figure 31: Avaya SES Add Media Server Interface Screen

From the Media Server List screen select “Map” -> “Add Map In New Group”.




The screenshot displays the Avaya Integrated Management SIP Server Management interface. The top header includes the Avaya logo, the title "Integrated Management SIP Server Management", and the server IP address "192.168.200.100". A navigation menu on the left lists various system components, with "Media Servers" selected. The main content area, titled "List Media Servers", contains a table with columns for "Commands", "Interface", and "Host". A single row is visible, showing "Edit Extensions", "Map", "Test-Link", "Delete", "G350", and "192.168.200.100". The "Map" button is circled in red. Below the table, there is a button labeled "Add Another Media Server Interface".

Commands	Interface	Host
Edit Extensions	Map	Test-Link
Delete	G350	192.168.200.100

Figure 32: Media Server List Screen

Enter a meaningful name for the address map. Enter the “^sip:3.*” to cause all calls to numbers beginning with “3” to be routed to the “G350” (Avaya G350 Media Gateway) . Click the “Add” button.



The screenshot displays the Avaya Integrated Management SIP Server Management web interface. The top header features the Avaya logo on the left and the title 'Integrated Management SIP Server Management' on the right, with the server IP '192.168.200.100' below it. A navigation menu on the left lists various system components, with 'Add' buttons next to each. The main content area is titled 'Add Media Server Address Map' and contains a form with the following fields: 'Host' (pre-filled with 'G350'), 'Name*' (text input with 'G350map'), 'Pattern*' (text input with '^sip:3.*'), and 'Replace URI' (checkbox checked). A note states 'Fields marked * are required.' The 'Add' button at the bottom of the form is circled in red.

Host	G350
Name*	G350map
Pattern*	^sip:3.*
Replace URI	<input checked="" type="checkbox"/>

Fields marked * are required.

Add

Figure 33: Add Media Server Address Map

The screenshot displays the Avaya Integrated Management web application. The top header shows the Avaya logo and the title "Integrated Management SIP Server Management". Below the header, there's a navigation bar with "Help" and "Exit" links, and a server status indicator "Server: 192.168.200.100".

A left-hand sidebar contains a tree view of navigation options:

- Top**
 - Users
 - Conferences
 - Media Server
 - Extensions
 - Emergency
 - Contacts
 - Hosts
 - List
 - Migrate
 - Home/Edge
 - Media Servers
 - Adjunct Systems Services
 - Server Configuration
 - Certificate Management
 - IM Logs
 - Trace Logger
 - Export/Import to ProVision

The main content area is titled "List Media Server Address Map". It shows a host named "G350". Below this, there's a table listing media server address maps:

