BroadSoft Partner Configuration Guide

Polycom UC Software VVX 300/400/500/600 Phones

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BroadWorks® Guide

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Document Revision History

Version	Reason for Change
1.1	Introduced document for Polycom VVX 300/400 Phones version 4.1.4 validation with BroadWorks Release 18.sp1.
1.2	Updated document for Polycom VVX 500/600 Phones version 4.1.3 validation with BroadWorks Release 19.sp1.
1.3	Edited and published document.
1.4	Updated document to include support for new Polycom VVX 310 and VVX 410 Phones version 4.1.4.
1.5	Edited changes and published document.
1.6	Added information in section *2.1 Verified Versions* to indicate that Polycom VVX 500/600 Phones version 4.1.3 was verified in both interoperability testing and access solution testing with BroadWorks Release 19.sp1.
1.7	Edited changes and published document.
1.8	Modified *DeviceManagementDefaults* device profile type is to use BroadWorks tags for reducing deployment overhead.
1.9	Edited changes and published document.
1.10	Updated document to include provisioning steps to enable Polycom VVX500/600 phones at version 4.1.3G supporting the BroadSoft UC-One application. Added validated version of 4.1.3 with BroadWorks Release 18.sp1.
1.11	Edited changes and published document.
1.12	Revised UC-One Integration section to incorporate the Broadworks Enterprise Directory feature.
1.13	Edited changes and published document.
1.14	Updated document for VVX phones version 5.0.0 validation with BroadWorks Release 18.sp1.
1.15	Edited changes and published document.
1.16	Modified Device Management (DM) section to support Flexible Seating in Release 20.
1.17	Edited changes and published document.

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1 Overview

This guide describes the configuration procedures required for Polycom® UC Software VVX phones to be interoperable with BroadWorks. This includes the following Polycom SoundPoint/Business Media models:

- VVX 300/310 Phones
- VVX 400/410 Phones
- VVX 500 Phone
- VVX 600 Phone

The VVX phones are access devices that use the Session Initiation Protocol (SIP) to communicate with BroadWorks for call control. These devices run a common software solution referred to as Polycom UC Software.

This guide describes the specific configuration items that are important for use with BroadWorks. It does not describe the purpose and use of all configuration items on a VVX phone. For more information, see the configuration guide called *Polycom® UC Software Administrator's Guide* [1] supplied by Polycom.

Note that the support and interoperability status for the Polycom VVX 1500 Phone is provided and maintained in the documents for the Polycom UC Software devices.

2 Interoperability Status

This section provides the known interoperability status of the Polycom® VVX products that use Polycom UC Software with BroadWorks. This includes the version(s) tested, supported capabilities, and known issues.

Interoperability testing validates that the device interfaces properly with BroadWorks via the SIP interface. Qualitative aspects of the device or device capabilities not affecting the SIP interface, such as display features, performance, and audio qualities, are not covered by interoperability testing. Requests for information and/or issues regarding these aspects should be directed to Polycom.

2.1 Verified Versions

The following table identifies the verified Polycom® VVX phone versions and the month/year the testing occurred. If the software has undergone more than one test cycle, versions for each test cycle are listed, with the most recent listed first.

Compatible Versions in the following table identifies specific Polycom VVX phone versions, which the partner has identified as compatible, and should interface properly with BroadWorks. Generally, maintenance releases of the validated version are considered compatible and may not be specifically listed here. Contact Polycom for any questions concerning maintenance and compatible releases.

NOTE: Interoperability testing is usually performed with the latest generally available (GA) device firmware/software and the latest GA BroadWorks release and service pack at the time the testing occurs. If there is a need to use a non-verified mix of BroadWorks and device software versions, customers can mitigate their risk by self-testing the combination using the *BroadWorks SIP Access Device Interoperability Test Plan* [4].

Verified Versions Table

Date (MM/YYYY)	BroadWorks Release	Polycom Version	Polycom Compatible Versions	Application Layer Gateway (ALG) Version **	SBC Version **
12/2013	Release 18.sp1	5.0.0	5.0.0 Revisions	-----	-----
08/2013	Release 18.sp1	4.1.3 Version Supported **ONLY** for VVX 500 and VVX 600 phone models	4.1.0 Revisions	-----	-----
04/2013	Release 18.sp1	4.1.4 Version Supported **ONLY** for VVX 300/310 and VVX 400/410 phone models	4.1.0 Revisions	-----	-----

Verified Versions Table					
Date (MM/YYYY)	**BroadWorks Release**	**Polycom Version**	**Polycom Compatible Versions**	**Application Layer Gateway (ALG) Version ******	**SBC Version ******
04/2013 *	Release 19.sp1	4.1.3 Version Supported **ONLY** for VVX 500 and VVX 600 phone models	4.1.0 Revisions	Edgewater EdgeMarc 4550 Version 12.9.1	ACME Net-Net 4250 Firmware SC6.2.0 MR-4 Patch 26.2.0
04/2013	Release 19.sp1	4.1.3 Version Supported **ONLY** for VVX 500 and VVX 600 phone models	4.1.0 Revisions	------	------
12/2012	Release 18.sp1	4.1.2 Version Supported **ONLY** for VVX 500 and VVX 600 phone models	4.1.0 Revisions	------	------

* – Denotes access solution testing iteration for which an ALG and SBC are included in the testing. Interoperability testing directly with BroadWorks for the major release is required before access solution testing.

** – ALG and SBC versions are identified for access solution testing iterations only.

2.2 Interface Capabilities Supported

The Polycom UC Software VVX phones have completed interoperability testing with BroadWorks using the *BroadWorks SIP Access Device Interoperability Test Plan* [4]. The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas, such as “Basic” call scenarios and “Redundancy” scenarios. Each package is composed of one or more test items, which in turn are composed of one or more test cases. The test plan exercises the SIP interface between the device and BroadWorks with the intent to ensure interoperability sufficient to support the BroadWorks feature set.

The *Supported* column in the following table identifies the Polycom VVX phone support for each of the items covered in the test plan packages, with the following designations:

- Yes Test item is supported
- No Test item is not supported
- NA Test item is not applicable to the device type
- NT Test item was not tested

Caveats or clarifications are identified in the *Comments* column.

Note that *DUT* in the following table refers to the *Device Under Test*, which in this case are the Polycom VVX phones.

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
Basic	Call Origination	Yes	
	Call Termination	Yes	
	Session Audit	Yes	
	Session Timer	Yes	
	Ringback	Yes	
	Forked Dialog	Yes	
	Early UPDATE	No	
	Early – Session	No	
	181 Call Being Forwarded	Yes	
	Dial Plan	Yes	
	DTMF – Inband	Yes	
	DTMF – RFC 2833	Yes	
	DTMF – DTMF Relay	Yes	
	Codec Negotiation	Yes	
	Codec Renegotiation	Yes	
BroadWorks Services	Third-Party Call Control – Basic	NA	
	Third-Party Call Control – Advanced	Yes	
	Voice Message Deposit/Retrieval	Yes	
	Message Waiting Indicator	Yes	
	Voice Portal Outcall	Yes	
	Advanced Alerting	Yes	
	Calling Line ID	Yes	
	Calling Line ID with Unicode Characters	Yes	
	Connected Line ID	Yes	Except COLR and COLR after Call Forwarding.
	Connected Line ID with Unicode Characters	Yes	
	Connected Line ID on UPDATE	Yes	
	Connected Line ID on Re-INVITE	Yes	
	Diversion Header	Yes	
	History-Info Header	Yes	
	Advice of Charge	No	
	Meet-Me Conferencing	Yes	
DUT Services – Call Control Services	Call Waiting	Yes	
	Call Hold	Yes	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	Call Transfer	Yes	
	Three-Way Calling	Yes	
	Network-Based Conference	Yes	
DUT Services – Registration and Authentication	Register Authentication	Yes	
	Maximum Registration	Yes	
	Minimum Registration	Yes	
	Invite Authentication	Yes	
	Re-Invite/Update Authentication	Yes	
	Refer Authentication	Yes	
	Device Authenticating BroadWorks	Yes	
DUT Services – Fax	G711 Fax Passthrough	NA	
	G711 Fax Fallback	NA	
	T38 Fax Messaging	NA	
DUT Services – Miscellaneous	Do Not Disturb	Yes	
	Call Forwarding Always	Yes	
	Call Forwarding Always Diversion Inhibitor	No	
	Anonymous Call	No	
	Anonymous Call Block	No	
	Remote Restart Via Notify	Yes	
Advanced Phone Services – Busy Lamp Field	Busy Lamp Field	Yes	
	Call Park Notification	Yes	
Advanced Phone Services – Feature Key Synchronization, Private Line	Do Not Disturb	Yes	
	Do Not Disturb Ring Splash	Yes	
	Call Forwarding	Yes	
	Call Forwarding Always Ring Splash	Yes	
	Call Forwarding Always Diversion Inhibitor	Yes	
	Call Center Agent Logon/Logoff	Yes	
	Call Center Agent Unavailable Code	Yes	
Advanced Phone Services – Feature Key Synchronization, Shared Line	Do Not Disturb	Yes	
	Do Not Disturb Ring Splash	Yes	
	Call Forwarding	Yes	
	Call Forwarding Always Ring Splash	Yes	
	Call Forwarding Always Diversion Inhibitor	Yes	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
Advanced Phone Services – Missed Calls Display Synchronization	Missed Calls Display Sync	Yes	
Advanced Phone Services – Shared Call Appearance using Call Info	Line-Seize	Yes	
	Call-Info/Lamp Management	Yes	
	Public Hold	Yes	
	Private Hold	No	
	Multiple Call Arrangement	Yes	
	Bridging	Yes	
	Call Park Notification	No	
Advanced Phone Services – Call Center	Hold Reminder	Yes	
	Call Information	Yes	
	Hoteling Event	Yes	
	Status Event	Yes	
	Disposition Code	Yes	
	Emergency Escalation	Yes	
	Customer Originated Trace	Yes	
Advanced Phone Services – Call Park Notification	Call Park Notification	No	
Redundancy	DNS SRV Lookup	Yes	
	Register Failover/Failback	Yes	
	Invite Failover/Failback	Yes	
	Bye Failover	Yes	
SBC/ALG	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
Video – Basic Video Calls	Call Origination	Yes	(VVX 500/600 only)
	Call Termination	Yes	(VVX 500/600 only)
	Call Hold	Yes	(VVX 500/600 only)
	Call Waiting	Yes	(VVX 500/600 only)
	Call Transfer	Yes	(VVX 500/600 only)
Video – BroadWorks Video Services	Auto Attendant	Yes	(VVX 500/600 only)
	Auto Attendant – HD	No	
	Voice Messaging	Yes	(VVX 500/600 only)
	Voice Messaging – HD	No	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	Custom Ringback	No	
TCP	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
IPV6	Call Origination	No	
	Call Termination	No	
	Session Audit	No	
	Ringback	No	
	Codec Negotiation/Renegotiation	No	
	Call Control	No	
	Registration with Authentication	No	
	T38 Fax Messaging	No	
	Busy Lamp Field	No	
	Redundancy	No	
	SBC	No	
	Video	No	

2.3 Known Issues

This section lists the known interoperability issues between BroadWorks and specific partner release(s). Issues identified during interoperability testing and known issues identified in the field are listed.

The following table provides a description of each issue and, where possible, identifies a workaround. The verified partner device versions are listed with an "X" indicating that the issue occurs in the specific release. The issues identified are device deficiencies or bugs, so typically not BroadWorks release dependent.

The *Issue Number* is a BroadSoft ExtraView partner issue number when the testing was performed by BroadSoft. When the testing was performed by the partner or a third party, the partner may or may not supply a tracking number.

For more information on any issues related to a particular partner device release, see the partner release notes.

Issue Number	Issue Description	Partner Version			
		4.1.2	4.1.3	4.1.4	5.0.0
None	There are no issues.				

3 BroadWorks Configuration

This section identifies the required BroadWorks device profiles for the Polycom VVX phones as well as any other unique BroadWorks configuration required for interoperability with the VVX phones.

3.1 BroadWorks Device Profile Configuration

This section identifies the device profile to use when deploying the Polycom VVX phones with BroadWorks.

The following table identifies the required BroadWorks device identity/profile settings for interoperability between the VVX phones and BroadWorks. For an explanation of the profile parameters, see the *BroadWorks Device Management Configuration Guide* [2].

For most of the following parameters, an "X" indicates the parameter function is supported and/or required. If the item is blank, it is not supported. For items where text is supplied, the text content maps directly to the web page for adding or modifying a device profile.

Polycom UCS Devices Identity/Device Profile	
Signaling Address Type	Intelligent Proxy Addressing
	Standard Options
Number of Ports	VVX 300/310: 6 VVX 400/410: 12 VVX 500: 12 VVX 600: 16
Ringback Tone/ Early Media Support	Local Ringback – No Early Media
Authentication	Enabled
Hold Normalization	RFC 3264
Registration Capable	X
Static Registration Capable	
E.164 Capable	
Trusted	
Authenticate REFER	X
Video Capable	X (VVX 500/600 only)
Use History-Info Header	
	Advanced Options
Route Advance	
Wireless Integration	
PBX Integration	
Add P-Called-Party-ID	
Auto Configuration Soft Client	
Requires BroadWorks Call Waiting Tone	

Polycom UCS Devices Identity/Device Profile	
Advice of Charge Capable	
Enable Monitoring	
Forwarding Override	
Conference Device	
Music On Hold Device	
Requires BroadWorks Digit Collection	
Requires MWI Subscription	
Support Call Center MIME Type	X
Support Identity in UPDATE and Re-INVITE	X
Support RFC 3398	
Reset Event	checkSync
Trunk Mode	User
Hold Announcement Method	Inactive
Unscreened Presentation Identity Policy	Profile
Web-Based Configuration URL Extension	
Device Configuration Options	
Device Configuration Options	Device Management

3.2 BroadWorks Configuration Steps

No additional BroadWorks configuration steps are required.

4 Polycom VVX Phone Configuration

The Polycom VVX phones can be configured with a configuration file using the HTTP, Trivial File Transfer Protocol (TFTP) or through its embedded web server. The following examples describe how to set the parameters using a configuration file. This configuration description assumes the SoundPoint desktop and Business Media phone use the Dynamic Host Configuration Protocol (DHCP) to get an IP address and other network settings. The VVX phones should be configured to load the configuration file each time it resets or re-synchronizes. For more information on automated provisioning, see the *Polycom® UC Software Administrator's Guide* [1].

The capabilities of the VVX phones have been verified for use with BroadWorks based on the settings described in the following table. For more information on the meaning, purposes, and applicability of the individual configuration items, see the *Polycom® UC Software Administrator's Guide* [1].

Configuration Files

Files Provided by Partner	Level	Description
sip.ld.	System	This contains the device firmware application binary.
sys.cfg	System	This contains configurable parameters in XML format. The parameters in this file are application-specific to SIP. It includes items such as proxy, register, outbound proxy, and dial plan.
phone<BWMACADDRESS>.cfg	Subscriber	This contains configurable parameters in XML format. These parameters are unique to a particular subscriber's phone. Typical parameters include the SIP registration address of record and the SIP authentication user and password. This file must be given a device specific name. It is recommended to incorporate the device's MAC address. Example: phonejcvvx.cfg
<MAC Address>.cfg	Subscriber	This is the default master configuration file for the phone. The file must be renamed with the MAC address for the individual device (for example, 0004f200059e.cfg). **NOTE**: The hex characters must be in lowercase. The master configuration file for the phone identifies the file names for the application firmware, the system level, and the phone-specific configuration files. The listed order of the configuration files is significant. The files are processed in the order listed (from left to right).

4.1 System Level Configuration

This section describes system-wide configuration items that are generally required for each SoundPoint desktop phone to work with BroadWorks. Subscriber-specific settings are described in the next section.

Step	Command	Purpose
System Configuration File sys.cfg		

Step 1	Enter the SIP proxy FQDN.
	Example:
	`voIpProt.server.1.address = "as.mycompany.com"`
	`voIpProt.server.1.port=""`
		Set the SIP server to the Fully Qualified Domain Name (FQDN) of the BroadWorks Application Server cluster.
		This FQDN must match the domain configured for the BroadWorks subscriber's line/port domain.

Step 2	Enter the Preferred Transport Type. Example: `voIpProt.server.1.transport="TCPpreferred"`	Set the Transport Protocol Type to "TCP". This is the suggested protocol to use, and prior to version 3.0.0, is required if using Busy Lamp Field (BLF).

Step 3	Enter the Outbound Proxy.
	Example:
	`voIpProt.SIP.outboundProxy.address = "sbc.broadworks.com"`
	`voIpProt.SIP.outboundProxy.port = ""`
		Set the Outbound Proxy to the Session Border Controller (SBC) if one is deployed between Polycom and BroadWorks.
		If there are redundant SBCs, set it to the FQDN for the SBC cluster.

Step 4	Configure the dial plan.
	Example:
	`<dialplan>`
	`dialplan.digitmap="[2346789]11|[0-1]`
	`[2-9]11|0[#T]|00|01`
	`[2-9]xx.[#T]|*xx| #xx | 011x.[#T]|`
	`[0-1]xxxxxxx[#T]|[0-1]`
	`[2-9]xxxxxxxxx|`
	`[2-9]xxxxxxxxx|`
	`[2-9]xxxxxx[#T]|101xxxx.[#T]|11|[2-9]x.[#T]"`
		Configure the dial plan as necessary for the deployment or locale.
		The dial plan is configured as a string compatible with the MGCP-style Digit Maps described in *RFC 3435*.
		When using BroadWorks Speed Dial 100 feature, include the necessary digit map pattern. The default pattern is "#xx".

Step 5	Configure the timeout for dialed digits.
	`<dialplan>`
	`dialplan.digitmap.timeOut="3"`
		This is the timeout (in seconds) for the "T" feature of the digit map.
		Make sure it is set to the default, which is "3".

Step	Command	Purpose
System Configuration File sys.cfg		

Step 6	Configure the alert header information for distinctive ring/call waiting.
	Example:
	`<alertInfo`
	`voIpProt.SIP.alertInfo.1.value="http://127.0.0.1/Bellcore-dr2"`
	`voIpProt.SIP.alertInfo.1.class="custom1"`
	`voIpProt.SIP.alertInfo.2.value="http://127.0.0.1/Bellcore-dr3"`
	`voIpProt.SIP.alertInfo.2.class="custom2"`
	`voIpProt.SIP.alertInfo.3.value="http://127.0.0.1/Bellcore-dr4"`
	`voIpProt.SIP.alertInfo.3.class="custom3"`
	`voIpProt.SIP.alertInfo.4.value="http://127.0.0.1/Bellcore-dr5"`
	`voIpProt.SIP.alertInfo.4.class="custom1"`
		Configure the alert header information to enable distinctive alerting (priority alerting, alternate numbers).
		The *alertInfo.X.value* field must not be NULL. Do not set *voIpProt.SIP.alertInfo.X.value*="".
		BroadWorks uses specific Bellcore settings for the following features:
		Priority Alerting:
		http://127.0.0.1/Bellcore-dr2
		Alternate Numbers:
		http://127.0.0.1/Bellcore-dr3
		http://127.0.0.1/Bellcore-dr4
		Ring Splash:
		http://127.0.0.1/Bellcore-dr5

Step 7	Enable Advanced Call Control.
	`<alertInfo`
	`Add Auto-Answer:`
	`voIpProt.SIP.alertInfo.5.value="auto-answer"`
	`voIpProt.SIP.alertInfo.5.class="autoAnswer"`
		Configure the *Auto-Answer alert* header to enable BroadWorks Advanced Call Control features via the BroadWorks Call Manager (Click to Answer, Click to Dial).

Step 8	Configure Register.
	`<server`
	`voIpProt.server.1.expires="7200"`
	`voIpProt.server.1.register="1"`
		Configure the register and set the expiration to "7200" seconds, which is recommended.

Step 9	Enable phone so that it always restarts on checkSync. `<specialEvent voIpProt.SIP.specialEvent.checkSync.alwaysReboot="1"`	Enable the phone so that it always restarts when the BroadWorks device reset button is selected.
Step 10	Enable *RFC 3264* Hold. `<SIP voIpProt.SIP.useRFC2543hold="0" voIpProt.SIP.useSendOnlyHold="1"`	Enable the phone to use *RFC 3264* Hold (default) and to send "sendOnly" in the hold SDP rather than "inactive".
Step 11	Enable Authentication Optimization. `<SIP voIpProt.SIP.authOptimizedInFailover ="1"`	Enable the phone, in failover conditions, to send INVITEs with Authentication credentials to the same Application Server that responded with the 401 challenge.

Step	Command	Purpose
System Configuration File sys.cfg		
Step 12	(Optional) Configure Network-managed Conferencing URI. `<conference voIpProt.SIP.conference.address="conference@mycompany.com"/>`	(Optional) Configure the conferencing unit to allow network-based conferences to be established from the Polycom device for Three-Way Calling.
Step 13	(Optional) Enable transfer while ringing. `<SIP voIpProt.SIP.allowTransferOnProceeding ="1"`	(Optional) Enable the transfer of calls while the transfer-to party is ringing.
Step 14	(Optional) Enable device authentication of SIP requests from BroadWorks. Example: `<requestValidation voIpProt.SIP.requestValidation.1.request="INVITE" voIpProt.SIP.requestValidation.1.method="digest" voIpProt.SIP.requestValidation.digest.realm="as.mycompany.com"`	(Optional) Configure the device to challenge SIP requests from BroadWorks. The configuration parameters identify, which SIP requests are challenged by the phone using digest authentication. The registered authentication credentials (user/password) are used for the challenge.
Step 15	(Optional) Set SIP Session Timer Example: `voIpProt.SIP.keepalive.sessionTimers="1"`	To enable the session timer, set it to "1". If it is set to "0", then the session timer is disabled, and the phone does not declare the "timer" in the *Support* header in the INVITE. Note that the phone still responds to a re-INVITE or UPDATE. However, the phone does not try to re-INVITE or do an UPDATE even if the remote end should make a request for it. The default value is "0".

4.1.1 Video Codec Support/Recommendation for VVX phones

The following VVX-supported video CODECs are recommended for interoperability with BroadWorks Video Services and other video-enabled access devices:

- H.264
- H.263

Polycom VVX500/600 Version 4.1.3	H.264	H.263
Polycom VVX 1500 v 4.0.1	OK	OK
Polycom HDX v3.0.3.14451	OK	OK
Polycom RMX 2000 v7.6.0.172	OK	OK
LifeSize Room v4.1.0(0)	The LifeSize was not able to display the incoming video from the VVX500/600.	The LifeSize was not able to display the incoming video from the VVX500/600.
Cisco E20 vTE4.1.0.269359	OK	OK
GrandStream GXV3000 v1.1.3.29	The GXV3000 does not resume the video after the GXV 300 performs a hold or resume. Otherwise, it is OK.	The GXV3000 does not resume the video after the GXV 300 performs a hold or resume. Otherwise, it is OK.
CounterPath Bria for BroadWorks v3.2.1 build 62388	OK	OK
BroadSoft BroadTouch Business Communicator UC-One v10.0.1.1787	OK	OK
Video Auto-Attendant	OK	OK
Video On Hold	OK	OK
Video Custom Ringback	This is not supported.	This is not supported.
Video Deposit/Retrieval	OK	OK

4.2 Subscriber Level Configuration

This section identifies the device-specific parameters, including registration and authentication. These settings must be unique across the devices to be matched with the settings for a BroadWorks subscriber.

Provisioning a subscriber to register with BroadWorks allows calls to terminate to the subscriber's line. Registration requires that a unique address of record (AoR) is provisioned on BroadWorks and the phone; provisioning an AoR on BroadWorks consists of setting the line/port parameter to a unique value in the Application Server cluster.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		
Step 1	Configure display name. Example: <reg> reg.1.displayName="Bob Smith" reg.2.displayName="Joe Brown"	The display name is used for the local user interface, as well as SIP signaling. Configure for each line ("reg.x") in use, where "x" is the line number.
Step 2	Configure the register user ID. Example: <reg> reg.1.address="2405551111" reg.2.address="2405552222"	The register address must match the line/port setting on BroadWorks. Configure for each line ("reg.x") in use, where "x" is the line number.
Step 3	Enable SIP authentication for each line. Example: <reg> reg.1.auth.userId="1111@as.mycompany.com" reg.1.auth.password="welcome" reg.2.auth.userId="2222@as.mycompany.com" reg.2.auth.password="welcome"	If the Authentication service is configured on BroadWorks, then these parameters must be configured to match the BroadWorks settings. Configure for each line ("reg.x") in use, where "x" is the line number.
Step 4	Configure the line label. Example: <reg> reg.1.label="1111" reg.2.label="2222"	The label is shown next to the line on the phone. Configure for each line ("reg.x") in use, where "x" is the line number.
Step 5	Set the line type. <reg> reg.1.type="private" reg.2.type="private"	Set the line type to "private" unless you are configuring the phone for Shared Call Appearance. See the following for Shared Call Appearance configuration requirements. Configure for each line ("reg.x") in use, where "x" is the line number.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		

Step 6	(Optional) Configure solicited MWI subscription.
	`Example:`
	`<msg msg.mwi.1.subscribe="2403330000">`
		If this is set to "non-Null", then the phone sends a SUBSCRIBE request to this contact after booting up.
		The default value is "Null".

4.2.1 Attendant Console Configuration

The Polycom VVX phone models can be expanded to support up to 16 registering lines. Configure lines 1 through 16 on the VVX phone models, (see the configuration instructions in section *4.2 Subscriber Level Configuration)*. The remaining soft buttons can be configured for speed dial or other functions, such as Push To Talk or transfer to another user's voice mailbox.

To add a Push To Talk key to the phone, perform the following steps:

1) Ensure the user is assigned the Push To Talk feature on BroadWorks.
2) Click the **Directories** button on the phone.
3) Select the *Contact* directory.
4) To add a new contact, click the **Add** button.
5) Enter the key label parameters. The key label uses the *First* and *Last Name* fields for the display. Enter the data you wish for this key.
6) In the *Contact* field, enter the Push To Talk feature access code (FAC) and the user directory number (DN) or extension to dial, that is, *501212.
7) Click the **Save** button to store the information.
8) After the speed dial entry has been added, click on the speed dial entry, and then click "Add To Favorites". The favorite entry is shown on the phone's idle screen.

NOTE: The remote phone must support the auto answer functionality.

To add a Voice Mail Transfer key, perform the following steps:

1) Click the **Directories** button on the phone.
2) Select the *Contact* directory.
3) To add a new contact, click the **Add** button.
4) Enter the key label parameters. The key label uses the *First* and *Last Name* fields for the display. Enter the data you want for this key.
5) In the *Contact* field, enter the direct transfer to voice mail FAC code and the user DN or extension to dial, that is, *551212.
6) Click the **Save** button to store the information.

To add a Speed Dial key, perform the following steps:

1) Click the **Directories** button on the phone.
2) Select the *Contact* directory.
3) To add a new contact, click the **Add** button.
4) Enter the key label parameters. The key label uses the *First* and *Last Name* fields for the display. Enter the data you want for this key.
5) In the *Contact* field, enter the user DN to dial.
6) Click the **Save** button to store the information.
7) After the speed dial entry has been added, click on the speed dial entry, and then click "Add To Favorites". The favorite entry is shown on the phone's idle screen.

4.3 Advanced SIP Features Configuration

This section provides configuration instructions for advanced SIP features supported by the phone including but not limited to Shared Call Appearance, Busy Lamp Field, Feature Key Synchronization, Call Center, and Emergency Call.

4.3.1 Shared Call Appearance Configuration

The Shared Call Appearance (SCA) feature allows the administrator to add multiple locations to a given line. Any of the locations can be used to originate or receive calls.

When a call comes in to an idle line, all the provisioned locations for that line are alerted. The first location to answer the call is connected to the originator. If the line is already active in a call, only the active location is alerted.

A subscriber can originate calls from any of the configured locations. All other locations are unable to originate calls until all calls are released.

It is recommended that the phone number plus an index (<phoneNumber>_<index>) is used when provisioning the unique address of record (AoR) for each shared line, for example: 2405551111_2. If the phone number does not exist, then the MAC address plus an index could be used (<macAddress>_<index>).

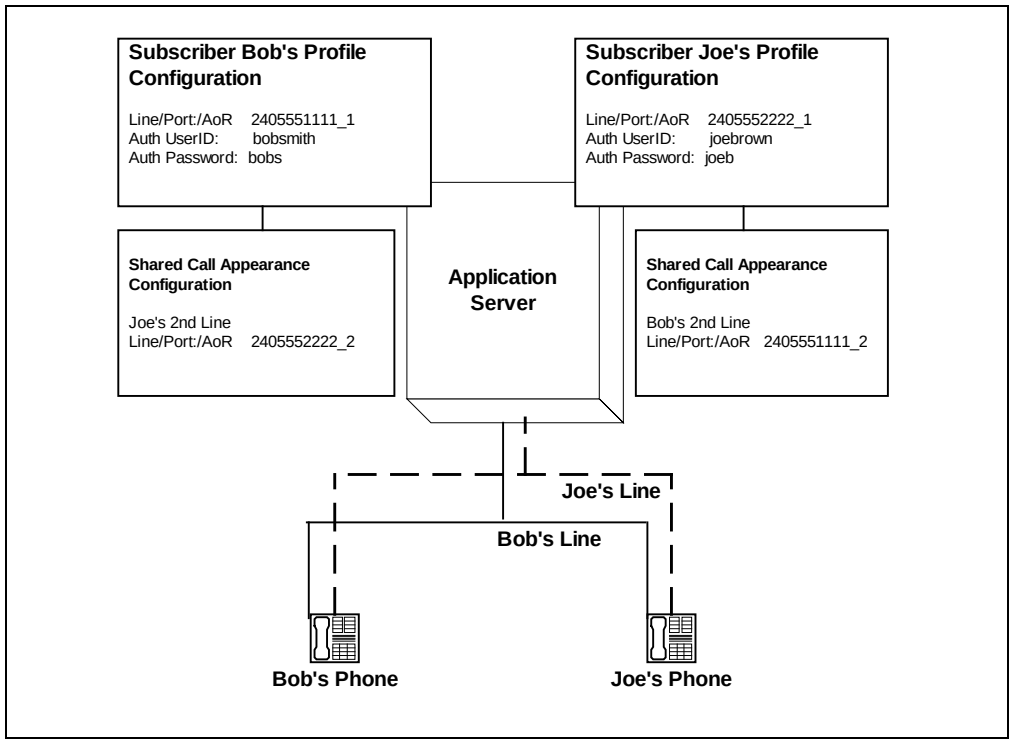

Figure 1 Shared Call Appearance Configuration

Figure 1 Shared Call Appearance Configuration shows that Bob and Joe each have two lines and that Bob shares a line with Joe and Joe shares a line with Bob. The figure also shows the applicable Subscriber Profile and Shared Call Appearance Configuration data for subscribers Bob and Joe.

When Bob is called (2405551111), Bob's first line will ring, and Joe's second line will ring. When Joe is called (2405552222), Joe's first line will ring and Bob's second line will ring.

The following steps show how to configure both phones for this Shared Call Appearance configuration.

4.3.1.1 Bob's Phone Configuration – phone<BWMACADDRESS>.cfg

The following steps are used to configure line 1 for Bob's phone. This line rings when Bob is called, so it has Bob's authentication information.

Step	Command	Purpose
Subscriber Configuration File (Bob's phone<BWMACADDRESS>.cfg)		
Step 1	Enable shared line. `reg.1.type="shared"`	Configure the line as "shared" (as opposed to "private").
Step 2	Configure the phone label. Example: `reg.1.label="Bob"`	The label is displayed on the phone next to the line key.

Step	Command	Purpose
Subscriber Configuration File (Bob's phone<BWMACADDRESS>.cfg)		
Step 3	Configure the register user ID. Example: `reg.1.address="2405551111_1"`	This is the register user ID, which is used to register Bob's line 1 with BroadWorks. This should match Bob's *line/port* field on the *Subscriber Profile* page.

Step 4	Enable SIP Authentication for the line.
	Example:
	`reg.1.auth.userid="bobsmith"`
	`reg.1.auth.password="bobs"`
		If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings.
		This line rings when Bob is called, and so it has Bob's Authentication information.

Step 5	(Optional) Enable Barge-In. `reg.1.bargeInEnabled="1"`	(Optional) Enable the line for barge-in attempts on active SCA calls.

The following steps are used to configure line 2 for Bob's phone. This line rings when Joe is called, and so it has Joe's authentication information.

Step	Command	Purpose
Subscriber Configuration File (Bob's phone<BWMACADDRESS>.cfg)		
Step 1	Enable shared line. `reg.2.type="shared"`	This is a shared line, and so the type is set to "shared".
Step 2	Configure the phone label. Example: `reg.1.label="Joe"`	The label is displayed on the phone next to the line key.
Step 3	Configure the register user ID. Example: `reg.1.address="2405551111_2"`	This is the register user ID, which is used to register Bob's line 2 with BroadWorks. This should match the SCA *line/port* field on Joe's *Shared Call Appearance* page.

Step 4	Enable SIP Authentication for the line.
	Example:
	`reg.1.auth.userid="joebrown"`
	`reg.1.auth.password="joeb"`
		If the Authentication service is configured on BroadWorks, then these parameters must be configured to match the BroadWorks settings.
		This line rings when Joe is called, and so it has Joe's Authentication information.

Step 5	(Optional) Enable Barge-In. `reg.1.bargeInEnabled="1"`	(Optional) Enable the line for barge-in attempts on active SCA calls.

4.3.1.2 Joe's Phone Configuration – phone<BWMACADDRESS>.cfg

The following steps are used to configure line 1 for Joe's phone. This line rings when Joe is called, so it has Joe's authentication information.

Step	Command	Purpose
Subscriber Configuration File (Joe's phone<BWMACADDRESS>.cfg)		
Step 1	Enable shared line. `reg.1.type="shared"`	This is a shared line, and so the type is set to "shared".
Step 2	Configure the phone label. Example: `reg.1.label="Joe"`	The label is displayed on the phone next to the line key.
Step 3	Configure the register user ID. Example: `reg.1.address="2405552222_1"`	This is the register user ID, which is used to register Joe's line 1 with BroadWorks. This should match Joe's line/port field on the *Subscriber Profile* page.

Step 4	Enable SIP Authentication for the line.
	Example:
	`reg.1.auth.userid="joebrown"`
	`reg.1.auth.password="joeb"`
		If the Authentication service is configured on BroadWorks, then these parameters must be configured to match the BroadWorks settings.
		This line rings when Joe is called, and so it has Joe's authentication information.

Step 5	(Optional) Enable Barge-In. `reg.1.bargeInEnabled="1"`	(Optional) Enable the line for barge-in attempts on active SCA calls.

The following steps are used to configure line 2 for Joe's phone. This line rings when Bob is called, so it has Bob's authentication information.

Step	Command	Purpose
Subscriber Configuration File (Joe's phone<BWMACADDRESS>.cfg)		
Step 1	Enable shared line. `reg.2.type="shared"`	This is a shared line, and so the type is set to "shared".

Step 2	Configure the phone label.
	`Example:`
	`reg.1.label="Bob"`
		The label is displayed on the phone next to the line key.

Step 3	Configure the register user ID. Example: `reg.1.address="2405552222_2"`	This is the register user ID, which is used to register Joe's line 2 with BroadWorks. This should match the SCA *line/port* field on Bob's *Shared Call Appearance* page.

Step	Command	Purpose
Subscriber Configuration File (Joe's phone<BWMACADDRESS>.cfg)		

Step 4	Enable SIP Authentication for the line.
	Example:
	`reg.1.auth.userid="bobsmith"`
	`reg.1.auth.password="bobs"`
		If the Authentication service is configured on BroadWorks, then these parameters must be configured to match the BroadWorks settings.
		This line rings when Bob is called, and so it has Bob's authentication information.

Step 5	(Optional) Enable Barge-In. `reg.1.bargeInEnabled="1"`	(Optional) Enable the line for barge-in attempts on active SCA calls.

4.3.2 Busy Lamp Field Configuration

The Busy Lamp Field (BLF) feature allows the VVX phones to monitor the call state for one or more BroadWorks users (who are configured in the same BroadWorks group as the Polycom desktop phone).

The VVX phone sends a SIP SUBSCRIBE message to the Application Server indicating which BLF list it wants to monitor. After the Application Server completes sending the SIP NOTIFY message that includes all of the BroadWorks users who are members of the BLF list to which the VVX phone is subscribed, the Application Server then sends call state change SIP NOTIFY messages every time a BroadWorks user who is part of the BLF list changes their call state.

For more information on BLF enhancements, see Polycom's Knowledgebase *Quick Tip 37381* at http://www.polycom.com/usa/en/support/voice/soundpoint_ip/VoIP_Technical_Bulletins_pub.html.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		
Step 1	Configure the BLF URI to which the Polycom VVX phone subscribes. `<attendant attendant.uri="8080blf@as.mycompany.com " attendant.reg=""/>`	This configures the Polycom VVX phone to subscribe to a Busy Lamp Field list, which allows the status of each BroadWorks user, who is part of the BLF list, to be monitored from this Polycom UCS phone.
Step 2	(Optional) BLF through TCP protocol override configuration. Append ";transport=TCP" to the BLF URI from "Step 1" to override the BLF network protocol. `<attendant attendant.uri="8080blf@as.mycompany.com;transport=TCP" attendant.reg=""/>`	While maintaining the general transport protocol of the SIP signaling from a Polycom UCS phone to BroadWorks, this alteration forces the Polycom UCS phone to use TCP as the transport protocol to perform BLF signaling.

4.3.3 Feature Key Synchronization

Feature Key Synchronization provides synchronization of phone services such as *Call Forwarding* and *Do Not Disturb* with the settings on BroadWorks for the analogous services. Configuration of the phone to enable Feature Key Synchronization is described as follows.

To enable feature key synchronization for Do Not Disturb, Call Forwarding Always, Call Forwarding Busy, and Call Forwarding No Answer, follow the steps in the following table. The Do Not Disturb or Call Forwarding can only be enabled on private lines. They are not supported on shared lines.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		

Step 1	Configure the Feature Key Synchronization for the Polycom SoundPoint.
	`voIpProt.SIP.serverFeatureControl.dnd="1"`
	`voIpProt.SIP.serverFeatureControl.cf="1"`
		This enables the Polycom VVX phone to synchronize feature status with the BroadWorks Application Server.
		After successful registration, the Polycom SoundPoint desktop phone sends an empty body SUBSCRIBE message with the *Event* header, *as-feature-key*.

Step 2	Disable the local message processing associated with Feature Key Synchronization.
	`reg.1.serverFeatureControl.localProcessing.dnd=”0”`
	`reg.1.serverFeatureControl.localProcessing.cf=”0”`
		This disables local message processing on the phone such that the phone would not send a response code for incoming messages to invoke splash tones.
		The default value is “1”.

4.3.4 Call Center Feature Configuration

This section provides configuration instructions to configure the phone to enable integration with BroadWorks Call Center features including, but not limited to, call information, hoteling, status, and disposition codes.

To enable BroadWorks Call Center feature is supported through Polycom’s Automatic Call Distribution (ACD), follow the steps in the following tables. ACD can only be configured on private lines. It is not supported on shared lines.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		
Step 1	Set ACD signaling method. `voIpProt.SIP.acd.signalingMethod=”1”`	The Polycom phone supports two methods for ACD functionality. For interoperability with BroadWorks, set the method to “1”.
Step 2	Enable ACD Login/Logout. `feature.acdLoginLogout.enabled=”1”`	The ACD sign-in/sign-out must be enabled for basic and premium ACD feature synchronization.
Step 3	Enable ACD Agent availability. `feature.acdAgentAvailability.enabled=”1”`	The ACD agent availability status must be enabled for basic and premium ACD feature synchronization.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		
Step 4	Enable ACD service controller URI. `feature.acdServiceControllerUri.enabled="1"`	The ACD service controller URI must be enabled for basic and premium ACD feature synchronization.
Step 5	Enable enhanced feature keys. `feature.enhancedFeatureKeys.enabled="1"`	The enhanced feature keys must be enabled for premium ACD feature synchronization.

Step 6	Set ACD registration line.
	`acd.reg=<reg index>`
	Example:
	`acd.reg="1"`
		This identifies the registration index to be used for ACD feature synchronization.
		If null, the default is "1".

Step 7	Set sign-in state. `acd.stateAtSignIn="1"`	This identifies the user's sign-in state, where: "1" – The sign-in state is *Available*. "0" – The sign-in state is *Unavailable*.

Step 8	Enable unavailable reason code.
	`acd.x.unavailreason.active=1`
	Examples:
	`acd.1.unavailreason.active=1`
	`acd.2.unavailreason.active=2`
		This enables the individual *unavailable* reason codes for premium ACD.

Step 9	Configure unavailable reason codes.
	`acd.x.unavailreason.codeValue=<string>`
	`acd.x.unavailreason.codeName=<string>`
	Examples:
	`acd.1.unavailreason.codeValue="10001"`
	`acd.1.unavailreason.codeName="Out to Lunch"`
	`acd.2.unavailreason.codeValue="10002"`
	`acd.2.unavailreason.codeName="On the Phone"`
		This sets the numeric and text values for the *unavailable* reason codes.

Step 10	Enable the Hoteling feature. `feature.hoteling.enble="1"`	This identifies the enablement of the hoteling feature, where: "1" – The hoteling feature is *Enabled*. "0" – The hoteling feature is *Disabled*.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		

Step 11	Define the line registration index.
	`hoteling.reg="<line index>"`
	Example:
	`hoteling.reg="1"`
		If ACD is disabled, the phone uses this line registration index for Hoteling.
		If ACD is enabled, this value must be the same as the ACD line registration index.

4.4 Xtended Services Interface Feature Configuration

This section provides configuration instructions for configuration of Xtended Services Interface (Xsi) features supported by the phone, including but not limited to, BroadWorks Directory and BroadWorks Call Logs.

The Xtended Services Interface feature is supported only on the VVX 500 or VVX 600 phone models.

4.4.1 BroadWorks User Service Configuration

Integration with the BroadWorks Xtended Services Interface for User Service Configuration enables the phone to display and configure BroadWorks user services such as Remote Office, BroadWorks Anywhere, Call Forwarding, and Simultaneous Ring.

This feature is not supported by the VVX devices.

4.4.2 BroadWorks Enterprise Directory

The BroadWorks Enterprise Directory service makes access to the enterprise directory associated with a user account through the BroadWorks Xtended Services Interface. Using this service means that the user's credentials must be provisioned on the Xtended Services Interface. The format for the web link for the BroadWorks Enterprise Directory service is as follows: *http(s)://<XSP hostaddress:port>/com.broadsoft.xsi-actions/v2.0/user/<userid>/directories/enterprise*.

It can only be enabled on one line (user account) for each supported VVX device. To enable the BroadWorks Enterprise Directory service on the phone, perform the steps in the following table.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		
Step 1	Enable the BroadWorks Enterprise Directory. `feature.broadsoftdir.enabled="1">`	This toggles the BroadWorks Enterprise Directory service, where: "1" – Enabled "0" – Disabled **NOTE:** This requires Polycom release version 4.1.3G or higher.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		

Step 2	Provision the Xtended Services Platform host address.
	`dir.broadsoft.xsp.address=http://<XSP_ADDRESS>:<XSP_PORT>/`
	Example:
	`dir.broadsoft.xsp.address=http://xsp1.iop1.broadworks.net:80/`
		Provide the Xtended Services Platform (Xsp) server address.