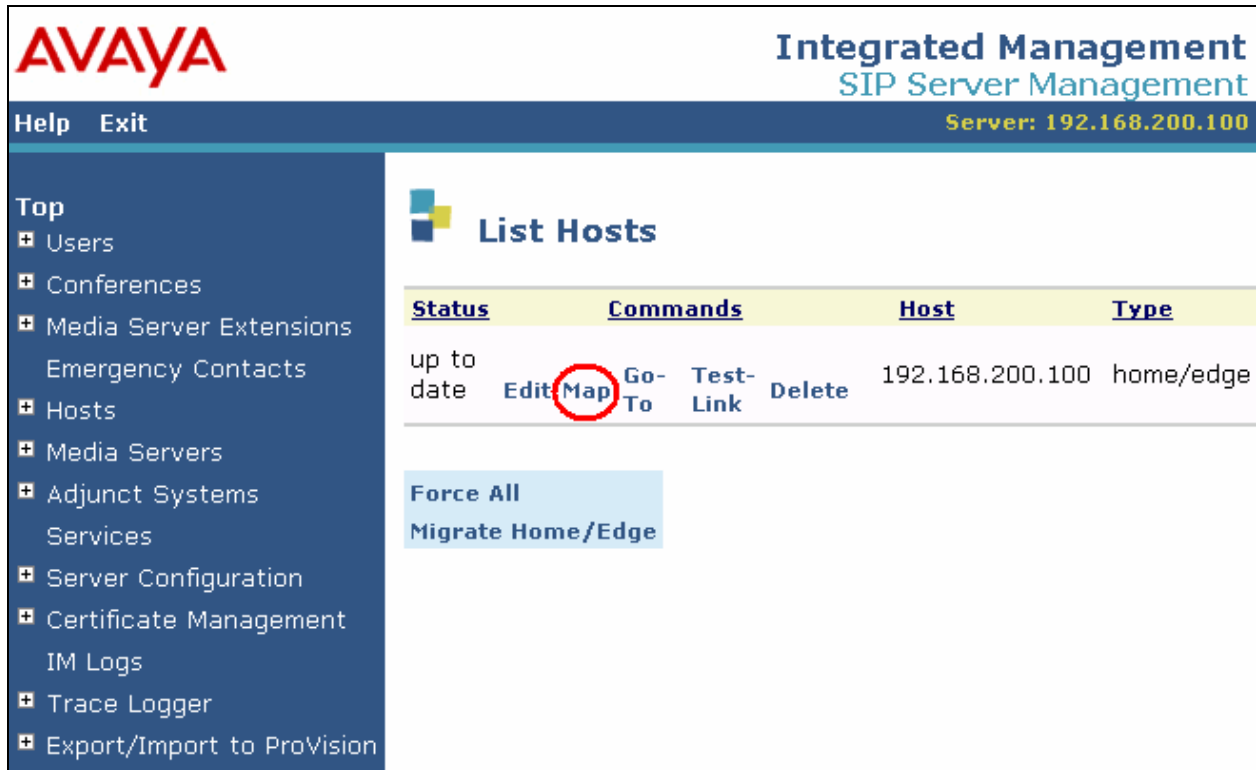
Commands	Name	Commands	Contact
Edit Delete	G350Map		
Edit Delete		sip:\${(user)}@192.168.30.100:5061;transport=tls	

Below the table, there are three action buttons: "Add Another Map", "Add Another Contact", and "Delete Group". At the bottom, there's a button labeled "Add Map In New Group".

MRR; Reviewed:
SPOC 11/14/2007

3.3.3. Configure SIP Interface to NovaMail

From the top level Management Screen, select “Manage Hosts” -> “List Hosts”. Select the “Map” -> “Add Map In New Group” menu point to add a host map for NovaMail.



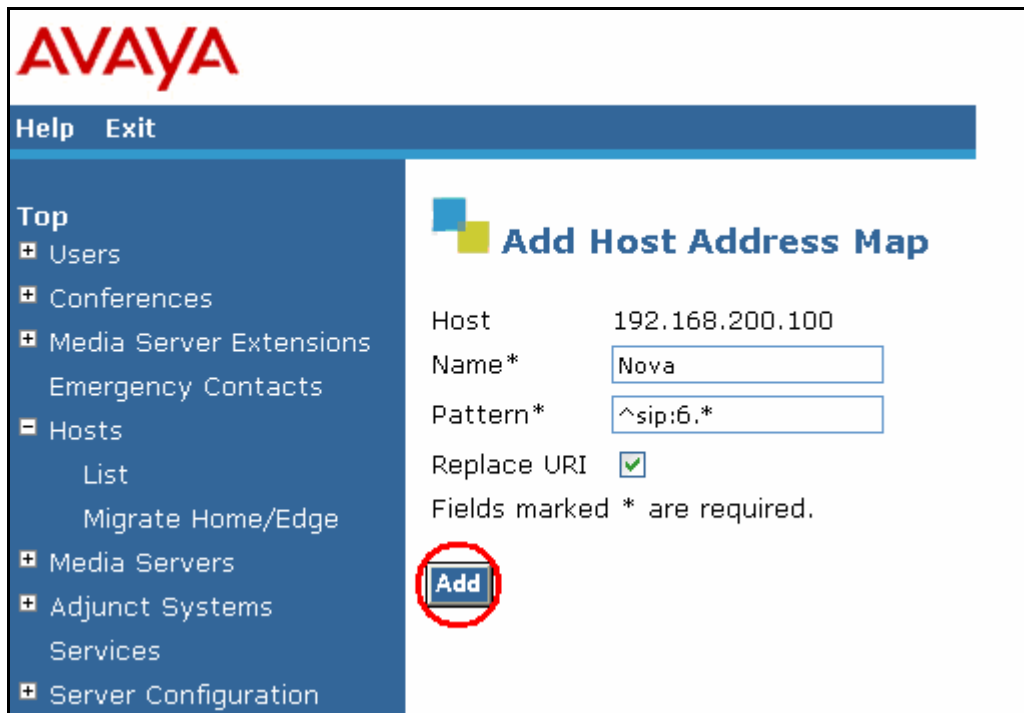
The screenshot shows the Avaya Integrated Management SIP Server Management interface. The top header includes the Avaya logo, the title "Integrated Management SIP Server Management", and the server address "Server: 192.168.200.100". A navigation menu on the left lists various management options. The main content area is titled "List Hosts" and displays a table of host information. The table has columns for Status, Commands, Host, and Type. A single host is listed with the status "up to date", the host address "192.168.200.100", and the type "home/edge". The "Commands" column for this host contains links for "Edit", "Map", "Go-To", "Test-Link", and "Delete". The "Map" link is circled in red. Below the table, there are two buttons: "Force All" and "Migrate Home/Edge".