Step 3	Provision the Xtended Services Platform user name and password.
	`dir.broadsoft.xsp.username="%XSPUSER%"`
	`dir.broadsoft.xsp.password="%XSPPASS%"`
	Example:
	`dir.broadsoft.xsp.username="jc-vvx500-2@as.iop1.broadworks.net"`
	`dir.broadsoft.xsp.password="abcdef"`
		Provide the user account information, which is used to perform Xtended Services Interface (Xsi) authentication.

4.4.3 BroadWorks Call Logs Configuration

Integration with the BroadWorks Xtended Services Interface for Call Logs enables the phone to get call log history (missed, placed, and received calls) from BroadWorks and make them available to a user via the phone menus.

This feature is not supported by the VVX devices.

4.5 Instant Message and Presence Configuration

This section provides configuration instructions for configuration of the phone for integration with BroadCloud Instant Message and Presence.

This feature makes access to the Instant Messaging and Presence (IM&P) directory associated with a user account using the Extensible Messaging and Presence Protocol (XMPP). Hence, using this service means the user has to be provisioned with the Integrated IM&P service. Further, it can only be enabled on one line (user account) for each supported VVX device.

The XMPP feature is supported only on the VVX 500 or VVX 600 phone models.

To enable the BroadCloud IM&P integration feature on the phone, follow the steps in the following table.

Step	Command	Purpose
Subscriber Configuration File (phone<BWMACADDRESS>.cfg)		

Step 1	Enable the UC-One integration.
	`feature.broadsoftUcOne.enabled="1"`
	Enable QML application.
	`feature.qml.enabled="1"`
	Enable optional UC-One integration presence support.
	`feature.presence.enabled="1"`
		To toggle the UC-One Integration feature:
		"1" – Enabled
		"0" – Disabled
		Note that this requires Polycom release version 4.1.3G or higher.

Step 2	Enable the XMPP support. `xmpp.1.enable="1"`	To toggle the XMPP protocol support: "1" – Enabled "0" – Disabled
Step 3	Provision the XMPP server address. `xmpp.1.server="%BW_IMP_SERVICE_NET_ADDRESS-1%"`	Provide the XMPP server information.

Step 4	Provision the XMPP authentication domain, user name, and password.
	`xmpp.1.auth.domain="<IMP_SERVICE_NET_ADDRESS>"`
	`xmpp.1.jid="<username>"`
	`xmpp.1.auth.password="<password>"`
		Provide the XMPP authentication information.

Step 5	Set the dial method of XMPP to SIP.
	`xmpp.1.dialMethod="sip"`
	Turn on the BroadSoft XMPP inviter's subscription for presence.
	`xmpp.1.roster.invite.accept="prompt"`
	`xmpp.1.roster.invite.addMethod="h350Person"`
	Set to toggle for the TLS certificate verification on the VVX device:
	`xmpp.1.verifyCert="0"`
		Perform the remaining configuration.

5 Device Management

The BroadWorks Device Management feature provides the capability to automate generation of device configuration files to support mass deployment of devices. This section identifies the Device Management capabilities supported by the VVX devices running the Polycom UC Software and the configuration steps required. For Device Management configuration details not covered in this guide, see the *BroadWorks Device Management Configuration Guide* [2].

The basic steps to integrate a device with Device Management are as follows:

1) Create device template files for the device with the appropriate BroadWorks Device Management tags.
2) Define custom and system tags and add them to the device template files. Note that these custom and system tags must also be defined on BroadWorks.
3) Create a device profile type on BroadWorks for each device model to be integrated with Device Management.
4) Add the device template files and other associated files to the device profile type.
5) Create a device profile instance of the device profile type and assign it to a user. A user name and password are assigned to this device profile.
6) The end device is configured with the Device Management URL for device files, as well as the user name and password access credentials.

This section describes the steps to integrate the Polycom UC Software products.

As part of the Polycom UC Software VVX Customer Premises Equipment (CPE) kit, BroadSoft has defined a standard device configuration in the device template files that service providers can use on their systems. These files can be uploaded directly to Device Management without modification. However, the service provider also has the option to modify these template files as required to fit their deployment needs.

The CPE kit also includes tools to help automate the integration effort. For releases after Release 17.0, there is a Device Management import/export utility. The CPE kit contains Device Type Archive Files (DTAF), which can be used to import the device type and template files.

5.1 Device Management Capabilities Supported

The Polycom UC Software VVX phones have completed Device Management interoperability testing with BroadWorks using the *BroadWorks Device Management Interoperability Test Plan* [5]. The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas. Each package is composed of one or more test items, which in turn are composed of one or more test cases. The test plan exercises the Device Management interface between the device and BroadWorks with the intent to ensure interoperability.

The *Supported* column in the following table identifies the Polycom UC Software VVX phones support for each of the items covered in the test plan packages, with the following designations:

- Yes Test item is supported
- No Test item is not supported
- NA Test item is not applicable
- NT Test item was not tested

Caveats or clarifications are identified in the *Comments* column.

Note that *DUT* in the following table refers to the *Device Under Test,* which in this case are devices running Polycom UC Software.

BroadWorks Device Management Interoperability Test Plan Support Table

Test Plan Package	Test Plan Package Items	Supported	Comments
HTTP File Download	HTTP Download Using Xsp IP Address	Yes	
	HTTP Download Using Xsp FQDN	Yes	
	HTTP Download Using Xsp Cluster FQDN	Yes	
	HTTP Download With Double Slash	Yes	
HTTPS File Download	HTTPS Download Using Xsp IP Address	Yes	
	HTTPS Download Using Xsp FQDN	Yes	
	HTTPS Download Using Xsp Cluster FQDN	Yes	
File Inspection	Inspect System Config File	Yes	
	Inspect Device-Specific Config File	Yes	
	Inspect Other Config Files	Yes	
	Inspect Static Files	Yes	
Device Inspection	Inspect SIP Settings	Yes	
	Inspect Line Settings	Yes	
	Inspect Service Settings	Yes	
HTTP File Upload	HTTP Upload Using Xsp IP Address	Yes	
	HTTP Upload Using Xsp FQDN	Yes	

BroadWorks Device Management Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	HTTP Upload Using Xsp Cluster FQDN	Yes	
Call Processing Sanity Tests	Register with Authentication	Yes	
	Call Origination	Yes	
	Call Termination	Yes	
	Remote Restart	Yes	
	Shared Line Origination	Yes	
	Shared Line Termination	Yes	
	Shared Line Status	Yes	
	Busy Lamp Field	Yes	

5.2 Device Management Configuration

This section identifies the steps required to enable VVX devices running Polycom UC Software for Device Management. For Device Management configuration details not covered in this guide, see the *BroadWorks Device Management Configuration Guide* [2].

Device Management configuration is performed using the steps described in the following subsections:

5.2.1 Configure BroadWorks Tags

The template files in Device Management use tags to represent the data stored on BroadWorks. When a configuration changes for a user, Device Management parses the template files and replaces the Device Management tags with the associated data stored on BroadWorks. Default tags are defined in the Device Management software and there are custom tags that a service provider can create and define via the web portal for use by Device Management. Two types of custom tags can be defined:

- System default – These tags are common to all phones on the system.
- Device type-specific – These tags are only common to <partner name> phone models.

VVX devices running Polycom UC Software make use of dynamic tags, which can be configured by a BroadWorks administrator as system default or device-type-specific tags. This section identifies the required tags.

5.2.1.1 Create System Default Tags

Browse to *System →Resources → Device Management Tag Sets* and select the *System Default* tag set. Polycom configuration templates make use of the tags in the following table. Add the tags if they do not already exist.

The Polycom system configuration file also uses the *%BWASCLUSTERFQDN%,* which is a pre-defined tag. For this tag to resolve properly, make sure that the following command line interface (CLI) parameter is set to the Application Server cluster address as follows:

```
AS_CLI/System/Device/IpDeviceMgmt> set deviceAccessAppServerClusterName
<AS-Cluster-FQDN>
```

Tag Name	Valid Settings	Description
%SNTP_SERVER%	IP address or FQDN	This is the NTP server address.
%DNS_SERVER_1%	IP address	This is the DNS server address.
%DNS_SERVER_2%	IP address	This is the alternate DNS server address.
%SBC_ADDRESS%	IP address or FQDN	This is the SBC SIP address.
%SBC_PORT%	Port	This is the SBC SIP port. If the defined SBC address is an IP address, then the port should be set. If the SBC address is an FQDN, then the SBC port should not be set.
%XSP_ADDRESS_XSI_ ACTIONS%	IP address or FQDN Example: xsp1.iop1.broadworks.net	This is the BroadWorks Xtended Services Platform (Xsp) server address, which provides the Xsi-Actions web services.

Example system default tag settings:

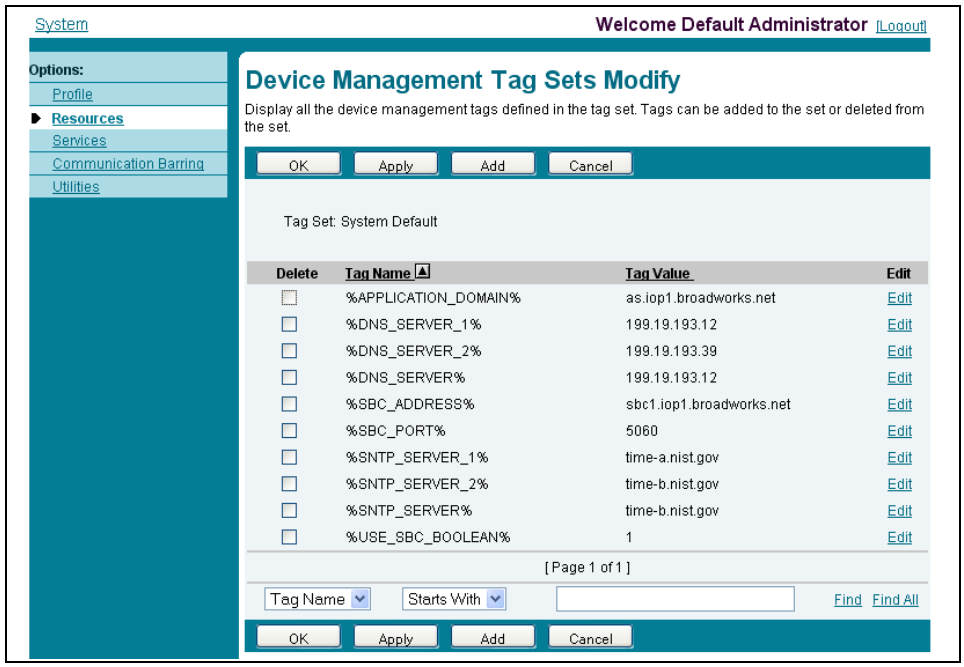

Figure 2 System Default Tag Settings

5.2.1.2 Create Device Type Specific Tags

Browse to *System → Resources → Device Management Tag Sets* and select *Add* to add a new tag set. Configure the tag set name as *Polycom-Tags*. Add the device type specific tags in the following table to the device tag set. If the tag set already exists, make sure that the tags in the following table have been defined.

Tag Name	Valid Settings	Description
%SBC_TRANSPORT%	DNSnaptr, TCPpreferred, UDPOnly, TCPOnly, or TLS	Set this to the transport that the phone uses when communicating with the SBC.
%DIAL_PLAN%	[2346789]11|[0-1][2-9]11|0[#T]|00|01[2-9]xx.[#T]|*xx|011x.[#T]|[0-1]xxxxxxx[#T]|[0-1][2-9]xxxxxxxxx|[2-9]xxxxxxxxx|[2-9]xxxxxx[#T]|101xxxx.[#T]|11|[2-9]x.[#T]	This is the default dial plan for U.S. dialing on the Polycom phones.
%APP_VERSION%	4.0.1	This is set to the currently supported version of Polycom firmware.
%APP_VERSION_VVX-300-400%	4.1.4	This is set to the latest supported version of Polycom firmware for VVX300/310 and VVX400/410 phones.
%APP_VERSION_VVX-500-600%	4.1.3	This is set to the latest supported version of Polycom firmware for VVX500 and VVX600 phones.
%FEATURE_SYNC_DND%	1 or 0	Setting this value to “1” activates the Do Not Disturb synchronization feature with BroadWorks for all Polycom phones on the system.
%FEATURE_SYNC_CF%	1 or 0	Setting this value to “1” activates the Call Forwarding synchronization feature with BroadWorks for all Polycom phones on the system.
%FEATURE_SYNC_ACD%	1 or 0	Setting this value to “1” activates the ACD synchronization feature with BroadWorks for all Polycom phones on the system.
%ACD_LINE%	1 through 12	This is the register line index of the line, which synchronizes the ACD state with BroadWorks. By default, this should be the primary line or line 1.
%ACD_SIGNIN_STATE%	1 or 0	When set to “1”, the sign-in state is set to *Available*. When set to “0”, the sign-in state is set to *Unavailable*.
%VIDEO_QUALITY%	Motion or sharpness	This is the motion or sharpness. Set to “motion” for use with people or moving video. Set to “sharpness” for use with static video.
%VIDEO_CALL_RATE%	128 through 1024	Set to the maximum bandwidth to be used by a call. The recommended setting is “448” Kbps.
%VIDEO_SCREEN_MODE%	1 or 0	Set this to “1” so that the video fills the entire VVX screen.

Tag Name	Valid Settings	Description
%VIDEO_LOCAL_MODE%	null or pip	Set this to “pip” for the local camera view to be displayed as a picture-in-picture with the far-end camera view. Otherwise, leave this blank for the local camera view to appear side by side with the far-end camera view.
%VIDEO_FRAME_RATE%	5 through 30	This determines the smoothness of the video. The higher the number then the smoother the video. The recommended value is “25”.
%FEATURE_BW_DIR%	1 or 0	Set to “1” to activate the BroadWorks Enterprise Directory service. **NOTE**: This is only on VVX 500/600 models and it requires the 4.1.3G or later firmware revision.
%FEATURE_BW_UC_ONE%	1 or 0	Set to “1” to enable UC-One integration. **NOTE**: This is only on VVX 500/600 models and it requires the 4.1.3G or later firmware revision.
%FEATURE_CALL_CENTER%	1 or 0	Set to “1” to enable the Call Center feature.
%FEATURE_PRESENCE%	1 or 0	Set to “1” to enable the UC-One integration presence feature. **NOTE**: This is only on VVX 500/600 models and it requires the 4.1.3G or later firmware revision.
%XSPUSER%	Leave this empty. This field is overwritten at the device profile level as described in section *5.2.4.2 Provide Individual Xtended Services Interface Credentials for BroadWorks Enterprise Directory Service*.	Provide the values required to identify the user for the BroadWorks Xtended Services Interface web service.
%XSPPASS%	Leave this empty. This field is overwritten at the device profile level as described in section *5.2.4.2 Provide Individual Xtended Services Interface Credentials for BroadWorks Enterprise Directory Service*.	Provide the values required to authenticate for the BroadWorks Xtended Services Interface web service.

Example device-type-specific tag settings:

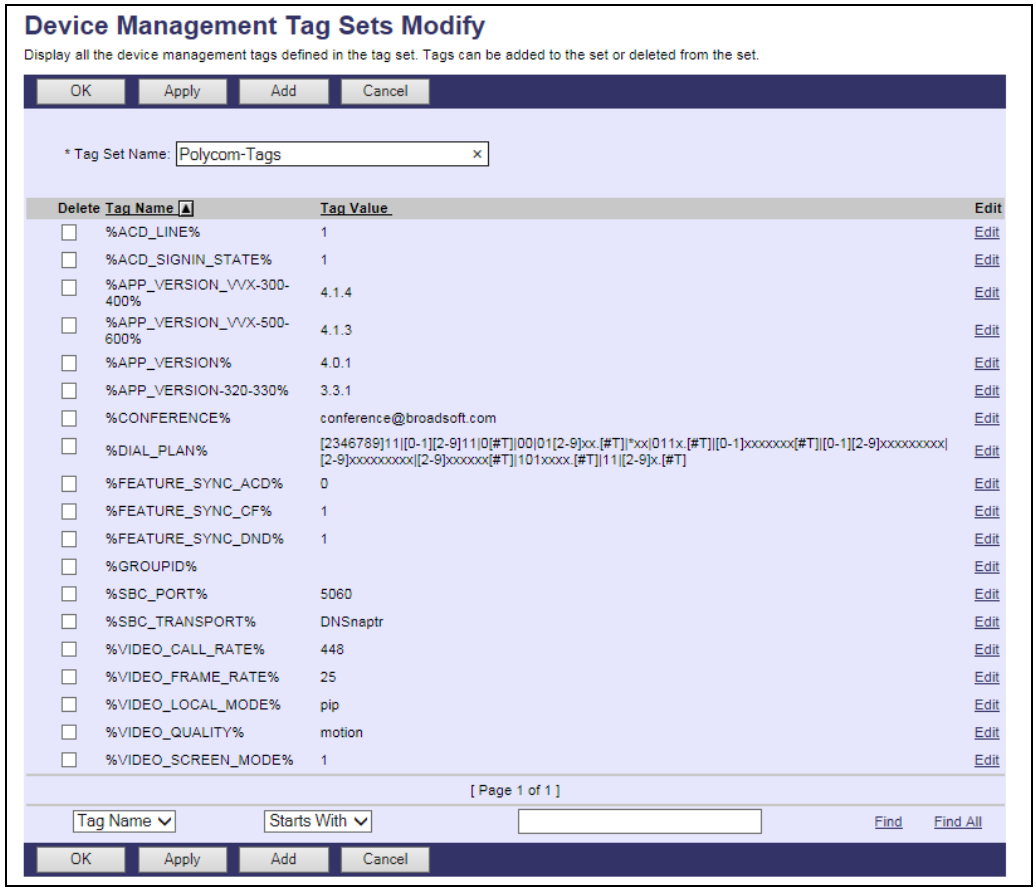

Figure 3 Device-Type-Specific Tag Settings

5.2.2 Configure BroadWorks Device Profile Type

The device profile type is a system-level structure that defines how the device interfaces with BroadWorks. It also identifies the default configuration files and other files, such as firmware, which are required for the phone to operate correctly. The device profile type is created by the system administrator. Group administrators use the device profile type to create a device profile. The device profile is an instance of the device profile type that is associated with a physical device or IP phone.

There are two BroadWorks device profile configuration methods described: import and manual. The import method takes a DTAF as input and builds the BroadWorks device profile type(s) automatically. The manual method takes the administrator through the steps to manually add and configure the device profile type(s).

The import method should be used if all of the following prerequisites are met:

- The BroadWorks Release is 17.0 or later.
- The device profile type(s) being imported do not already exist on the system. (If either a previous import or manual configuration was done, the import fails.)
- There is a DTAF file available for import with a BroadWorks release level that is the same as or prior to the release to which it is being imported. If the DTAF file is at a release level later than the release being imported to, the import may fail.

Otherwise, the manual method must be used.

5.2.2.1 Configuration Method 1: Import

This section identifies the steps necessary to make use of the Device Management import feature to configure BroadWorks to add the Polycom VVX phone as a Device Management-enabled device type.

The import method is available in BroadWorks Release 17.0 and later. For previous releases, use the manual configuration method described in the next section.

Download the Polycom UC Software device VVX CPE kit from BroadSoft Xchange at www.broadsoft.com/xchange. Extract the DTAF file(s) from the CPE kit. These are the import files. Repeat the following steps for each model you want to import.

Log in to BroadWorks as an administrator. Browse to *System* → *Resources* → *Identity/Device Profile Types* and select *Import*. Select *Browse* to find the extracted DTAF file for the model and click **OK** to start the import.

After the import finishes, the following post-import configuration steps must be completed.

Browse to *System* → *Resources* → *Identity/Device Profile Types* and perform a search to find the imported Polycom device profile type (for example, *Polycom_VVX500*). Browse to the *Profile* page and change the Device Management Device Access FQDN to your Xtended Services Platform or Xtended Services Platform cluster address.

Example:

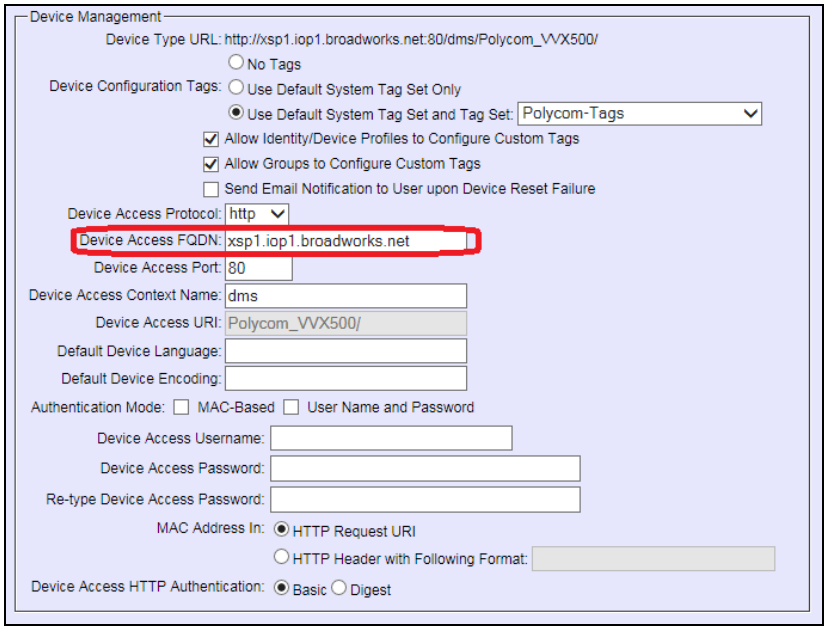

Figure 4 Device Access FQDN

Next, using the *Files and Authentication* link, select the option to rebuild all system files.