Status	Commands	Host	Type
up to date	Edit Map Go-To Test-Link Delete	192.168.200.100	home/edge

[Force All](#)
[Migrate Home/Edge](#)

Figure 35: SES Host List

Enter a meaningful name for the host map and pattern which matches the telephone extensions assigned to NovaMail. The pattern “^sip:6.*” matches all SIP telephone numbers assigned to NovaMail (numbers beginning with “6”). Click the “Add” button upon completion.



The image shows the Avaya SES web interface for adding a host address map. The Avaya logo is at the top left. Below it is a navigation menu with options like Users, Conferences, Media Server Extensions, Hosts, Media Servers, Adjunct Systems, and Server Configuration. The 'Hosts' section is expanded, showing 'List' and 'Migrate Home/Edge'. The main content area is titled 'Add Host Address Map' and contains the following fields: 'Host' (192.168.200.100), 'Name*' (Nova), 'Pattern*' (^sip:6.*), and 'Replace URI' (checked). A red circle highlights the 'Add' button at the bottom left of the form. A note at the bottom states 'Fields marked * are required.'

AVAYA

Help Exit

Top

- + Users
- + Conferences
- + Media Server Extensions
 - Emergency Contacts
- + Hosts
 - List
 - Migrate Home/Edge
- + Media Servers
- + Adjunct Systems
 - Services
- + Server Configuration