Firmware files must be obtained from Polycom. These files are not included in the import. Complete the steps in section *5.2.2.2.2.3 Static Files* to define the static firmware files and to upload the firmware.

The Polycom configuration features described in the following subsections are optional and are not enabled by the import:

- *5.2.2.2.2.1.2 Phone Branding*
- *5.2.2.2.2.2 efk.cfg*
- *5.2.2.2.2.3.3 Language Provisioning (Optional)*
- *5.2.2.2.2.3.4 Startup Welcome Audio File (Optional)*
- *5.2.2.2.2.3.6 Polycom Productivity Suite Files (Optional)*
- *5.2.2.2.2.3.7 Polycom Phone Service*

After importing the DTAFs, the Application Server must be restarted to load the *TimeZoneAlias* files.

5.2.2.2 Configuration Method 2: Manual

This section identifies the manual steps necessary to configure BroadWorks to add the VVX phones running Polycom UC Software as a Device Management-enabled device type.

The manual method must be used for BroadWorks releases prior to Release 17.0. It is an optional method in Release 17.0 and later. To determine when to use the manual method, see section *5.2.2 Configure BroadWorks Device Profile Type*. The steps in this subsection can also be followed to update previously imported or configured device profile type(s) with new configuration files and firmware.

Device profile types can be created for each Polycom VVX phone model or one device profile type can be created to apply to all Polycom VVX phone models (for example, *Polycom-VVX-Standard*). The steps in this section apply in either case; however, they must be repeated for each device profile type if there is one for each Polycom VVX phone model.

Manual configuration requires the steps described in the following subsections:

- *5.2.2.2.1 Modify Device Profile Type*
- *5.2.2.2.1.1 Configure Device Configuration Options*
- *5.2.2.2.1.2 Configure Device Management Options*
- *5.2.2.2.2 Define Device Profile Type Files*
- *5.2.2.2.2.1 System Files*
- *5.2.2.2.2.2 Device-Specific Files*
- *5.2.2.2.2.3 Static Files*

5.2.2.2.1 Modify Device Profile Type

This subsection identifies the BroadWorks device profile type settings, which are relevant to Device Management for the VVX phone running Polycom UC Software.

Browse to *System* → *Resources* → *Identity/Device Profile Types* and perform a search to find the Polycom device profile type(s) created in section *3.1 BroadWorks Device Profile Configuration* or add the device profile type for each model using the settings from section *3.1 BroadWorks Device Profile Configuration* if they do not exist.

The *Standard Options* and *Advanced Options* should already be configured as specified in section *3.1 BroadWorks Device Profile Configuration*. If there are differences, update to match the settings in section *3.1 BroadWorks Device Profile Configuration*.

NOTE: When using a single device profile type for all Polycom VVX models (for example, *Polycom-VVX-Standard*), the *Number of Ports* under the *Standard Options* must be set to the maximum number of lines supported by a Polycom model (16).

The following subsections identify the required settings specific to Device Management.

5.2.2.2.1.1 Configure Device Configuration Options

If Device Management has been enabled previously for the device profile type(s), go to the next section.

Device configuration is enabled differently depending on the deployed BroadWorks release.

For BroadWorks Release 18.0 and later, configure as described in the following table.

Parameter	Value	Description
Device Configuration Options	Device Management	Use BroadWorks Device Management.

The following shows Device Management enabled for BroadWorks Release 18.0 and later.

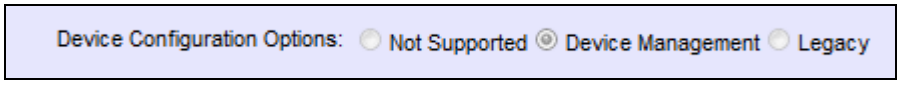

Figure 5 Device Management for Release 18.0 and Later

For BroadWorks releases prior to Release 18.0, configure as described in the following table. Note that these settings serve only to enable Device Management and are otherwise not meaningful in this context.

Parameter	Value	Description
Auto Configuration Type	2 Config File	Not meaningful other than it must be selected.
CPE System File Name	not_used	This parameter must not be blank, so set it to “not_used”.
Device File Format	not_used	This parameter must not be blank, so set it to “not_used”.

The following shows Device Management enabled for a BroadWorks release prior to Release 18.0.

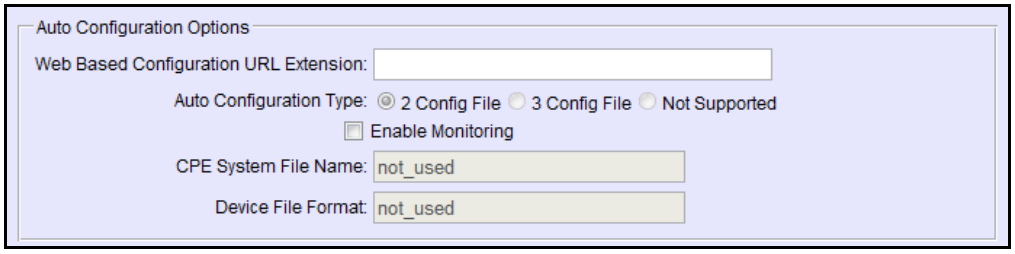

Figure 6 Auto Configuration Options

5.2.2.2.1.2 Configure Device Management Options

If Device Management has been enabled previously for the device profile type(s), make sure that the existing settings match the settings described in this subsection.

Modify the device profile type *Device Management Options* as described in the following table. These are common settings, which apply to all devices enabled for Device Management.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Configuration Tags	Use the Default System Tag Set and Tag Set. Select the device tag set created as described in section *5.2.1.2 Create Device Type Specific Tags*.	
Allow Identity/Device Profiles to Configure Custom Tags	Checked	Optional
Allow Groups to Configure Custom Tags	Checked	Optional
Device Access Protocol	http	
Device Access FQDN	<BroadWorks-XSP-Cluster-Address> Example: xsp.iop1.broadworks.net	If using an Xtended Services Platform farm, set this to the Xtended Services Platform cluster FQDN. Otherwise, set this to the individual Xtended Services Platform FQDN or IP address.
Device Access Port	<BroadWorks-XSP-Port> Example: 80	This should be set to “80”.
Device Access Context Name	Dms	This does not need to be defined. BroadWorks defaults to the system-defined value.
Device Access URI	<device name> Example: Polycom-VVX500 Or Polycom-VVX-Standard	This defines the directory the Xtended Services Platform uses to access the configuration files. Polycom-Standard (or similar) would be used when a single device type is defined for all Polycom models.

Example *Device Management* options settings:

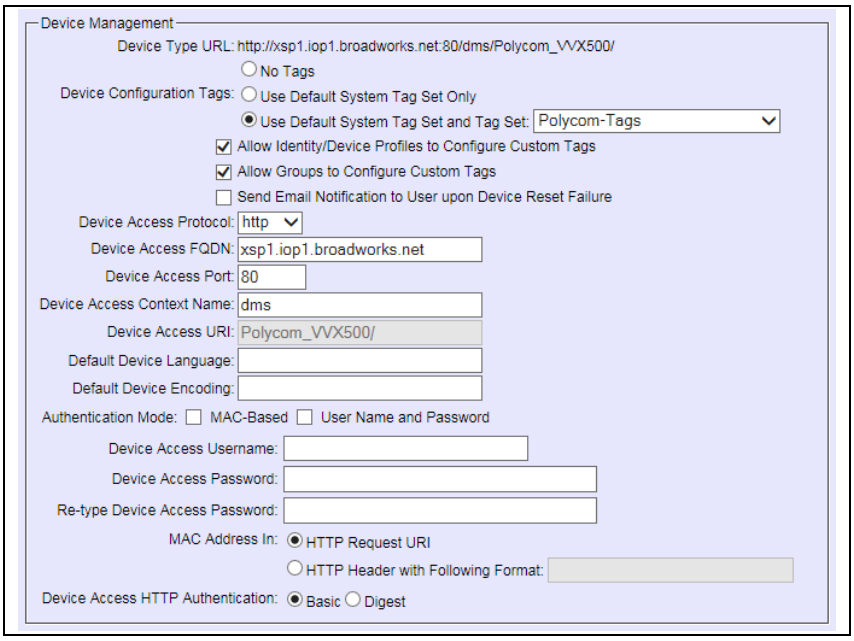

Figure 7 Device Management Options Settings

5.2.2.2.2 Define Device Profile Type Files

This section describes the BroadWorks Device Management configuration necessary to identify the configuration files and other files that the VVX phones running Polycom UC Software download.

Configuration templates, firmware, and other files applicable to devices running Polycom UC Software must be uploaded to BroadWorks. Download the Polycom VVX CPE kit from BroadSoft Xchange at www.broadsoft.com/xchange. Extract the configuration files from the *Configuration Files* folder of CPE kit. Get the firmware files directly from Polycom.

The following table identifies the Polycom configuration files distributed with the 4.1.x CPE kit.

File Name	CPE Kit Template File Name	File Type	Description
BWMACADDRESS.cfg	%BWMACADDRESS%.cfg.template	Device-specific	This file contains all the configuration and firmware files that the phone has to load.
BWMACADDRESS-directory.xml	%BWMACADDRESS%-directory.xml.template	Device-specific	This is the template file used to build the Polycom directory file.
000000000000.cfg	000000000000.cfg.template	System-level	This file is the default file that the Polycom UC Software device request when the *BWMACADDRESS.cfg* file is not present.
efk.cfg	efk.cfg.tmpl	System-level	This file configures the soft keys on the phone to perform special functions.

File Name	CPE Kit Template File Name	File Type	Description
phoneBWDEVICEID.cfg	phone%BWDEVICED%.cfg.template	Device-specific	This file contains data specific to a BroadWorks user. This file is created from the Polycom *phone1.cfg* file and it contains the *phone1.cfg* parameters, which have to be changed from their default values.
qsetup.cfg	qsetup.cfg.tmpl	System-level	This file contains quick setup key configuration.
sys.cfg	sys.cfg.template	System-level	This file is created from the Polycom *sip.cfg* file and it contains the *sip.cfg* parameters, which have to be changed from their default values.
TimeZoneAliasLabels_Polycom-<model>.properties	TimeZoneAliasLabels_Polycom<model>.properties	Time Zone Alias	The *TimeZoneAlias* file is a BroadWorks Device Management file used to map time zone identifiers between BroadWorks and Polycom phones. A *TimeZoneAlias* file is required for each model.

The following table identifies other files that the Polycom phone downloads from the server or uploads to the server. These files are not provided in the CPE kit.

File Name	File Type	Description
BWMACADDRESS-boot.log	Device-specific	This is a log file created by the boot firmware.
BWMACADDRESS-app.log	Device-specific	This is a log file created by the application firmware.
BWMACADDRESS-license.cfg	Device-specific	This file licenses the Polycom Productivity Suite applications to a specific phone.
BWMACADDRESS-phone.cfg	Device-specific	This file documents the current settings used by the phone. If a configuration item is set at the phone then the setting is documented in this file.
000000000000-license.cfg	Static	This file licenses the Polycom Productivity Suite applications to all phones on a BroadWorks system.
SoundPointIP-dictionary.xml	System-level	This is the language file used by the phone. Each of the supported languages is added to a file with this name.
4.1.x.sip.ld or [Part_Number].4.1.3.sip.ld	Static	The *4.1.x.sip.ld* file is the generic application for the VVX models. The *[PART_NUMBER].4.1.x.sip.ld* is the VVX model-specific application.
*.jpg	Static	Any user-defined JPG files, meeting the Polycom-defined size requirements, can be uploaded.

Browse to *System* → *Resources* → *Identity/Device Profile Types* → *Files and Authentication* to add the files distributed with the CPE kit as described in the following subsections.

5.2.2.2.2.1 System Files

This section identifies the system-level files used by Polycom and provides instructions for defining the files and uploading for Device Management.

The system-level files and topics are described in the following subsections:

- *5.2.2.2.2.1.1 sys.cfg*
- *5.2.2.2.2.1.2 Phone Branding*

5.2.2.2.2.1.1 sys.cfg

The *sys.cfg* file is created from data in the *sip.cfg* file. The parameters in the *sip.cfg* file, which must be configured to support the interface to BroadWorks, are moved to the *sys.cfg* file.

Add a BroadWorks device profile type file to the Polycom UC Software VVX device profile for the *sys.cfg* file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	sys.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	sys-%BWTIMESTAMP%.cfg	This is the file name as stored in the Device Management repository. If group customization of the system file is required, then the repository file name must contain the *timestamp* tag.
File Category	Dynamic Per-Type	This is the system file that applies to the device type.
File Customization	Administrator	This identifies who can customize the system file template.
Enable Caching	This is not set.	Caching is optional for a system file.
Assign File	Custom	
Authentication Mode	User name and password	This must be set based on what the device supports. If group customization of the system file is required, then Authentication must be set to the user name and password.
Device Access HTTP Authentication	Digest	

After defining the system file type, upload the corresponding system file template downloaded from BroadSoft Xchange. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Example *sys.cfg* file settings:

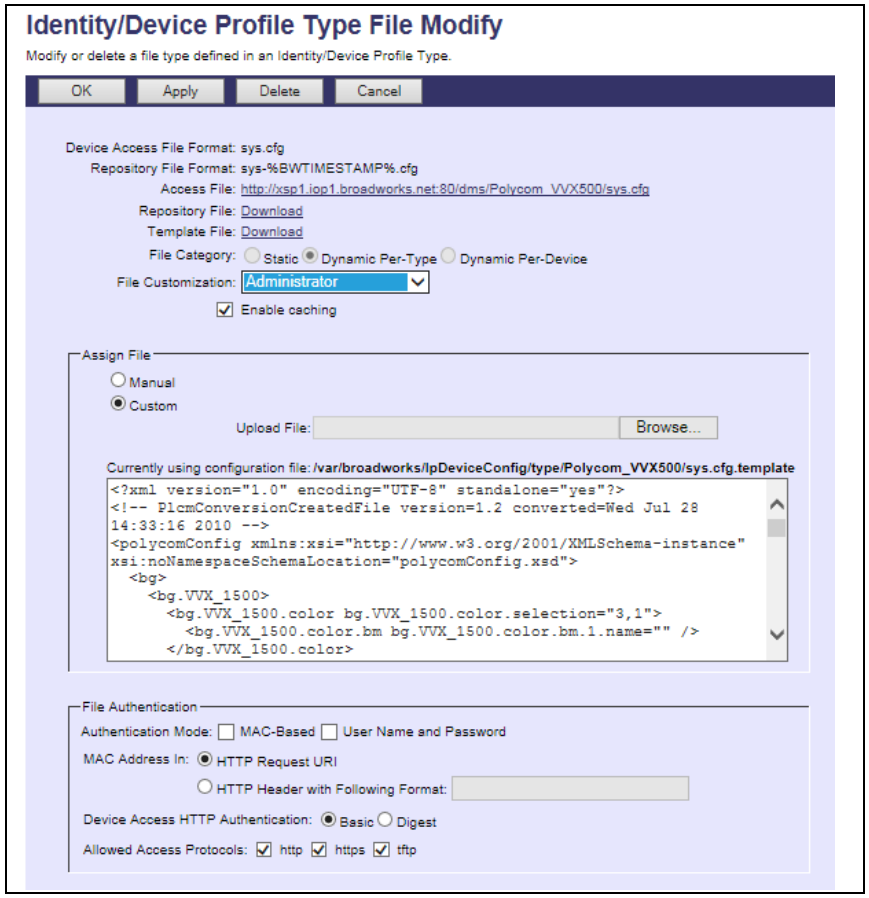

Figure 8 sys.cfg File

5.2.2.2.2.1.2 Phone Branding

The *sys.cfg* file contains configuration data to allow branding of the phone by uploading a custom bitmap to the background display of the phone and the sidecars. This section describes the steps necessary to enable custom bitmaps.

To enable the phone to look for bitmaps to download, modify the *sys.cfg* file as described in the following table.

Step	Command	Purpose
Step 1	Select the background for the VVX phone mode. Example: <bg> <bg.color bg.color.selection.VVX500="2,1"> <bg.color.bm bg.color.bm.1.name.VVX500="http://%BWDEVICEACCESSFQDN%:%BWDEVICEACCESSPORT%/%BWDMSCONTEXT%/%BWDEVICEACCESSURI%bsoft.jpg" /> </bg>	These parameters are used to load a custom bitmap to the VVX models. Modify the *bsoft.jpg* file name to the file names you are using.

To load the bitmap images to Device Management, add a new BroadWorks device profile type file to the Polycom UC Software VVX device profile using the settings described in the following table. Repeat for each bitmap image to be loaded. For the bitmap size requirements, see the *Polycom UC Software Administrator's Guide* [1].

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	<bitmap-name>.jpg Example: bsoft.jpg	This is the file name, which the phone uses to request the file.
Repository File Format	<bitmap-name>.jpg Example: bsoft.jpg	This is the file name as stored in the Device Management repository. If group customization of the system file is required, then the repository file name must contain the *timestamp* tag.
File Category	Static	
File Customization	Administrator	This identifies who can customize the system file template.
Enable Caching	This is not set.	Caching is optional.
Assign File	Custom	Use the *Browse* button to upload the background image for the phone.

Example *bitmap image file* settings:

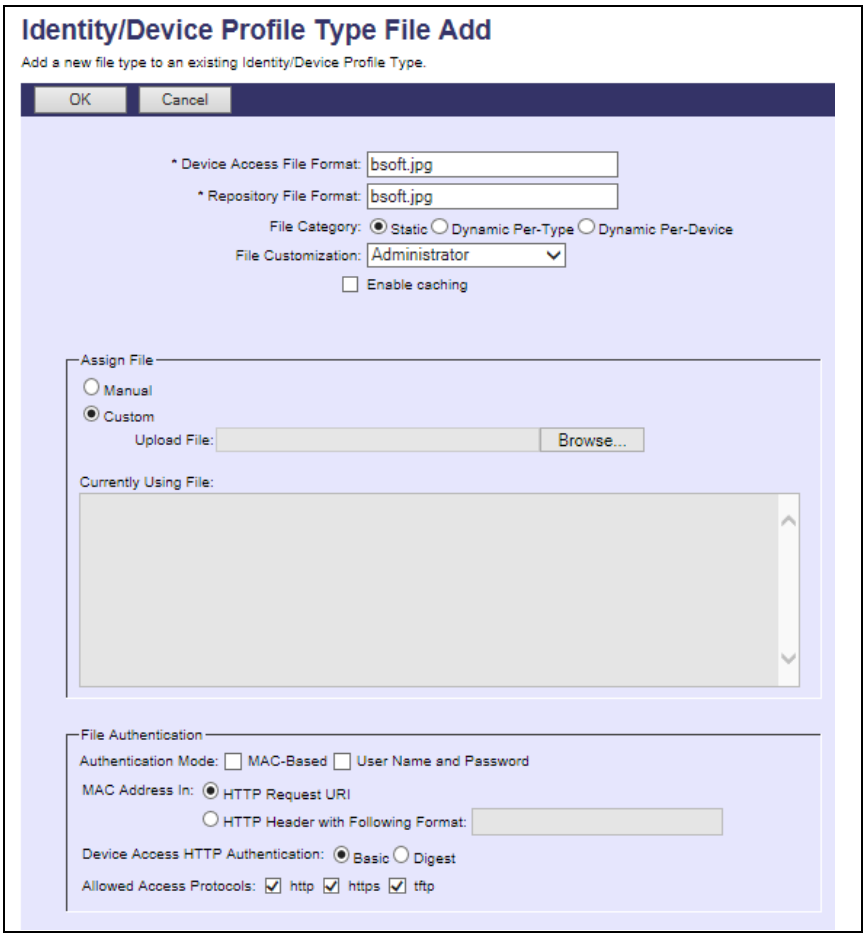

Figure 9 Bitmap Image File

Polycom phones can also load the default background images provided in the Polycom release zip file. These images are released as part of the Polycom firmware package. These files can be uploaded using the mechanism described earlier. These files include *Beach256x116.jpg, Beach.jpg, BeachEM.jpg, Jellyfish256x116.jpg, Jellyfish.jpg, JellyfishEM.jpg, Leaf256x116.jpg, Leaf.jpg, LeafEM.jpg, Mountain256x116.jpg, Mountain.jpg, MountainEM.jpg, Palm256x116.jpg, Palm.jpg, PalmEm.jpg, Sailboat256x116.jpg, Sailboat.jpg,* and *SailboatEM.jpg.*

5.2.2.2.2.2 Device-Specific Files

This section identifies the device-specific files used by Polycom and provides instructions for defining the files and uploading for Device Management.

The device-specific files are described in the following subsections:

- *5.2.2.2.2.2.1 BWMACADDRESS.cfg*
- *5.2.2.2.2.2.2 phoneBWMACADDRESS.cfg*
- *5.2.2.2.2.2.33 efk.cfg*
- *5.2.2.2.2.2.4 BWMACCADDRESS-app.log, BWMACADDRESS-boot.log*

5.2.2.2.2.2.1 BWMACADDRESS.cfg

This is the first file that the phone requests from Device Management at restart. This file defines the firmware file to load, the configuration files to load, and the order in which to load these files.

If necessary, this file can be modified and customized at the group or user level to control the firmware versions and provide custom configurations. The following table describes the file content that can be modified.