Add Host Address Map

Host 192.168.200.100

Name* Nova

Pattern* ^sip:6.*

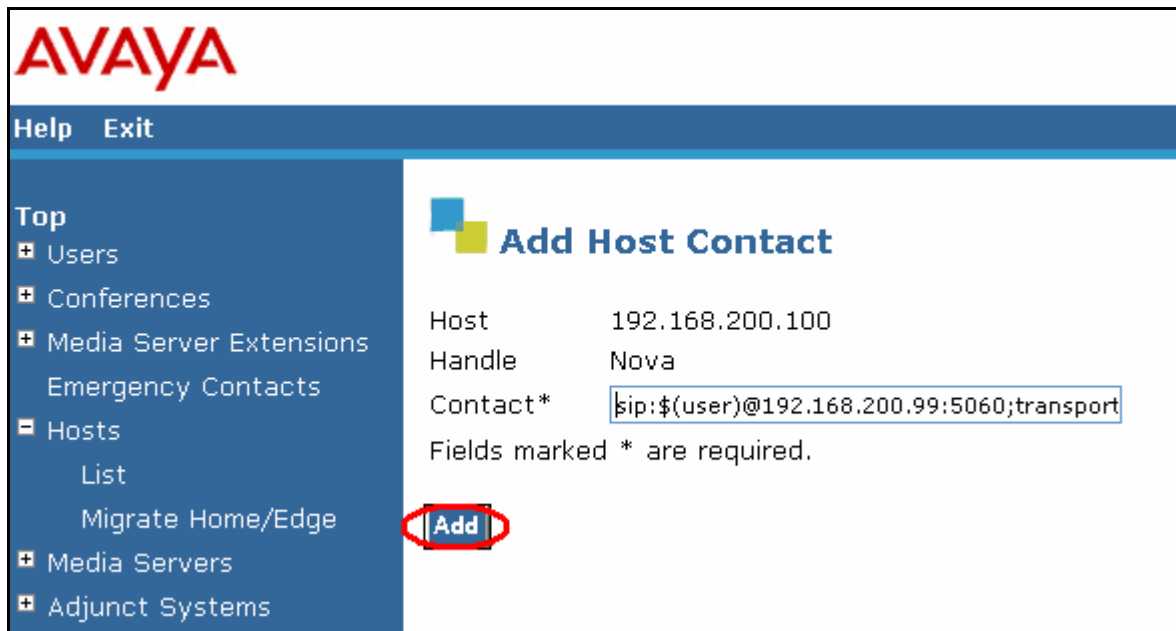
Replace URI ☒

Fields marked * are required.

Add

Figure 36: Avaya SES Host Address Map for NovaMail

When the Host Address Map list is displayed, select “Add Contact” to create a contact for NovaMail. Enter “sip:\$(user)@”<NovaMail IP address>”;<NovaMail port>;transport=udp”. Upon completion of this form, click the “Add” button.



AVAYA

Help Exit

Top

- + Users
- + Conferences
- + Media Server Extensions
- Emergency Contacts
- Hosts
 - List
 - Migrate Home/Edge
- + Media Servers
- + Adjunct Systems

Add Host Contact

Host 192.168.200.100

Handle Nova

Contact*

Fields marked * are required.

Add

Figure 37: Avaya SES Host Contact for NovaMail

3.3.4. Configure Users for SIP Endpoints

This step can be omitted if no SIP endpoints are present in the configuration. From the top level menu, select the “Manage Users” -> “Add User” menu entries. Enter the extension of the user to be added as the “Primary Handle”. This is the same extension that was configured in **Section 3.1.8**. Enter a password and first/last name of the user, check the “Add Media Server Extension” box, and click the “Add” button.

AVAYA Integrated Management
SIP Server Management
Server: 192.168.200.100

Help Exit

Add User

Primary Handle* 3000115
User ID 3000115
Password*
Confirm Password*
Host* 192.168.200.100
First Name* Extn
Last Name* 3000115
Address 1 Kleyerstr 94
Address 2
Office
City Frankfurt
State
Country Germany
Zip 60326
Add Media Server Extension ☒
Fields marked * are required.

Add

Figure 38: Avaya SES “Add User” Screen

Enter the Media Server Extension for the User ID 3000115 (the extension of the Avaya SIP telephone). Select the Media Server (refer to **Figure 39**) and drop down box and click “Add” to continue.

The screenshot shows the Avaya Integrated Management SIP Server Management interface. The top header includes the Avaya logo, the title 'Integrated Management SIP Server Management', and the server IP '192.168.200.100'. A left sidebar contains a navigation menu with options like Users, Conferences, Media Server Extensions, Hosts, Media Servers, Adjunct Systems, Services, Server Configuration, Certificate Management, IM Logs, Trace Logger, and Export/Import to ProVision. The main content area is titled 'Add Media Server Extension' and contains a form with 'Extension*' (3000115) and 'Media Server' (G350) fields. A red circle highlights the 'Add' button at the bottom of the form.

Figure 39: Avaya SES Add Media Server Extension Screen

3.3.5. Configure Trusted Hosts

Login to the Avaya SES server with the appropriate user privileges and assign the IP address of the NovaMail server as a trusted host so that Avaya SES will not request authorization from NovaMail.

```
admin@SES> trustedhost -a 192.168.200.99 -n 192.168.200.100 -c NovaLink
192.168.200.99 is added to trusted host list.
```

Figure 40: Trusted Host Assignment for SIP Interface

3.4. Configure NovaMail

3.4.1. Configuration file NovaMail.ini

The NovaMail.ini configuration file is a “flat” ASCII file that can be edited with a text editor. This file is contained in the main installation directory on the NovaMail server (e.g. C:\Program Files\NovaMail). The values within this file must be set as shown in **Figure 41**. The values for those items shown in bold may vary, depending on the configuration of external components. The values to be used for these entries are described in the following table. Note that the extension values used for the “CallingParty” and “LocalUserName” parameters can be identical. These parameters are used by different subcomponents of the NovaMail server.

Parameter	Usage
CardDriver	Enter “3” to specify the SIP driver.
CallingParty	Enter the extension chosen for NovaMail.
SigTyp	Enter "50" to specify the SIP driver.
DriverPref	Enter “3” to specify the SIP driver.
LocalUserName	Enter the extension chosen for NovaMail.
SIP_Gateway	Enter the Authoritative Domain. This must be the same value which was assigned in Figure 7 , Figure 24 , Figure 26 , and Figure 29 . This is followed by the IP address for was the Avaya SES server, as defined in the “ses” entry in the Node-Names form shown in Figure 6 .

Table 16: Parameters for Telephone Setting File

```
[CallInfo]
CardDriver=3
CallingParty=6000000
SigTyp=50

[VoIP]
DriverPref=3
LocalUserName=6000000
SIP_Gateway=ffm.com,192.168.200.100
```

Figure 41: NovaMail.ini Configuration File Content

3.4.2. Configure NovaMail Application

Use the Windows “Start” button to select the program “NovaMail Webclient”. After entering the user name and password, the NovaMail startup screen is displayed. Click the “Participant” icon to show the configured NovaMail participants.