Step	Parameter	Purpose

Step 1	**Firmware Version**
	Example:
	Option 1:
	`APP_FILE_PATH="[PHONE_PART_NUMBER].%APP_VERSION%.sip.ld"`
	Option 2:
	`APP_FILE_PATH="%APP_VERSION%.sip.ld"`
		The phone can download a firmware file specific to a phone model or a firmware file common to all phone models.
		▪ Option 1 defines a model-specific firmware file. It also uses a Polycom system tag to define the firmware version. Assuming the *%APP_VERSION%* tag is defined as "4.1.3", the VVX500 model would request a firmware file of 3111-*44500-001.4.1.3.sip.ld* from Device Management.
		▪ Option 2 defines a common firmware file. Assuming the *%APP_VERSION%* tag is defined as "4.1.3", the VVX500 model would request a firmware file of *4.1.3.sip.ld* from Device Management.
		NOTE: The CPE kit uses Option 1.

Step 2	**Configuration Files** Example: `CONFIG_FILES="phone%BWMACADDRESS%.cfg, efk.cfg, sys.cfg, phone1.cfg, sip.cfg"`	This parameter defines the configuration files to load and the order in which they are loaded. The settings in first file loaded take precedence over the settings in the files that follow. The *efk.cfg* file is an optional file. If you do not want to use this file, then it needs to be removed from this line so that the phone does not load it. For more information on this file, see section *5.2.2.2.2.3 efk.cfg*.

Add a BroadWorks device profile type file to the Polycom UC Software VVX device profile for the *BWMACADDRESS.cfg* file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	%BWMACADDRESS%.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	%BWFQDEVICEID%.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Dynamic Per-Device	This file is unique per device.
File Customization	Administrator and user	This identifies who can customize this file template.
Enable Caching	This is not set.	Caching should not be enabled for device-specific files.

Parameter	Value	Description
Assign File	Custom	
Authentication Mode	User name and password	This phone-specific file is authenticated with a user name and password.
Device Access HTTP Authentication	Digest	

After defining the device-specific file type, upload the corresponding device-specific file template downloaded from BroadSoft Xchange. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Example *BWMACADDRESS.cfg* file settings:

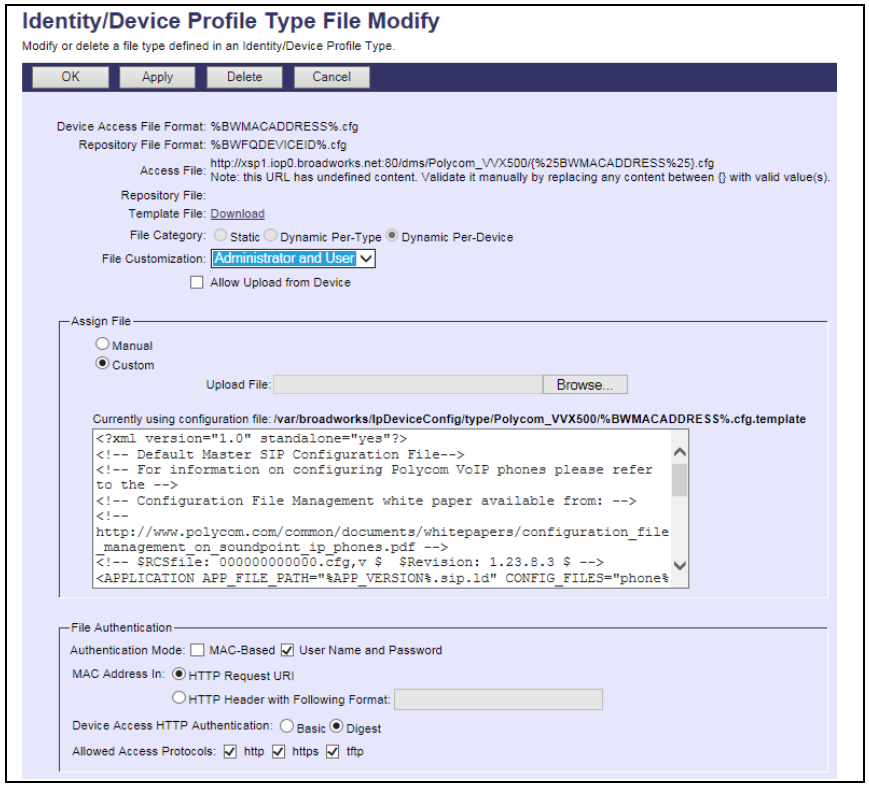

Figure 10 BWMACADDRESS.cfg File

5.2.2.2.2.2.2 phoneBWMACADDRESS.cfg

The *phoneBWMACADDRESS.cfg* template file in the Polycom CPE kit provides line provisioning of the phone. It may be necessary or desirable for the service provider to customize this file. Note that this file contains configuration data for only 12 lines. To enable configuration for more than 12 lines on the VVX600, additional line configuration items must be added to the file.

The following table describes the file content. Repeat this content structure to add additional lines.

Step	Parameter	Purpose
Step 1	Display Name Example: `reg.1.displayName="%BWFIRSTNAME-1% %BWLASTNAME-1%"`	Device Management sets this field to the first and last name of the user assigned to the device.
Step 2	Registering Address Example: `reg.1.address="%BWLINEPORT-1%"`	Device Management sets this field to the user part assigned in the user's device address, defined in the *line/port* field at *User → Addresses* link.
Step 3	Line Label Example: `reg.1.label="%BWEXTENSION-1%"`	Device Management sets this field to the extension defined for the user assigned to the device.
Step 4	Line Type Example: `reg.1.type="%BWSHAREDLINE-1%"`	Device Management sets this field to "shared" if the Shared Call Appearance feature is defined and the shared device is added. Otherwise, this field is set to "private".
Step 5	User Authentication Username Example: `reg.1.auth.userId="%BWAUTHUSER-1%"`	Device Management sets this field to the authentication user ID defined for the user on BroadWorks.
Step 6	User Authentication Password Example: `reg.1.auth.password="%BWAUTHPASSWORD-1%"`	Device Management sets this field to the authentication password defined for the user on BroadWorks.
Step 7	Server Address Example: `reg.1.server.1.address="%BWHOST-1%"`	Device Management sets this file to the domain name assigned in the user's device address, defined in the *line/port* field at the User → Addresses link.

Step 8	Device Feature Synchronization configuration
	`reg.1.serverFeatureControl.cf="%FEATURE_SYNC_CF%"`
	`reg.1.serverFeatureControl.dnd="%FEATURE_SYNC_DND%"`
		Device Management sets these parameters to the values defined in section *5.2.1.2 Create Device Type Specific Tags.*

Step 9	Bypass Instant Message Example: `msg.bypassInstantMessage="1"`	This field configures the phone to go directly to the *Message Center* menu when the *Messages* button is pressed on the phone.

Step	Parameter	Purpose
Step 10	Call Back Address Example: `msg.mwi.1.callBack="%BWVOICE-PORTAL-NUMBER-1%"`	Device Management sets this field to the group voice portal directory number (DN) assigned to the user, assigned to the device line.
Step 11	Busy Lamp Field `<attendant attendant.uri="%BWBLF-USER-1%@%BWBLF-DOMAIN-1%" />`	Device Management sets this parameter to the *user@domain* address defined in the Busy Lamp Field feature on BroadWorks.
Step 12	ACD Synchronization `<acd acd.reg="%ACD_LINE%" acd.stateAtSignIn="%ACD_SIGNIN_STATE%" />`	Device Management sets these parameters to the values defined in section *5.2.1.2 Create Device Type Specific Tags*.
Step 13	Barge In `reg.1.bargeInEnabled="%BWSCA-BRIDGING-BINARY-1%"`	Device Management sets this to the setting for SCA bridging for the line.

Step 14	BroadWorks Enterprise Directory
	`feature.broadsoftdir.enabled="%FEATURE_BW_DIR%"`
	`feature.qml.enabled="1"`
	`dir.broadsoft.xsp.address="http://%XSP_ADDRESS_XSI_ACTIONS%/"`
	`dir.broadsoft.xsp.username="%XSPUSER%"`
	`dir.broadsoft.xsp.password="%XSPPASS%"`
		This is used to enable the BroadWorks Enterprise Directory service.
		NOTE: The Qt Meta Language (QML) is basis of the user interface (UI) for the BroadSoft Enterprise Directory as well as BroadCloud UC-One. This parameter must be set to “1”.

Step 15	BroadCloud UC-One
	`feature.broadsoftUcOne.enabled="%FEATURE_BW_UC_ONE%"`
	`xmpp.1.enable="%FEATURE_BW_UC_ONE%"`
	`xmpp.1.server="%BW_IMP_SERVICE_NET_ADDRESS-1%"`
	`xmpp.1.auth.domain="%BW_IMP_SERVICE_NET_ADDRESS-1%"`
	`xmpp.1.auth.password="%BW_USER_IMP_PWD-1%"`
	`xmpp.1.jid="%BW_USER_IMP_ID-1%"`
	`xmpp.1.dialMethod="sip"`
		This is used to enable the BroadCloud UC-One directory feature.
		NOTE: The BroadSoft Enterprise Directory must be enabled for BroadCloud UC-One to be shown on user interface.

Step 16	UC-One Presence `feature.presence.enabled="%FEATURE_PRESENCE%"`	This is used to enable the BroadCloud UC-One Presence feature.

Add a BroadWorks device profile type file to the Polycom UC Software device profile for the *phoneBWMACADDRESS.cfg* file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	phone%BWMACADDRESS%.cfg	This is the file name, which the phone uses to request the file.

Parameter	Value	Description
Repository File Format	phone%BWFQDEVICEID%.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Dynamic Per-Device	This file is unique per device.
File Customization	Administrator and user	This identifies who can customize this file template.
Enable Caching	This is not set.	Caching should not be enabled for device-specific files.
Assign File	Custom	
Authentication Mode	User name and password	The phone-specific file is authenticated with a user name and password.
Device Access HTTP Authentication	Digest	

After defining the device-specific file type, upload the corresponding device-specific file template downloaded from BroadSoft Xchange. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Example *phoneBWMACADDRESS.cfg* file settings:

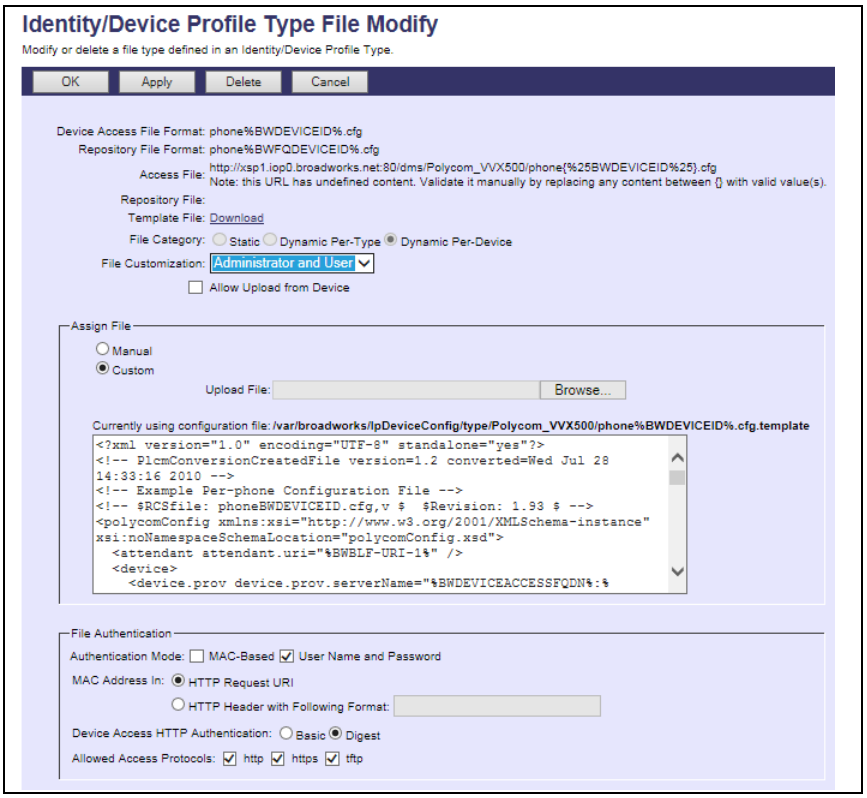

Figure 11 phoneBWMACADDRESS.cfg File

5.2.2.2.2.2.3 efk.cfg

The enhanced feature and soft key (*efk.cfg*) file is an optional configuration file. The *efk.cfg* file in the CPE kit provides an example of how to configure the enhanced feature soft keys on the Polycom phones. The example file provides configuration of the following buttons on the Polycom phones:

- Conference Bridge (CnfBridge) – This feature key prompts for a bridge extension and then prompts for the passcode. Once this information is entered, the phone dials the bridge and enters the passcode. This configuration needs to be modified for your specific deployment.
- Push To Talk (PTT) – This key prompts for a user extension and then performs the Push to Talk function to the user requested.
- Call Pull – This key is defined to do a call pull from a call on a BroadWorks Anywhere number (cell phone) to the Polycom phone.
- Qsetup – This key displays the phone's file server configuration page. The Xtended Services Platform location, user name, and password can be entered on this page.
- SendVM – This key is displayed when a call is active. When pressed, it prompts for a user extension to transfer to Voice Messaging. The call is transferred to this user's Voice Messaging.

This file is intended as an example. It is expected that the service provider would usually customize this file as appropriate for their customer base and possibly for individual phones. For description and instructions to define the feature and soft keys, see the *Polycom UC Software Administrator's Guide* [1]. Note that there are no Device Management tags used in this file so the file is actually a *static* Device Management file.

If this Polycom capability is not used, then the *efk.cfg* file should be removed from the *BWMACADDRESS.cfg* file described in section *5.2.2.2.2.2.1 BWMACADDRESS.cfg*.

If this capability is used, add a BroadWorks device profile type file to the Polycom UC Software device profile for the *efk.cfg* file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	efk.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	efk.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Static	This file does not contain tags.
File Customization	Administrator	This identifies who can customize this file template.
Enable Caching	This is not set.	Caching is not recommended.
Assign File	Custom	

After defining the file, upload the corresponding *efk.cfg* file template downloaded from BroadSoft Xchange. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Example *efk.cfg* file settings:

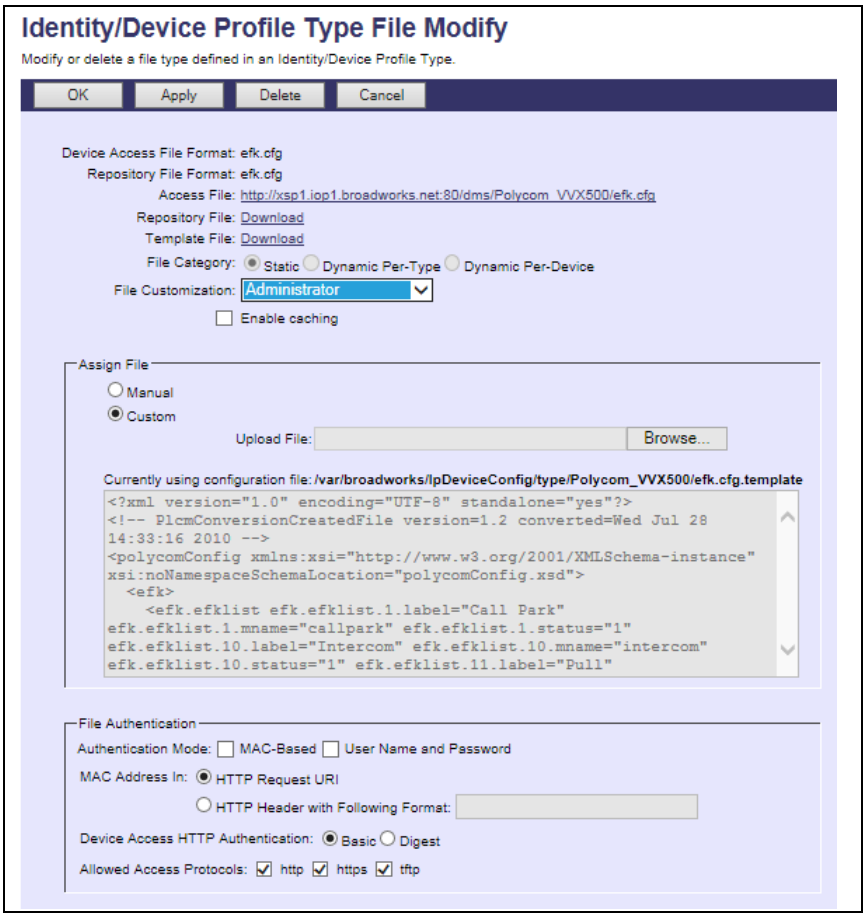

Figure 12 efk.cfg File

5.2.2.2.2.2.4 BWMACCADDRESS-app.log, BWMACADDRESS-boot.log

The Polycom phone uploads log files periodically to the file server. One file is uploaded by the boot firmware and the other file is uploaded by the application firmware. Placeholder files must be created so that the phone can upload these files to the system.

Add a BroadWorks device profile type file to the Polycom UC Software device profile for both the *BWMACCADDRESS-app.log* and *BWMACADDRESS-boot.log* files using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	%BWMACADDRESS%-app.log %BWMACADDRESS%-boot.log	This is the file name, which the phone uses to request the file.
Repository File Format	%BWFQDEVICEID%-app.log %BWFQDEVICEID%-boot.log	This is the file name, (as stored in the Device Management repository).
File Category	Dynamic-Per-Device	This file does not contain tags.

Parameter	Value	Description
File Customization	Disallow	This identifies who can customize the file.
Allow Upload from Device	X	This check box controls whether the file can be uploaded from a device.
Assign File	Manual	
Authentication Mode	User name and password	The phone-specific file is authenticated with a user name and password.
Device Access HTTP Authentication	Digest	

Example *BWMACCADDRESS-app.log* file settings:

Figure 13 BWMACCADDRESS-app.log File

5.2.2.2.2.3 Static Files

Static files are files, such as firmware and media files, that are not configurable and/or do not make use of the dynamic BroadWorks Device Management tags.

The following sections cover the following Polycom UC Software static files and topics:

- *5.2.2.2.2.3.1 Application Firmware*
- *5.2.2.2.2.3.2 Time Zone Alias File*
- *5.2.2.2.2.3.3 Language Provisioning (Optional)*
- *5.2.2.2.2.3.4 Startup Welcome Audio File (Optional)*
- *5.2.2.2.2.3.5 Quick Setup (Optional)*
- *5.2.2.2.2.3.6 Polycom Productivity Suite Files (Optional)*
- *5.2.2.2.2.3.7 Polycom Phone Service*

5.2.2.2.2.3.1 Application Firmware

The application firmware is identified similarly to the boot firmware as follows:

<part number>.<version>.sip.ld

The *part number* is Polycom's distinct identifier mapping a model to firmware. For a complete part number mapping list, see the *Polycom UC Software Administrator's Guide* [1].

The *version* is the application firmware version as specified by the *APP_VERSION* tag in the *BWMACADDRESS.cfg* template file. Note that the *APP_VERSION* tag can be overridden at the group or user level for a controlled or phased upgrade.

Examples:

- Polycom VVX300: 3111-46135-001.4.1.4.sip.ld
- Polycom VVX310: 3111-46161-001.4.1.4.sip.ld
- Polycom VVX400: 3111-46157-001.4.1.4.sip.ld
- Polycom VVX410: 3111-46162-001.4.1.4.sip.ld
- Polycom VVX500: 3111-44500-001.4.1.3.sip.ld
- Polycom VVX600: 3111-44600-001.4.1.3.sip.ld

Note that during boot time, the phone requests the specific model file *(<part-number>.<version>.sip.ld*) first, and if it is not found, it requests the *<version>.sip.ld* file.

Add a BroadWorks device profile type file to the Polycom UC Software device profile for the application file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	<part number>.<version>.sip.ld Example: 3111-44500-001.4.1.3.sip.ld	This is the file name, which the phone uses to request the file.
Repository File Format	<part number>.<version>.sip.ld Example: 3111-44500-001.4.1.3.sip.ld	This is the file name stored in the Device Management repository. Use the same name as the actual file name.

File Category	Static	This is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This file must not be modified.
Enable Caching	Selected	Caching should usually be enabled for static files.
Assign File	Custom	
Authentication Mode	This is not set.	The static files are not authenticated so do not select either of the options.

After defining the application firmware file type, upload the corresponding application firmware file. Application firmware files are not included in the CPE kit and must be obtained from Polycom. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Repeat the instructions in this section for each model's application firmware.

Example application firmware file settings:

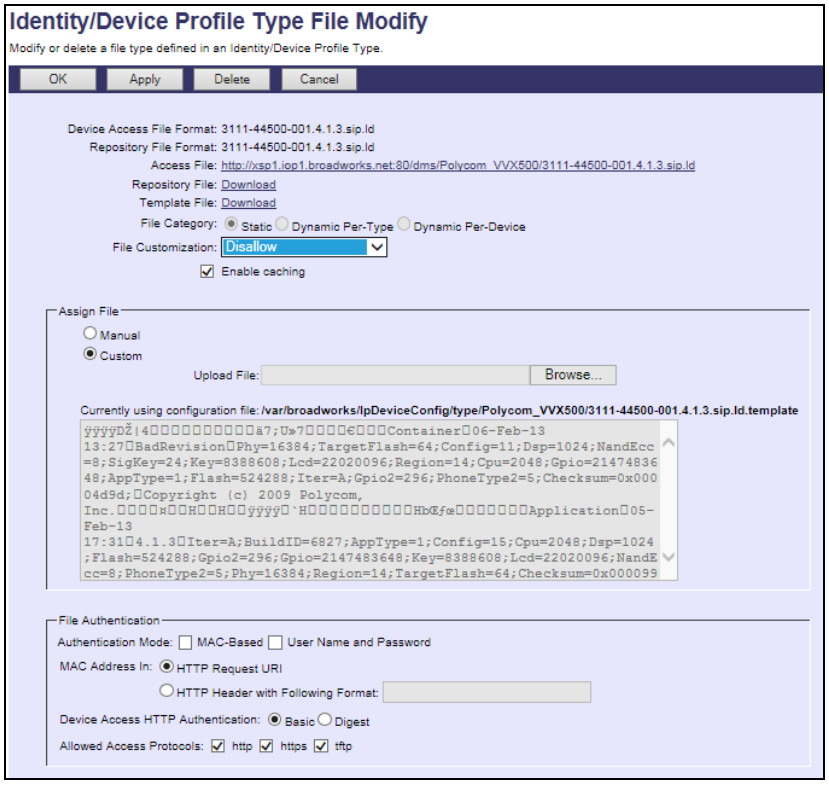

Figure 14 Application Firmware File Settings

5.2.2.2.2.3.2 Time Zone Alias File

To map a BroadWorks configured user time zone properly to the Polycom UC Software devices, a mapping file must be created on the BroadWorks system. This file maps the BroadWorks user time zone settings to the phone's time zone settings. Time zone mapping for the device profile type is documented in the *BroadWorks Device Management Configuration Guide* [2].