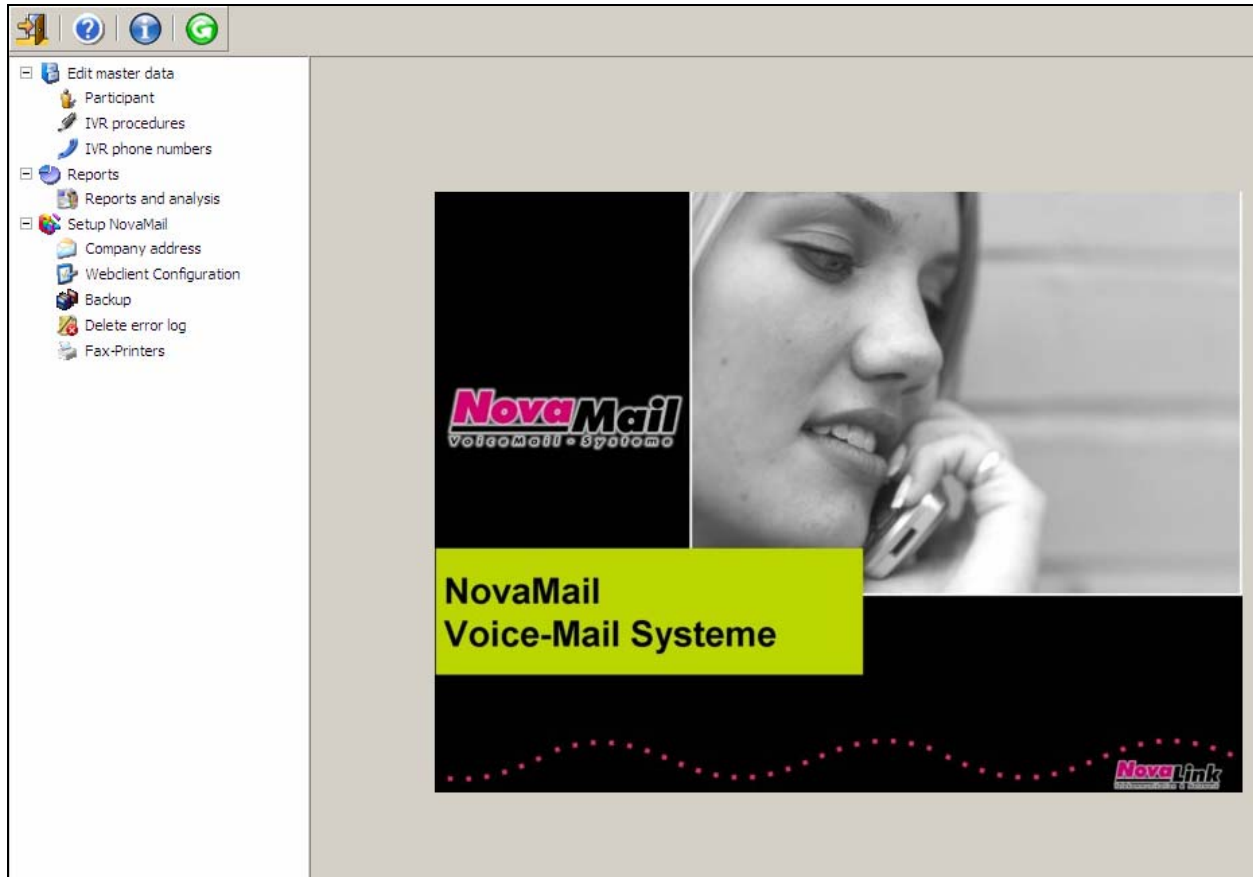


Figure 42: NovaMail Startup Screen

3.4.2.1 Configure Users

Assuming that no other users have been defined, the user designated as administrator is displayed. The configuration of the administrator is beyond the scope of these Application Notes. See reference [4] for additional information. Click the “New participant” icon to add a NovaMail participant. A Participant should be configured for each of the telephone extensions shown in **Table 1**Error! Reference source not found..

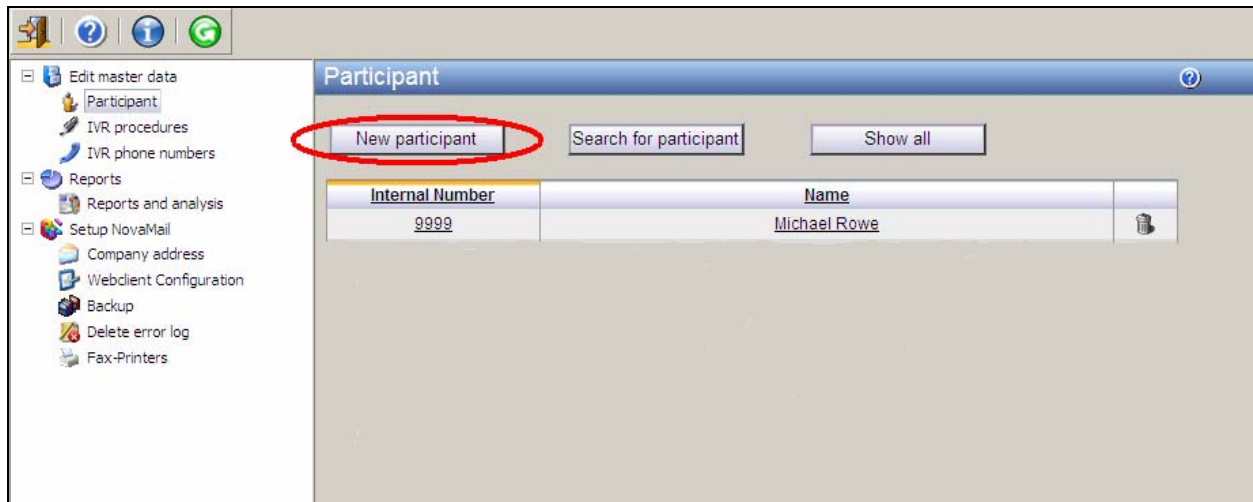


Figure 43: NovaMail Participant List Screen

Enter the values shown in the table below into the NovaMail Participants Screen shown in **Figure 44** and click the “Adopt data” button upon completion.