This time zone mapping file must be added to the */usr/local/broadworks/bw_base/conf/dms* directory on the Application Server using the following file name format:

- *TimeZoneAliasLabels_Polycom_VVX500.properties*
- *TimeZoneAliasLabels_Polycom-VVX-Standard.properties*

For example, if the device type name is *Polycom_VVX550,* the time zone mapping file name must be *TimeZoneAliasLabels_Polycom_VVX500.properties*. (Note that if there is a space in the device name, then the space must be converted to a "+" in the file name.)

If a unique device profile type is configured for each model, a separate *TimeZoneAlias* file must be created for each model. If a single device type is used for all models, a single *TimeZoneAlias* file is required (for example, *TimeZoneAliasLabels_Polycom-VVX-Standard.properties*).

The file must contain the mapping of BroadWorks time zones values to Polycom UC Software device time zone values. The following is an example of the file contents:

```
CANADA_PACIFIC_TIME=-28800
US_PACIFIC_TIME=-28800
CANADA_MOUNTAIN_TIME=-25200
US_MOUNTAIN_TIME=-25200
CANADA_CENTRAL_TIME=-21600
US_CENTRAL_TIME=-21600
CANADA_EASTERN_TIME=-18000
US_EASTERN_TIME=-18000
CANADA_ALTANTIC_TIME=-14400
CANADA_NEWFOUNDLAND=-12600
```

This file should contain all time zones supported by the service provider's BroadWorks system. The Application Server must be restarted to load this file.

The CPE kit contains the time zone properties files defined for the continental U.S. and Canadian time zones. For other time zone settings, see the *Polycom UC Software Administrator's Guide* [1]. When using the DTAF import, the *TimeZoneAlias* files are automatically copied to the system.

The BroadWorks Application Server must be restarted for the *TimeZoneAlias* files to be picked up by the system.

5.2.2.2.2.3.3 Language Provisioning (Optional)

There are two aspects to language provisioning. First, the Polycom VVX phone must be enabled to download the Polycom language files. Second, a mapping is required between the BroadWorks language identifiers and Polycom's language identifiers.

5.2.2.2.2.3.3.1 Language Files

The Polycom VVX phone by default is preloaded with the English language. If the phone is configured to use a language other than English, then it downloads the language file from Device Management.

The phone requests the language file in the following format:

<Localization Directory>/<Language Directory>/SoundPointIP-dictionary.xml

The available Polycom VVX language files are delivered from Polycom along with the firmware. The following table defines the file paths that should be entered when uploading the files to Device Management.

Language	File Path
Chinese	SoundPointIPLocalization/Chinese_China/SoundPointIP-dictionary.xml
Danish	SoundPointIPLocalization/Danish_Denmark/SoundPointIP-dictionary.xml
Dutch	SoundPointIPLocalization/Dutch_Netherlands/SoundPointIP-dictionary.xml
English Canada	SoundPointIPLocalization/English_Canada/SoundPointIP-dictionary.xml
English United Kingdom	SoundPointIPLocalization/English_United_Kingdom/SoundPointIP-dictionary.xml
English United States	SoundPointIPLocalization/English_United_States/SoundPointIP-dictionary.xml
French	SoundPointIPLocalization/French_France/SoundPointIP-dictionary.xml
German	SoundPointIPLocalization/German_Germany/SoundPointIP-dictionary.xml
Italian	SoundPointIPLocalization/Italian_Italy/SoundPointIP-dictionary.xml
Japanese	SoundPointIPLocalization/Japanese_Japan/SoundPointIP-dictionary.xml
Korean	SoundPointIPLocalization/Korean_Korea/SoundPointIP-dictionary.xml
Norwegian	SoundPointIPLocalization/Norwegian_Norway/SoundPointIP-dictionary.xml
Polish	SoundPointIPLocalization/Polish_Poland/SoundPointIP-dictionary.xml
Portuguese	SoundPointIPLocalization/Portuguese_Portugal/SoundPointIP-dictionary.xml
Russian	SoundPointIPLocalization/Russian_Russia/SoundPointIP-dictionary.xml
Slovenian	SoundPointIPLocalization/Slovenian_Slovenia/SoundPointIP-dictionary.xml
Spanish	SoundPointIPLocalization/Spanish_Spain/SoundPointIP-dictionary.xml
Swedish	SoundPointIPLocalization/Swedish_Sweden/SoundPointIP-dictionary.xml

To enable language file download, add a BroadWorks device profile type file to the Polycom UC Software VVX device profile using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	Enter the path in the table above for the requested file format for the language file uploaded.	This is the file name, which the phone uses to request the file.

Parameter	Value	Description
Repository File Format	Enter the path in the table above for the requested file format for the language file uploaded.	This is the file name, (as stored in the Device Management repository). Note, use the same name as the actual file name.
File Category	Static	This is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This file must not be modified.
Enable Caching	This is not selected.	Caching is optional for this file.
Assign File	Custom	
Authentication Mode	This is not set.	The static files are not authenticated so do not select either of the options.

After defining the language file type, upload the associated language file obtained from Polycom. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Repeat the instructions in this section for each language to be loaded. After loading languages for this Polycom VVX device profile type, repeat this section for other models.

5.2.2.2.2.3.3.2 Language Mapping

To enable Device Management control of the phone language, the languages defined on the BroadWorks Application Server must be mapped to the Polycom definitions. To perform the mapping, select the Polycom VVX device profile type and then select the *Languages* link. The defined BroadWorks languages are listed in a table. If languages other than English do not appear, they have not been defined. The supported languages and required mapping are as follows:

BroadWorks Language	Polycom Language Mapping
English	English_United_States or English_Canada
British	English_United_Kingdom
CALA_Spanish	Spanish_Spain
Chinese	Chinese_China
French	French_France
German	German_Germany
Italian	Italian_Italy
Japanese	Japanese_Japan
Spain_Spanish	Spanish_Spain

Example language mapping*:*

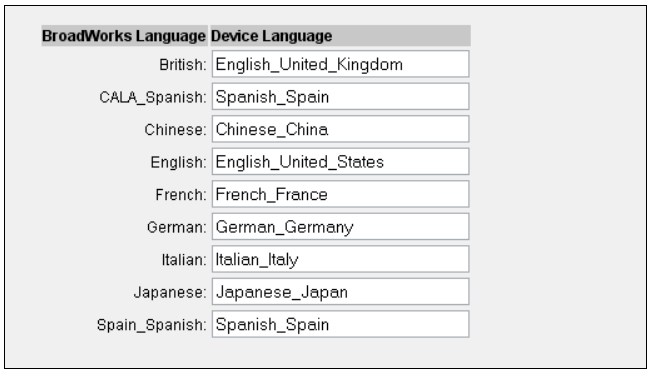

Figure 15 Language Mapping

The language applied to an individual phone is determined by the language defined for the user on the *BroadWorks User's Profile* page (see *Figure 16 BroadWorks User Language Definition*).

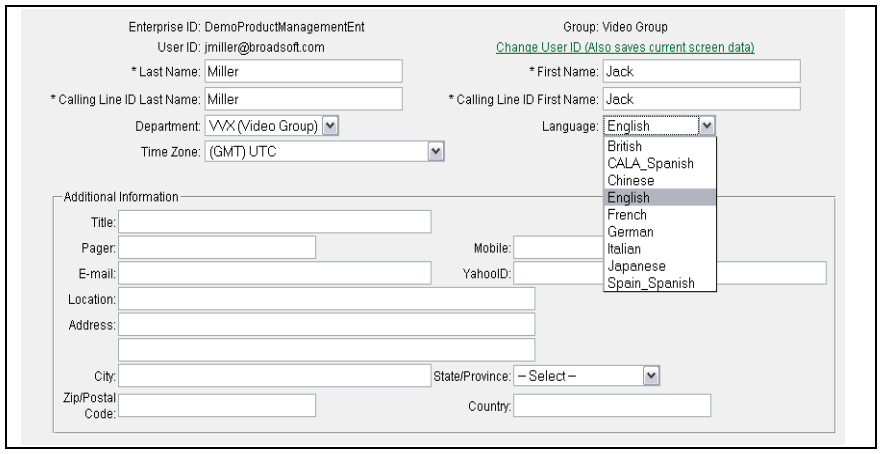

Figure 16 BroadWorks User Language Definition

The phone can manually download Polycom-supported languages not supported by BroadWorks via the *Language Preferences* menu on the phone. To access this menu, press the *Menu* key on the phone and select *Settings* → *Basic* → *Preferences* → *Language,* and from this page select the desired language for the phone to use on the display.

5.2.2.2.2.3.4 Startup Welcome Audio File (Optional)

The Polycom phone can be configured to play a WAV file at startup. The WAV file must be uploaded to Device Management. Polycom provides the WAV file (*SoundPointIPWelcome.wav*) in the Polycom release ZIP file.

To upload the WAV file, add a BroadWorks device profile type file to the Polycom UC Software VVX device profile using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	SoundPointIPWelcome.wav	This is the file name, which the phone uses to request the file.
Repository File Format	SoundPointIPWelcome.wav	This is the file name, (as stored in the Device Management repository). Note, use the same name as the actual file name.
File Category	Static	This is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This file must not be modified.
Enable Caching	This is not selected.	Caching is optional for this file.
Assign File	Custom	
Authentication Mode	This is not set.	The static files are not authenticated so do not select either of the options.

After defining the welcome audio file type, upload the WAV file obtained from Polycom. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Repeat the instructions in this section for each model.

5.2.2.2.2.3.5 Quick Setup (Optional)

Polycom provides a quick setup feature, which enables a phone to boot up when it cannot find its *macaddress.cfg* file. It presents the user with a Quick Setup key on the phone to enter the data from the phone. This section identifies the files and configuration necessary to enable Quick Setup.

5.2.2.2.2.3.5.1 000000000000.cfg

Polycom devices request the default *macaddress* file (*000000000000.cfg*) from Device Management if a request for the *macaddress.cfg* file fails. The *000000000000.cfg* file provides default instructions applicable to any Polycom device. This file identifies the following files for the phone to download:

- *sip.ld* firmware file
- *qsetup.cfg* file to trigger the Quick Setup soft key and its functionality

Add a BroadWorks device profile type file to the *DeviceManagementDefaults* device profile for the 000000000000.cfg file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	000000000000.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	000000000000.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Static	This file is unique per device type.
File Customization	Disallow	This identifies who can customize this file template.
Enable Caching	Selected	Caching is recommended for this file.
Assign File	Custom	
Authentication Mode	None	The phone-specific file is authenticated with a user name and password.

After defining the file, upload the *000000000000.cfg* file template downloaded from BroadSoft Xchange. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

5.2.2.2.2.3.5.2 qsetup.cfg

Polycom has implemented a Quick Setup (QSetup) soft key. Pressing this key at phone initialization automatically brings up the file server menu and the associated parameters on the Polycom UC Software device. By identifying this configuration file name in the *000000000000.cfg* file, the Quick Setup soft key is shown on the device.

Add a BroadWorks device profile type file to the *DeviceManagementDefaults* device profile for the *qsetup.cfg* file using the settings described in the following table

Parameters not identified in the following table can usually be left as defaults.

Parameter	Value	Description
Device Access File Format	qsetup.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	qsetup.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Static	This file is unique per device type.
File Customization	Disallow	This identifies who can customize this file template.
Enable Caching	Selected	Caching is recommended for this file.
Assign File	Custom	
Authentication Mode	None	The phone-specific file is authenticated with a user name and password.

After defining the file, upload the corresponding *qsetup.cfg* file template downloaded from BroadSoft Xchange. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

5.2.2.2.2.3.6 Polycom Productivity Suite Files (Optional)

Polycom provides a licensable UC Software Productivity Suite, which when licensed, enables additional features and capabilities on the phone. For more information on the Productivity Suite, see the *Polycom UC Software Administrator's Guide* [1]. Skip this section if not applicable.

The service provider must purchase a Productivity Suite license from Polycom. After doing so, the license can be applied to all phones or select phones using Device Management.

Polycom delivers the site license in the *000000000000-license.cfg* file and the individual user license in the *MACADDRESS-license.cfg* file, where MACADDRESS is the end user's phone MAC address. The service provider can use Device Management and the Polycom site license key to license these features to the entire system or on a per-BroadWorks group or per-BroadWorks user basis.

5.2.2.2.2.3.6.1 Polycom Productivity Suite License – System Wide

To assign the Productivity Suite license to all Polycom VVX phones, add a BroadWorks device profile type file to the Polycom UC Software VVX device profile using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	000000000000-license.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	000000000000-license.cfg	This is the file name, (as stored in the Device Management repository). Note, use the same name as the actual file name.
File Category	Static	This is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This file must not be modified.
Enable Caching	This is not selected.	Caching is optional for this file.
Assign File	Custom	
Authentication Mode	This is not set.	The static files are not authenticated so do not select either of the options.

After defining the Productivity Suite license file type, upload the license file obtained from Polycom. Click the **Browse** button on the file definition screen and click the **Apply** button after uploading the file.

Repeat the instructions in this section for each model for which the license applies.

5.2.2.2.2.3.6.2 Polycom Productivity Suite License – Per Group or User

To assign the Productivity Suite license to specific groups or users, add a BroadWorks device profile type file to the Polycom UC Software VVX device profile using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	%BWMACADDRESS%-license.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	%BWFQDEVICEID%-license.cfg	This is the file name, (as stored in the Device Management repository). Note, use the same name as the actual file name.
File Category	Static	This is a static file. There are no dynamic tags in the file.
File Customization	Administrator	Allow administrator to customize the file.
Enable Caching	*This is not selected.*	Caching is optional for this file.
Assign File	Manual	
Authentication Mode	User name and password	The phone-specific file is authenticated with a user name and password.
Device Access HTTP Authentication	Digest	

At this point, the file is defined for the device profile type. Repeat the instructions above for each model to which the license applies.

To apply the license to a specific group, perform the following steps.

1) Search for and select the BroadWorks group.
2) Select the *Utilities* link in the left column from the *Group* page.
3) Select the *Device Configuration* link.
4) Search for and select the Polycom model to be licensed for the group (for example, “Polycom_VVX500”). Note that only models already assigned within the group appear on the list.
5) Select the *Files* tab.
6) Edit the *%BWMACADDRESS%-license.cfg* file.
7) Select the Custom file and click **Browse** to upload the site license file received from Polycom (0000000000000-license.cfg) to the group.
8) Click **OK** to store the file settings.
9) Repeat for each Polycom model to be licensed for the group.

To apply the license to a specific user, complete the following steps.

1) Search for and select the BroadWorks user.
2) From the user's *Profile* page, click on the *Addresses* link. If the user does not have a device assigned, assign a device profile to that user.
3) Click the *Configure Identity/Device Profile* link to access the user's device profile.
4) Select the *Files* tab.
5) Edit the *%BWMACADDRESS%-license.cfg* file.
6) Select the *Custom* file and click **Browse** to upload the site license file received from Polycom (000000000000-license.cfg) to the user.
7) Click **OK** to store the file settings.
8) Repeat for each user to be licensed.

5.2.2.2.2.3.7 Polycom Phone Service (Optional)

The Polycom Phone Service provides phone directory integration with BroadWorks.

To enable this feature on the device profile type, select *Services* for the Polycom device profile type and select the *Supports Polycom Phone Services* check box. Selecting this check box automatically loads the *%BWMACADDRESS%-directory.xml* file to the device profile type.

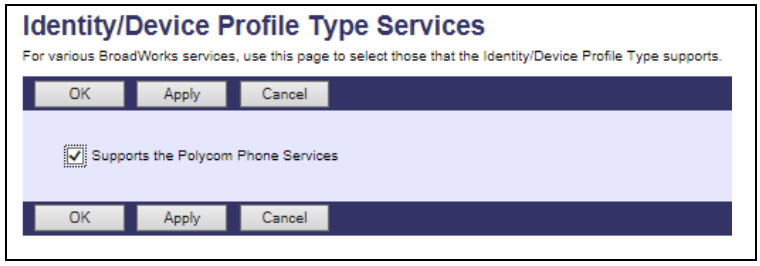

Figure 17 Enable Polycom Phone Services

Next, browse to *Files and Authentication* for the Polycom VVX device profile type, select the *%BWMACADDRESS%-directory.xml* file, and change the file settings as necessary to match the settings in the following table.

Parameter	Value	Description
Device Access File Format	%BWMACADDRESS%-directory.xml	This is the file name, which the phone uses to request the file.
Repository File Format	%BWFQDEVICEID%-directory.xml	This is the file name, (as stored in the Device Management repository).
File Category	Dynamic Per-Device	This file is unique per device.
File Customization	Disallow	This identifies who can customize this file template.
Enable Caching	This is not set.	Caching should not be enabled for device specific files.
Assign File	Custom	The file is pre-loaded.

Parameter	Value	Description
Authentication Mode	User name and password	The phone-specific file is authenticated with a user name and password.
Device Access HTTP Authentication	Digest	

This initially enables the Polycom Phone Service for all users assigned to this device profile type. An additional configuration step is required to enable this service. This step is completed on the device profile assigned to the user and is described in section *5.2.4.1 Complete Polycom Phone Services Enablement.*

5.2.3 Create Device Profile Instance

The previous sections defined the device profile type such that the system is ready to mass deploy device profiles. A device profile is an instance of the device profile type and defines the BroadWorks interface to a Polycom VVX phone deployed at a user's desk.

This section describes how to create a BroadWorks device profile instance for an individual Polycom UC Software VVX device. Device profile instances are usually created at the BroadWorks group level and assigned to users.

When the device profile is created, the authentication data must be defined. The authentication data is used by Device Management to challenge a request from a phone to download a configuration file. The device must send the credentials that match the credentials stored in the device profile.

Browse to the BroadWorks *<group>* → *Resources* → *Identity/Device Profiles* and select *Add* to add a new Polycom UC Software VVX device profile. Define the device profile instance using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Identity/Device Profile Name	<device-profile-name> Example: jc_vvx500	The device profile name is a unique identifier for the device profile instance.
Identity/Device Profile Type	<Polycom Sound Point device profile type> Example: Polycom_VVX500	From the drop-down menu, select the Polycom device profile type (created in the previous section).
Authentication	Use custom credentials	Set a unique login ID and password for each phone.
Device Access User Name	<phone-login-name> Example: jcvvx500	This is the user name to log in from the phone. The phone login user naming convention must be determined by the service provider.
Device Access Password	<phone-login-password> Example: 654321	This is the password to log in from the phone.

Example *Identity/Device Profile Add* settings:

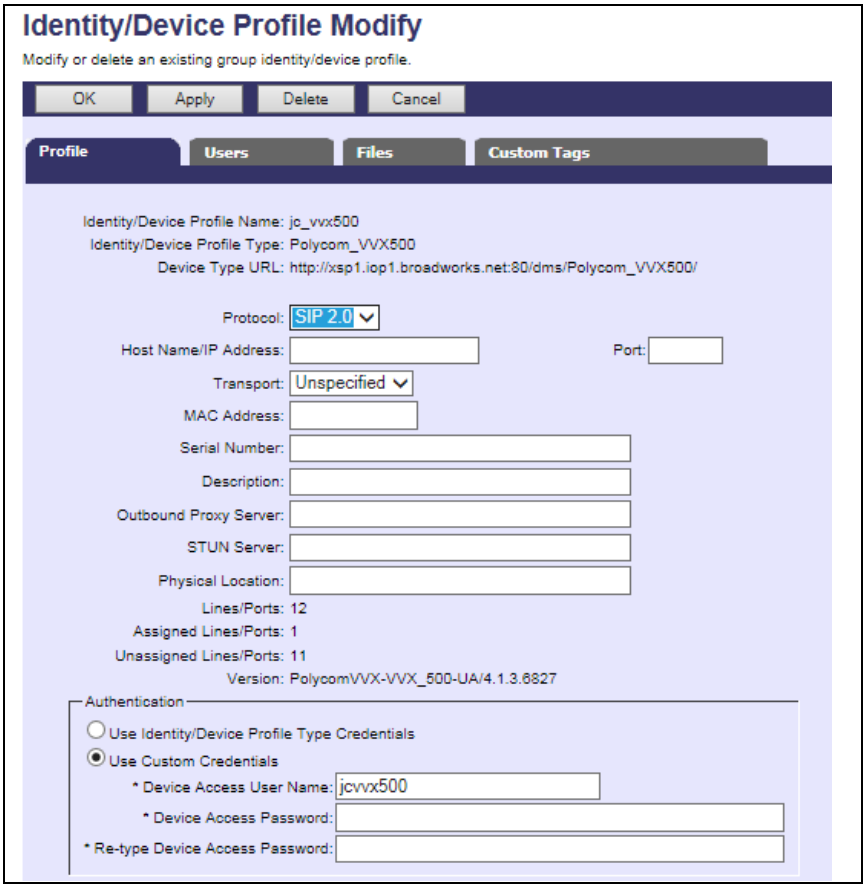

Figure 18 Identity/Device Profile Add

5.2.4 Configure BroadWorks User

The user should be configured with the desired BroadWorks configuration and services. Any services that require a specific configuration on the device are managed using Device Management and defined in the device configuration files, given that the template files are created with the correct Device Management tags.

The device profile created in the previous section should be assigned to the BroadWorks user. Assigning the device profile to the user automatically causes the Device Management feature to generate the device configuration files for this user's device.

To assign the device profile to the user, browse to the BroadWorks *<user>* → *Addresses* page and then set the parameters as described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Identity/Device Profile Name	<device-profile-name> Example: 0023poly550	From the drop-down menu, select the device profile instance (created in the previous section).

Parameter	Value	Description
Line/Port	<SIP register address-of-record> Example: 2408881000@broadsoft.com	Enter the SIP register address of record.

Example user *Addresses* settings:

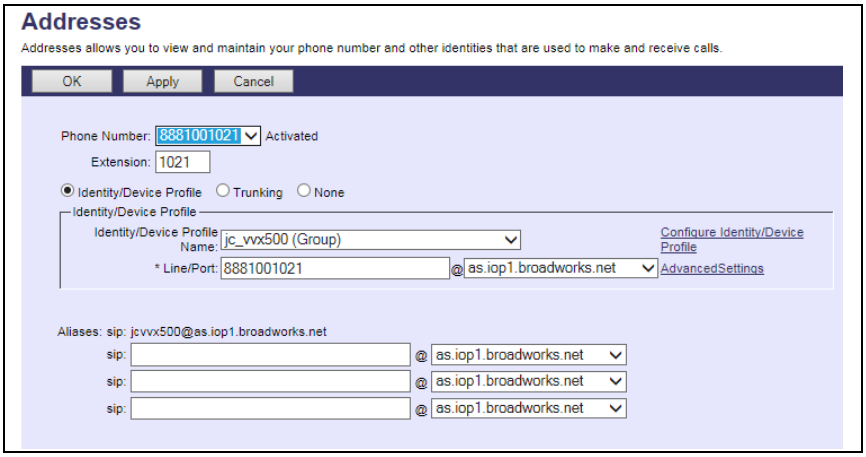

Figure 19 Assign Device Profile to User

5.2.4.1 Complete Polycom Phone Services Enablement

If the Polycom Phone Service was activated (see section *5.2.2.2.2.3.7 Polycom Phone Service*), then complete the enablement with the following configuration steps.

1) From the user's *Addresses* page, click the *Configure Identity/Device Profile* link.
2) Select the *Users* tab on the *Device Profile Modify* page.
3) Click the **Search** button to list all SIP lines configured on this device.
4) Check the *Primary Line/Port* check box next to the primary user's line.
5) Click **OK** to store the primary line setting.

The user or group administrator can now activate the service by accessing the *Polycom Phone Services* link on the *Client Applications* page. From the *Polycom Phone Services* page, the user can edit their primary line settings. On this page, the user can activate the service and choose to include their personal phone list and/or select a custom group contact list as the contacts to be synchronized with the phone.

5.2.4.2 Provide Individual Xtended Services Interface Credentials for BroadWorks Enterprise Directory Service

If the BroadWorks Enterprise Directory service was enabled (as described in section *4.4.2 BroadWorks Enterprise Directory*), complete the Xtended Services Platform authentication criterion for the specific user to allow Xsi-Actions web services authentication.

To assign the user's Xtended Services Platform criterion to the device profile assigned, browse to the BroadWorks *<user>* → *Addresses* → *Configure Identity/Device profile* page; and under *Custom Tags* tab, set the parameters as described in the following table.

Parameter	Value	Description
%XSPUSER%	User name of Xsi authentication for BroadWorks Enterprise Directory service. Example: jc-vvx500@as.iop1.braodworks.net	Provide the values required to identify the user to the BroadWorks Xtended Services Interface (Xsi) web service.
%XSPPASS%	Password of Xsi authentication for BroadWorks Enterprise Directory service. Example: abcdef	Provide the values required for authenticating to the BroadWorks Xtended Services Interface web service.

Example device profile *Custom Tags* settings:

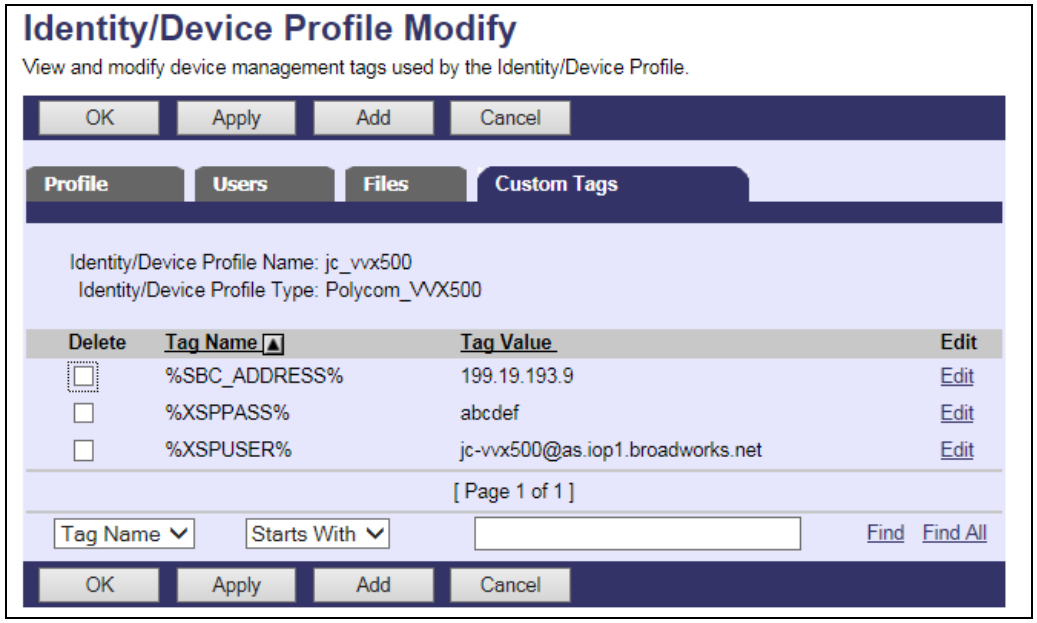

Figure 20 Device Profile Custom Tags

5.2.5 Configure Edge Device

In many deployments, an edge device, such as an Edgewater EdgeMarc, is deployed on the enterprise edge. Configure the edge device SIP server setting with the service provider's Acme Packet (or other session border controller) IP address or FQDN. However, if there is no edge device and the phones communicate directly with the service provider's SBC, skip this section.

To integrate the EdgeMarc with Device Management, the SBC address tag (%SBC_ADDRESS%) defined in section *5.2.1.1 Create System Default Tags* must be overridden at the group level with the LAN address of the EdgeMarc device. At the *Group → Utilities → Configure Device* page, select the Polycom device profile (for example, "Polycom-550"). Perform the following steps.

1) Click on the *Custom Tags* tab.
2) Click the **Add** button.
3) Add the SBC tag.
4) Enter *SBC_ADDRESS* as the tag.
5) Enter the IP address as the value (that is, the EdgeMarc LAN IP address).
6) To save the tag data, click **OK**.

This tag/value is applied to all Polycom-550 phones in the group using the modified *Device Profile Type*.

Repeat for each Polycom model provisioned in the group.

5.2.6 Enable HTTPS for Polycom UC Software VVX Phone

Polycom VVX phones can be configured to download device files using the HTTPS protocol; however, there are some limitations to be considered. The Polycom bootROM does not currently support HTTPS. The bootROM downloads the *bootrom.ld*, *sip.ld*, and *MAC.cfg* files. These files must be accessible from Device Management using the HTTP protocol. The Polycom application (*sip.ld*) supports HTTPS and downloads the remaining device configuration files using HTTPS when selected as the protocol type. The BroadWorks Xtended Services Platform (Xsp) must be configured to support both HTTP and HTTPS protocols, so that the bootROM and application files can download the required files.

To set up the phone for HTTPS support, the Root Certification Authority (CA) certificate must be loaded to the Polycom phone. The certificate cannot be a chained certificate and must point directly to the CA.

1) The certificate is loaded on the phone from the *SSL Security* menu. To go to this menu, press the **Home** button and then select *Settings → Advanced* buttons.
2) Enter the *Advanced* menu access password and select *TLS Security → Custom CA Certificates → Platform CA1→ Install Custom CA Cert.* At this location, enter the HTTP uniform resource locator (URL) for the Root CA certificate.
3) When the certificate is loaded, the phone displays the MD5 checksum. If the checksum is correct, press the **Accept** button to store the certificate to the phone.
4) When the certificate is saved, press the **Back** button and then select the *Configure TLS Profiles* menu. From this menu, choose a TLS Platform Profile to be configured for TLS provisioning.

5) Under the *TLS Platform Profiles* menu, select *CA Certificates* and then select the *All Certificates* check box.

6) Press the **Back** button repeatedly until *TLS Security* menu is reached.

7) From the *TLS Security* menu, select *TLS APPLICATIONS → Provisioning → Profile Selection*, select the TLS Platform Profile chosen previously.

8) At this point, the phone is configured to trust the Device Management system, if the correct certificates have been loaded.

For more information about support for HTTPS on Polycom phones, see the *Polycom Technical Bulletin 52609* available from the Polycom support web site.

5.2.7 Configure Polycom UC Software VVX Phone

This section describes the steps necessary to configure the Polycom UC Software VVX device to integrate with BroadWorks Device Management.

The phone must be configured with the Device Management URL and authentication user name and password. This configuration can be accomplished as described in the sections:

- *5.2.7.1 Manual Provisioning*
- *5.2.7.2 No Touch Provisioning via BroadWorks Device Management*
- *5.2.7.3 No Touch Provisioning via Polycom Zero Touch Provisioning*

5.2.7.1 Manual Provisioning

The manual provisioning method to configure the Polycom device involves using the phone's menus to configure the Device Management settings.

5.2.7.1.1 Check Enterprise/Business DHCP Server Settings

The Polycom phone uses the file server parameters configured on the phone unless *Option 66* has been defined on the DHCP server. If the DHCP server returns data set for the *Option 66* parameter, then the Polycom phone uses the address defined in this field as the server address to retrieve its configuration data.

When using manual provisioning, to make sure that the phone interfaces properly with Device Management, the *Option 66* parameter must not be set on the DHCP server. If *Option 66* is defined and cannot be cleared, then the Polycom *boot server* parameter in the DHCP menu must be set to "Static". This parameter is set at boot time by accessing the *Setup* menu.

1) Click the **Setup** button.

2) Enter "456" as the password.

3) Select the *DHCP* menu.

4) Set the *Boot Server* parameter to "Static".

5) Save the configuration changes and start the phone initialization.

5.2.7.1.2 Provision Device Management Settings

Launch the web interface of the phone by accessing *http://<phone's IP address>*. Log in as *Admin* by selecting the respective button, provide the password, and then click **Submit**. The default admin password is "456".

At the phone's admin configuration page, from the *Settings* menu, select *Provisioning Server* from the drop-down menu.

Provision the following settings on the phone:

Settings	Description
Server Type	Indicate the server type, that is, HTTP (or, HTTPS can be used as an option).
Server Address	Enter the device access FQDN and device access URI. Example: http://xsp.iop1.broadworks.net:80/dms/Polycom_VVX500/
Server User	This is the Device Management user name.
Server Password	This is the Device Management password.

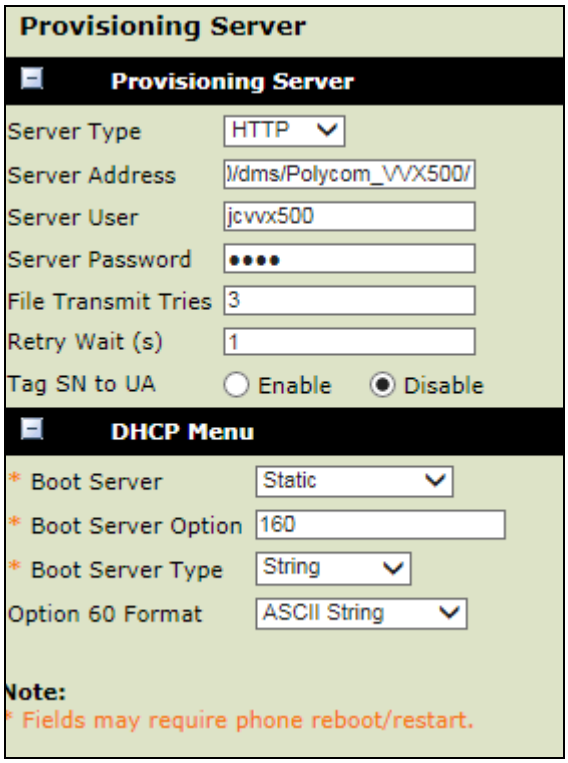

Figure 21 VVX Provisioning Server Configuration

The settings must match those of the device profile instance assigned to the user. The applicable settings are highlighted in the following example.

Figure 22 Identity/Device Type Credentials – Custom Credentials

After all parameters are entered, click the **Save** button. Allow the phone to reboot and retrieve the new configuration parameters from Device Management.

5.2.7.2 No Touch Provisioning via BroadWorks Device Management

The No Touch Provisioning method via BroadWorks Device Management uses DHCP and Device Management default configuration files. This enables configuration of the phone out-of-the-box without pre-provisioning before sending it to a customer's site.

No Touch Provisioning is done using the DHCP options provided by the end customer's DHCP server. The steps are as follows:

1) The phones are shipped to the end customer without pre-provisioning.
2) The end customer's DHCP server is configured with *Option 66* or *160* with the default Device Management URL.
3) The phone is plugged in and it receives the default Device Management URL from the DHCP server.
4) The phone queries for the default product file from Device Management.
5) The phone receives the default device file from Device Management and provisions the phone with the physical Device Management URL for the specific device model.
6) The phone resynchronizes with Device Management and activates a login soft key.

7) The end user or administrator enters the device user ID and password using the **QSetup** button on the phone.

8) The phone resynchronizes with Device Management and downloads the files associated with the credentials supplied via the **QSetup** button.

Device Management must be configured to facilitate the No Touch Provisioning method. Configuration can be performed using the Device Management import function or done manually. Each method is described in the following subsections

5.2.7.2.1 Configuration Method 1: Import

This section identifies the steps necessary to make use of the Device Management import feature to configure BroadWorks to add the Device Management Defaults device type for No Touch Provisioning.

The import method is available in BroadWorks Release 17.0 and later. For previous releases, use the manual configuration method described in the next section.

Download the Polycom UC Software device CPE kit from BroadSoft Xchange at www.broadsoft.com/xchange. Extract the *DeviceManagementDefaults.DTAF.zip* file from the CPE kit. This is the import file.

Log in to BroadWorks as an administrator. Browse to *System* → *Resources* → *Identity/Device Profile Types* and select *Import*. Select *Browse* to find the extracted DTAF file and click **OK** to start the import.

After the import finishes, the following post-import configuration steps must be completed.

Browse to *System* → *Resources* → *Identity/Device Profile Types* and perform a search to find the imported *DeviceManagementDefaults* device profile type. Browse to the *Profile* page and change the Device Management Device Access FQDN to your Xtended Services Platform or Xtended Services Platform cluster address.

Example:

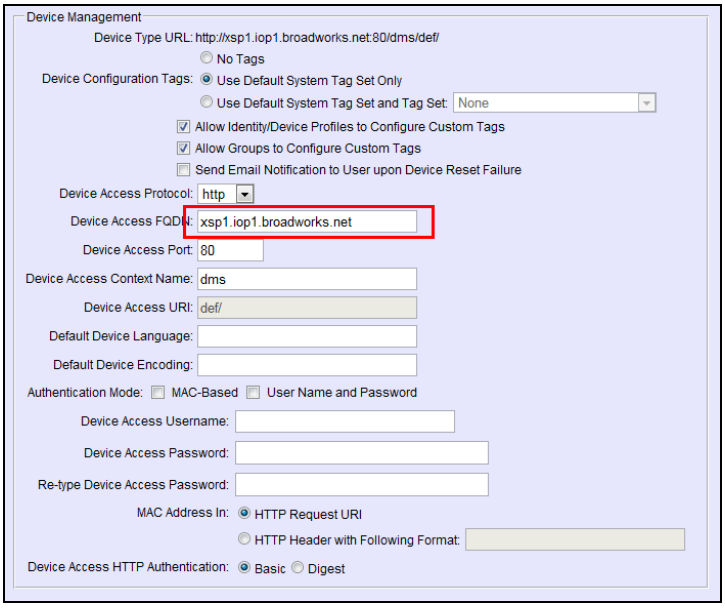

Figure 23 Device Access FQDN

Next, using the *Files and Authentication* link, select the option to rebuild all the system files.

Firmware files must be obtained from Polycom. These files are not included in the import. For firmware upload instructions, see section *5.2.2.2.2.3.1 Application Firmware*.

5.2.7.2.2 Configuration Method 2: Manual

This section identifies the manual steps necessary configure BroadWorks to add the Device Management Defaults device type for No Touch Provisioning

The manual method must be used for BroadWorks releases prior to Release 17.0. It is an optional method in Release 17.0 and later. The steps in this section can also be followed to update previously imported or configured device profile type(s) with new configuration files and firmware.

5.2.7.2.2.1 Create Default Device Profile Type

A Device Management default device profile type must be created. This device profile type can be configured to serve default provisioning files to Polycom endpoints, as well as other vendor devices.

Create a default device profile type as shown in the following figure. Only the device management settings are important in this context since the profile type is used only to serve default provisioning files. The standard and advanced settings do not matter.

5.2.7.2.2.1.1 Configure Standard Options

The device profile type name and standard options do not matter, but an example is provided for reference. All settings can be left with their default values.

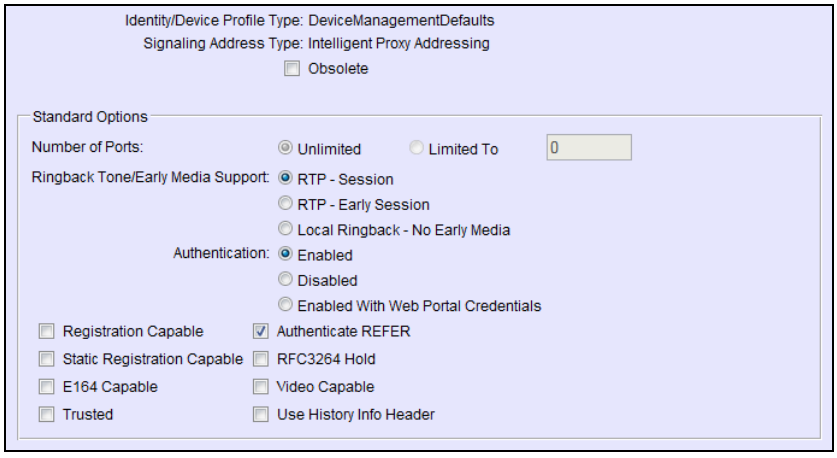

Figure 24 Default Device Profile Type

5.2.7.2.2.1.2 Configure Advanced Options

The advanced options do not matter, but an example is provided for reference. All settings can be left with their default values.

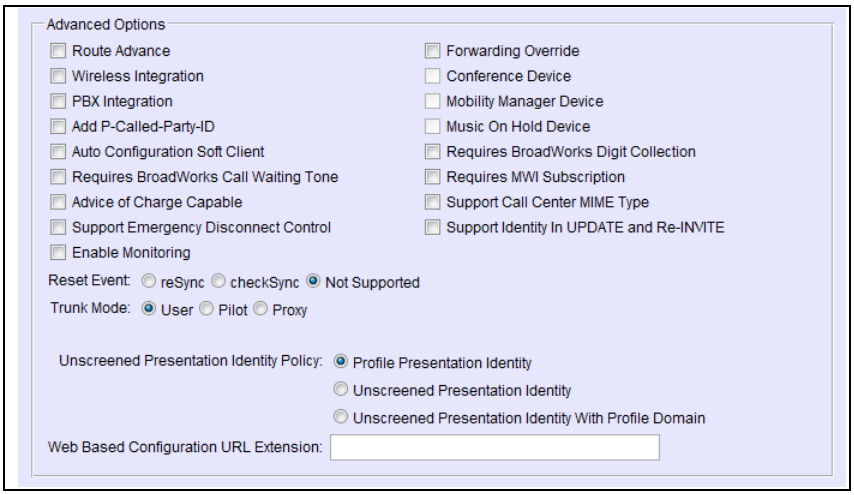

Figure 25 Configure Advanced Options

5.2.7.2.2.1.3 Configure Device Management Options

Configure the device profile type *Device Management Options* as directed in the following table. These are common settings, which apply to all devices enabled for Device Management.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Configuration Tags	Use Default System Tag Set Only	
Allow Identity/Device Profiles to Configure Custom Tags	Checked	Optional
Allow Groups to Configure Custom Tags	Checked	Optional
Device Access Protocol	http	
Device Access FQDN	<BroadWorks-XSP-Cluster-Address> Example: xsp.iop1.broadworks.net	If using an Xtended Services Platform farm, set this to the Xtended Services Platform cluster FQDN. Otherwise, set it to the individual Xtended Services Platform FQDN or IP address.
Device Access Port	<BroadWorks-XSP-Port> Example: 80	This should be set to “80”.
Device Access Context Name	dms	This does not need to be defined. BroadWorks defaults to the system-defined value.
Device Access URI	def	This defines the directory the Xtended Services Platform uses to access the default configuration files.