Parameter	Usage
View	Select “Expert” from the drop-down box.
Internal phone number	Enter the user’s extension.
Surname / First name	Enter the user’s first name followed by last name.
Pin code	Enter the numeric code that the user can use for authorization.
Language	Select the language spoken by the user
Deputy’s phone number	Enter the extension to which calls are to be diverted when the user is absent or unable to answer incoming calls.

Table 17: NovaMail Participant General Configuration Parameters

Process participants Back ?

Rufnummer: Name:

View Current messages

General Profiles Additional participants Authorisations

Internal phone number:

Surname / First name:

Pin code:

From own unit without Pin: ☐

Language:

E-mailbox:

Alternative Phone number 1:

Alternative phone number 2:

Deputy's phone number:

Fixed diversion destination for messages:

Type of mailbox:

Delete new messages after: Days

Delete old messages after: Days

Maximum number of messages:

Activate message waiting: ☐

Adopt data Delete entries

Figure 44: NovaMail Participant Screen

Select the “Profiles” tab and click the “Standard” profile.

Process participants Back ?

Rufnummer: Name:

View Current messages

General Profiles Additional participants Authorisations

New profile

Name	Active
Standard	<input checked="" type="checkbox"/>

Figure 45: NovaMail Profile Screen

For “Internal calls” select “1: Representative” from the “Possible selection” drop-down box for each of the call types. Note that this selection is only available if a “Deputy’s phone number” was assigned in the NovaMail Participant screen shown in **Figure 44**. Leave the other fields within this screen set to their default values.

Process profile Zurück ?

Profilname: Standard Teilnehmer: 3000001 / User 3000001

Ansicht: Expert

Recorded messages Notification Times Fax

Profile name: Standard ☒ Active

Rename recorded mess

Notify absence: ☐ Recorded message only, no recording

	Recorded message:	Possible selection:	NA	AB
Standard calls	Standard greeting "Not present" (101)	1: Representative	<input type="checkbox"/>	<input checked="" type="checkbox"/>
For diverted telephone:	Standard greeting "Out of office" (102)	1: Representative	<input type="checkbox"/>	<input checked="" type="checkbox"/>
For occupied telephone:	Standard greeting "Busy" (103)	1: Representative	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Recorded message:	Possible selection:	NA	AB
Standard calls:	Standard greeting "Not present" (101)	No menu	<input type="checkbox"/>	<input checked="" type="checkbox"/>
For diverted telephone:	Standard greeting "Out of office" (102)	No menu	<input type="checkbox"/>	<input checked="" type="checkbox"/>
For occupied telephone:	Standard greeting "Busy" (103)	No menu	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Save data Cancel data

Figure 46: NovaMail Recorded Message Profile Screen

Select the “Notification” tab and enter values shown in the following table. On completion of this operation, click the “Save data” button.

Parameter	Usage
Notification for	Selected “Voice messages only” from the drop down box.
Keep copy of the recording on the VoiceMail system	Check this box to cause voice mail recordings to be retained.
Display on telephone	Check this box to cause the Message Waiting Lamp to be activated on the user’s telephone when new messages are available.

Table 18: NovaMail Notification Configuration Parameters

Figure 47: NovaMail Notification Profile Screen

When users have been allocated for each of the extensions in **Table 1** Error! Reference source not found., the newly configured users are now listed in the “Participant” screen.

Internal Number	Name
9999	Michael Rowe
3000001	User 3000001
3000115	User 3000115
3000133	User 3000133
3000134	User 3000134
3000136	User 3000136

Figure 48: NovaMail Participant List Screen

4. Interoperability Compliance Testing

The interoperability compliance tests included feature and serviceability testing.

The feature testing focused on testing scenarios that involve interaction between the NovaMail server and Avaya products, including various sequences involving the following:

- Verification of the ability of various Avaya Telephones to call the NovaMail server.
- Verification of the ability of the NovaMail server to establish connections to various Avaya Telephones.
- Verification of the ability of the NovaMail server to establish contact with Avaya Telephones that have activated a call diversion.
- Verification of the ability of the NovaMail server to present callers with the correct greeting dependent on whether the called party was busy, unavailable, or out of the office.
- Verification of the ability of the NovaMail server to differentiate between local and external callers.
- Verification of the ability of NovaMail to recognize DTMF tones.
- Verification of the ability of Avaya Telephones to correctly log unanswered calls from the NovaMail server.

The serviceability testing focused on verifying that the NovaMail product components can recover from interruption to interface connections that can occur during routine maintenance activities. The NovaMail server was also tested for recovery from unexpected power interruption.

4.1. General Test Approach

The test method employed can be described as follows:

- Correct interoperation between the NovaMail server and Avaya Communication Manager was verified by confirming that the various telephony operations that can be invoked by voice mail activity all function properly.
- NovaLink NovaMail robustness was tested by verifying its ability to recover from interruptions to its external IP connection.
- Verifying the ability to recover from power interruptions to the NovaMail server further tested its robustness.

All testing was performed manually. The tests were all functional in nature, and no performance testing was done.

4.2. Test Results

The following was observed during testing:

- It is not possible for NovaMail to perform a blind transfer within the Interactive Voice Response (IVR) module. However, the consultative transfer operator performs correctly, so this should be configured instead.
- It is not possible for NovaMail to detect that an Avaya 4600 Series H.323 phone is disconnected, as Avaya Communication Manager does not report this status to the caller.

5. Verification Steps

The following steps can be performed to verify the basic operation of the various system components:

- Verify that Avaya Communication Manager and the NovaMail server can ping each other. The “ping” command can be executed from the NovaMail server by executing the “cmd” component via the run facility from the Windows “Start” control and entering “ping” followed by the IP address to which the ping message is to be sent. The “ping” command can be executed from Avaya Communication Manager via an SSH login session.
- Verify that the Avaya IP Telephones can call each other.
- From the Avaya Communication Manager SAT terminal, use the “status trunk” command to verify that the ports for the trunk connected to NovaMail are in the “in-service/idle” state.
- From the Avaya SES Maintenance Web Interface, select the “Status Summary” screen and verify that the server is in “Active” mode, no alarms are being generated, the “Server Hardware” is “okay”, and that server “Processes” are “okay”.
- Verify that it is possible to place calls between SIP and H.323 endpoints.
- Verify that each of the Avaya Telephones can call the extension allocated to NovaMail to perform a mailbox enquiry.
- Verify that it is possible for NovaMail to call each Avaya Telephone to deliver a voicemail message.

- Call the NovaMail server from both local extensions and telephones attached to the PSTN and verify that NovaMail responds with the correct greeting.
- Make calls to NovaMail clients which are busy, out of the office (send all calls activated), and unavailable (no answer) and verify that the correct greeting is presented to the caller.
- Verify that it is possible to navigate the NovaMail voice menu from each of the Avaya Telephones by calling the NovaMail extension, and entering key sequences in response to prompting requests from NovaMail.
- Verify the ability of NovaMail to receive overlap numbers by using Avaya Telephones to place a call to NovaMail via its trunk access code followed by the NovaMail extension.
- Verify the ability of Avaya Telephones to correctly log unanswered calls by initiating an unanswered voicemail delivery call from NovaMail to each of the Avaya Telephones, verifying the name and number in the log of the telephone, and subsequently dialing the caller from the telephone log.

6. Support

Technical support from NovaLink can be obtained through the following:

NovaLink GmbH
Businessstower
Zuercherstrasse 310
8500 Frauenfeld
Switzerland
helpdesk@novalink.ch
Phone: +41 52 762 66 77
Fax: +41 52 762 66 99

7. Conclusion

These Application Notes describe the configuration of the NovaMail with Avaya Communication Manager. The various features of the NovaMail that involve its telephone interface were tested. NovaMail passed all of the tests performed, which included both functional and robustness tests.

8. Additional References

- [1] *Administrator Guide for Avaya Communication Manager*, February 2007, Issue 3, Document Number 03-300509
- [2] *Feature Description and Implementation for Avaya Communication Manager*, February 2007, Issue 5, Document Number 555-245-205
- [3] *Installing and Administering SIP Enablement Services*, March 2007, Issue 2.1, Document Number 03-600768
- [4] *NovaMail 7.5 manual*, May 2007

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