Example *Device Management Options* settings:

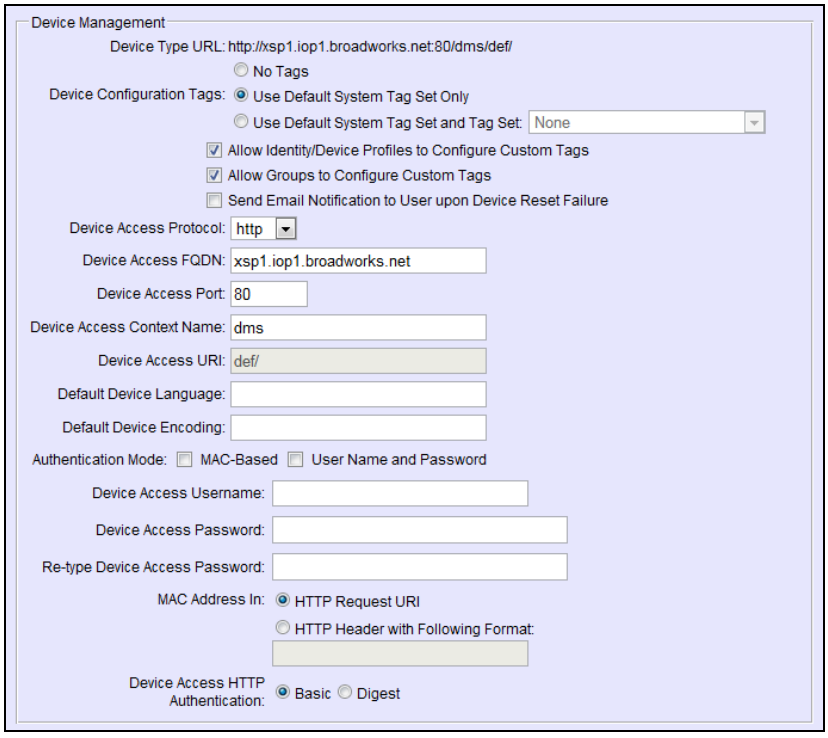

Figure 26 Device Management Options Settings

5.2.7.2.2.2 Define Device Profile Type Files

This section describes the BroadWorks Device Management configuration necessary to identify the configuration files used to enable the *DeviceManagementDefaults* device type for Polycom UC Software devices. The files must be defined as described in the following sections:

- *5.2.7.2.2.2.1 000000000000.cfg*
- *5.2.7.2.2.2.2 qsetup.cfg*
- *5.2.7.2.2.2.3 provisioning.cfg*

5.2.7.2.2.2.1 000000000000.cfg

Polycom devices request the default *macaddress* file (*000000000000.cfg*) from Device Management if a request for the *macaddress.cfg* file fails. Since the phone does not know the URL for the *macaddress.cfg* file, it must fall back to the default file. The *000000000000.cfg* file provides default instructions applicable to any Polycom device. This file identifies the following files for the phone to download:

- *sip.ld firmware* file
- *qsetup.cfg* file to trigger the Quick Setup soft key and its functionality
- *provisioning.cfg* identifies the Device Management URL for each model

Add a BroadWorks device profile type file to the *DeviceManagementDefaults* device profile for the *000000000000.cfg* file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	000000000000.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	000000000000.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Static	This file is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This identifies who can customize this file template.
Enable Caching	Selected	Caching is recommended for this file.
Assign File	Custom	
Authentication Mode	None	The static files are not authenticated so do not select either of the options.

After defining the file, upload the *000000000000-default.cfg* file template downloaded from BroadSoft Xchange. Be sure to upload the *000000000000-default.cfg* and not the *000000000000.cfg* file. Use the **Browse** button on the *File Definition* screen. Be sure to click **Apply** after uploading the file.

Example *000000000000.cfg* file settings:

Figure 27 000000000000.cfg File

5.2.7.2.2.2.2 qsetup.cfg

Polycom has implemented a Quick Setup (QSetup) soft key. Pressing this soft key at phone initialization automatically brings up the file server menu and the associated parameters on the Polycom UC Software device. By identifying this configuration file name in the *0000000000000.cfg* file, the Quick Setup soft key is presented on the device.

Add a BroadWorks device profile type file to the *DeviceManagementDefaults* device profile for the *qsetup.cfg* file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	qsetup.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	qsetup.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Static	This file is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This identifies who can customize this file template.
Enable Caching	Selected	Caching is recommended for this file.
Assign File	Custom	
Authentication Mode	None	The static files are not authenticated so do not select either of the options.

After defining the file, upload the corresponding *qsetup.cfg* file template downloaded from BroadSoft Xchange. Use the *Browse* button on the file definition screen. Be sure to select *Apply* after uploading the file.

Example *qsetup.cfg* file settings:

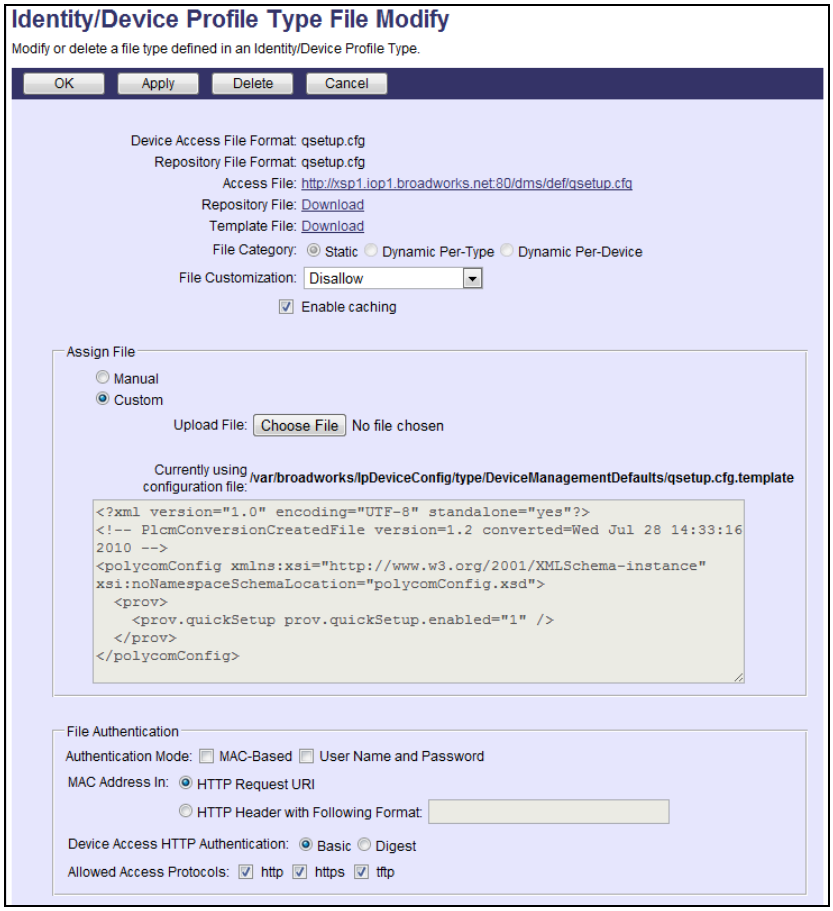

Figure 28 qsetup.cfg File

5.2.7.2.2.2.3 provisioning.cfg

The *provisioning.cfg* file identifies the specific Device Management URL for each model. This provides the proper URL for the phone to download the *macaddress.cfg* file.

Add a BroadWorks device profile type file to the DeviceManagementDefaults device profile for the *provisioning.cfg* file using the settings described in the following table.

Parameters not identified in the following table can usually be left with their default values.

Parameter	Value	Description
Device Access File Format	provisioning.cfg	This is the file name, which the phone uses to request the file.
Repository File Format	provisioning-%BWTIMESTAMP%.cfg	This is the file name, (as stored in the Device Management repository).
File Category	Dynamic Per-Type	This file is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This identifies who can customize this file template.

Parameter	Value	Description
Enable Caching	Selected	Caching is recommended for this file.
Assign File	Custom	
Authentication Mode	None	The static files are not authenticated so do not select either of the options.

The *provisioning.cfg* template file in the CPE kit downloaded from BroadSoft Xchange is tailored to work with the device profile types imported from the DTAF files included in the CPE kit. If the device access URI of any device profile type is different from the defined values in the CPE kit, the Device Management URLs for each phone model in the file must be modified to match that of the service provider's Device Management URL.

After modifying the *provisioning.cfg* template file, upload the file. Use the *Browse* button on the file definition screen. Be sure to select *Apply* after uploading the file.

Example *provisioning.cfg* file settings:

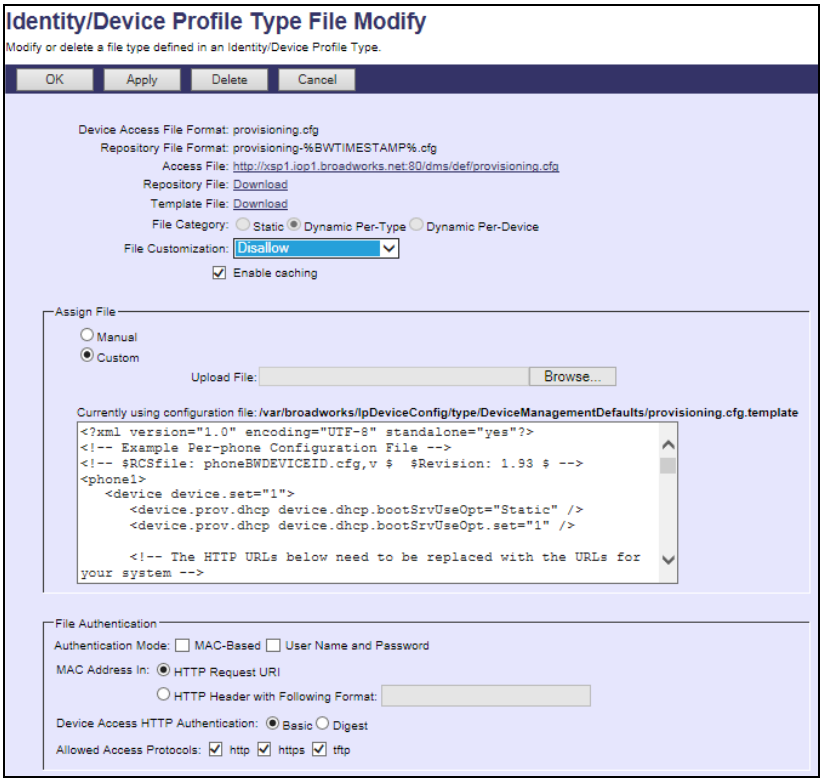

Figure 29 provisioning.cfg File

5.2.7.3 No Touch Provisioning via Polycom Zero Touch Provisioning

Polycom Zero Touch Provisioning (ZTP) is a service that is hosted by Polycom. At boot time, the Polycom phone automatically queries the Polycom ZTP server for provisioning data. For phones served by BroadWorks, the server is configured to provide the Device Management URL required for the phone to fully provision. For more information about this service, contact Polycom.

5.3 Upgrade from Previous CPE Kits

Previous configuration sections are primarily structured to import or manually configure a Polycom device profile types for the first time. Many of the steps are not necessary when upgrading to a new firmware release or CPE kit version.

5.3.1 General Recommendations for Upgrades

Upgrades can be resource intensive if not managed properly. Recommendations for a managed upgrade include:

- Perform the upgrade during a maintenance window.
- Keep the previous firmware on the system in case a downgrade is required. Older versions can be deleted.
- Perform the upgrade by group rather than system-wide. To do so:
  1) Upload the firmware at the system level.
  2) Select the group to upgrade.
  3) Select *Utilities* → *Device Configuration*.
  4) Search for and select the Polycom model to upgrade.
  5) Select *Files*. Upload the new or updated configuration files at the group level. (To identify new or modified configuration files, see the relevant upgrade section.)
  6) Select *Files* → *Custom Tags*.
  7) Add the *APP_VERSION* tag and set it to the new firmware version (for example, "4.1.3"). This overrides the *APP_VERSION* tag at the group level.
  8) On the *Files* page, select *Rebuild the files*. This rebuilds all the configuration files associated with the selected Polycom device profile type in this group.
  9) On the *Files* page, select *Reset the phones*. This causes the phones to restart and pick up the new firmware and configuration files.
  10) Repeat steps 2 through 9 for each Polycom model in the group to upgrade.
- After all groups have been upgraded, complete the following steps to update the system device profile types and reset the group device profile types to defaults.
  1) Browse to *System* → *Resources* → *Device Management Tag Sets*. Search for and select *Polycom-Tags*. Set the *APP_VERSION* tag to the new firmware version. If there are any new devices, add the new device *APP_VERSION* tag.
  2) Browse to *System* → *Resources* → *Identity/Device Profile Types*. Search for and select the Polycom model device type. Upload the new or updated configuration files at the group level. (To identify new or modified configuration files, see the relevant upgrade section.) Repeat for each Polycom model.
  3) (Optional) For each group, go to *Utilities* → *Device Configuration.* Search for and select the upgraded Polycom model. Select *Files* → *Custom Tags* and remove the custom *APP_VERSION* tag. In general, it is acceptable to leave this tag in place; however it overrides the system tag setting, so if this is not desired, remove it. Repeat for each Polycom model.
  4) For each group, go to *Utilities* → *Device Configuration.* Search for and select the upgraded Polycom model. Select *Files* and set each updated file back to "Default". Repeat for each Polycom model.

5.3.2 Upgrade from 4.0.x to 4.1.2 Maintenance Release (For VVX500 and VVX600 Only)

The following steps are used to upgrade the Polycom Device from 4.0.x to 4.1.2:

1) Get the 4.1.2 firmware package from Polycom.
2) Upload the new Polycom application firmware version 4.1.2 for each Polycom VVX500 and VVX600 phone model only as described in section *5.2.2.2.2.3.1 Application Firmware.*
3) Update the *bwmacaddress.cfg* file as described in section *5.2.2.2.2.2.1 BWMACADDRESS.cfg*.

The remaining steps are done during a maintenance window.

4) Perform the upgrade by group, following the steps in section *5.3.1 General Recommendations for Upgrades*. Alternatively, omit the group steps and perform the upgrade at the system level.

5.3.3 Upgrade from 4.1.2 or 4.1.3 to 4.1.3 Maintenance Release (For VVX500 and VVX600 Only)

The following steps are used to upgrade the Polycom device from 4.1.2 to 4.1.3:

1) Get latest 4.1.3 firmware package from Polycom.
2) Upload the new Polycom application firmware version 4.1.3 for each Polycom VVX500 and VVX600 phone model only as described in section *5.2.2.2.2.3.1 Application Firmware.*

   Update the *bwmacaddress.cfg file* as described in section *5.2.2.2.2.2.1 BWMACADDRESS.cfg*.
3) Update the *phoneBWMACADDRESS.cfg* file
4) Add additional system and custom tags as described in section *5.2.1 Configure BroadWorks Tags*.

The remaining steps are done during a maintenance window.

5) Perform the upgrade by group, following the steps in section *5.3.1 General Recommendations for Upgrades*. Alternatively, omit the group steps and perform the upgrade at the system level.

5.3.4 Upgrade from 4.1.2 to 4.1.4 Maintenance Release (For VVX300/310 and VVX400/410 Only)

The following steps are used to upgrade the Polycom device from 4.1.2 to 4.1.4:

1) Add the *APP_VERSION_VVX-300-400* tag with the value “4.1.4” to the *Polycom-Tags* tag set.
2) Get the 4.1.4 firmware package from Polycom.
3) Import VVX300 and VVX400 DTAF files from the CPE kit for VVX300/310 and VVX400/410 phones respectively.
4) Upload the new Polycom application firmware version 4.1.4 for each Polycom VVX300/310 and VVX400/410 phone model only as described in section *5.2.2.2.2.3.1 Application Firmware.*
5) Update the *bwmacaddress.cfg* file as described in section *5.2.2.2.2.2.2 BWMACADDRESS.cfg*.

The remaining steps are done during a maintenance window.

6) Perform the upgrade by group, following the steps as described in section *5.3.1 General Recommendations for Upgrades*. Alternatively, omit the group steps and perform the upgrade at the system level.

5.3.5 Upgrade from 4.1.3 or 4.1.4 to 5.0.0 Release

The following steps are used to upgrade the Polycom device from 4.1.3 or 4.1.4 to 5.0.0:

1) Set the *APP_VERSION_VVX-300-400* and *APP_VERSION_VVX-500-600* tags to "5.0.0" in the *Polycom-Tags* tag set.

2) Get the 5.0.0 firmware package from Polycom.

3) Upload the new Polycom application firmware version 5.0.0 for each Polycom VVX300/310/400/410/500/600 phone model only as described in section *5.2.2.2.2.3.1 Application Firmware.*

4) Perform the upgrade by group, following the steps in section *5.3.1 General Recommendations for Upgrades*. Alternatively, omit the group steps and perform the upgrade at the system level.

Appendix A: Sample Polycom® VVX Phone Configuration Files

NOTE: The following samples are examples only and they should only be used as a reference. DO NOT CUT AND PASTE THESE EXAMPLES TO GENERATE YOUR CONFIGURATION FILES. The Polycom configuration files change between releases so be sure to use the configuration files from Polycom for the specific release to generate your configuration files.

Phone-specific Master Configuration File: <mac-address>.cfg

NOTE: This is an example file and it should only be used for reference. This file is distributed by Polycom as *000000000000.cfg*. It must be renamed to *<mac-address>.cfg* using the MAC address for the specific phone.

```
<?xml version="1.0" standalone="yes"?>
<!-- Default Master SIP Configuration File-->
<!-- For information on configuring Polycom VoIP phones please refer to
the -->
<!-- Configuration File Management white paper available from: -->
<!--
http://www.polycom.com/common/documents/whitepapers/configuration_file_ma
nagement_on_soundpoint_ip_phones.pdf -->
<!-- $RCSfile: 000000000000.cfg,v $  $Revision: 1.23.8.3 $ -->
<APPLICATION APP_FILE_PATH="%APP_VERSION%.sip.ld"
CONFIG_FILES="phone%BWMACADDRESS%.cfg,sys.cfg" MISC_FILES=""
LOG_FILE_DIRECTORY="" OVERRIDES_DIRECTORY="" CONTACTS_DIRECTORY=""
LICENSE_DIRECTORY="">

   <APPLICATION_VVX300 APP_FILE_PATH_VVX500="%APP_VERSION_VVX-300-
400%.sip.ld" CONFIG_FILES_VVX300="phone%BWMACADDRESS%.cfg,sys.cfg"/>
   <APPLICATION_VVX400 APP_FILE_PATH_VVX600="%APP_VERSION_VVX-300-
400%.sip.ld" CONFIG_FILES_VVX400="phone%BWMACADDRESS%.cfg,sys.cfg"/>
   <APPLICATION_VVX500 APP_FILE_PATH_VVX500="%APP_VERSION_VVX-500-
600%.sip.ld" CONFIG_FILES_VVX500="phone%BWMACADDRESS%.cfg,sys.cfg"/>
   <APPLICATION_VVX600 APP_FILE_PATH_VVX600="%APP_VERSION_VVX-500-
600%.sip.ld" CONFIG_FILES_VVX600="phone%BWMACADDRESS%.cfg,sys.cfg"/>
</APPLICATION>
```

System Default File: sys.cfg

NOTE: This is an example file and it should only be used for reference.

Note that in the following example, only the top portion of the file is shown.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<!-- PlcmConversionCreatedFile version=1.2 converted=Wed Jul 28 14:33:16
2010 -->
<polycomConfig xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="polycomConfig.xsd">
  <bg>
    <bg.VVX_1500>
      <bg.VVX_1500.color bg.VVX_1500.color.selection="3,1">
```

```
        <bg.VVX_1500.color.bm bg.VVX_1500.color.bm.1.name="" />
      </bg.VVX_1500.color>
    </bg.VVX_1500>
    <bg.hiRes>
      <bg.hiRes.color>
        <bg.hiRes.color.bm bg.hiRes.color.bm.2.name="">
          <bg.hiRes.color.bm.2.em bg.hiRes.color.bm.2.em.name="" />
        </bg.hiRes.color.bm>
      </bg.hiRes.color>
      <bg.hiRes.gray bg.hiRes.gray.selection="3,2">
        <bg.hiRes.gray.bm bg.hiRes.gray.bm.2.adj="-2"
bg.hiRes.gray.bm.2.name="">
          <bg.hiRes.gray.bm.2.em bg.hiRes.gray.bm.2.em.name="" />
        </bg.hiRes.gray.bm>
      </bg.hiRes.gray>
    </bg.hiRes>
    <bg.medRes>
      <bg.medRes.gray>
        <bg.medRes.gray.bm bg.medRes.gray.bm.2.adj="-2"
bg.medRes.gray.bm.2.name="" />
      </bg.medRes.gray>
    </bg.medRes>
  </bg>
  <call>
    <call.shared call.shared.exposeAutoHolds="1"
call.shared.oneTouchResume="1" />
  </call>
  <dialplan dialplan.digitmap="%DIAL_PLAN%" />
  <feature>
    <feature.enhancedFeatureKeys feature.enhancedFeatureKeys.enabled="1"
/>
    <feature.callRecording feature.callRecording.enabled="1" />
    <feature.nWayConference feature.nWayConference.enabled="1" />
    <feature.urlDialing feature.urlDialing.enabled="0" />
  </feature>

  <video video.autoFullScreen="%VIDEO_SCREEN_MODE%"
video.maxCallRate="%VIDEO_CALL_RATE%" video.quality="%VIDEO_QUALITY%">
    <video.camera video.camera.frameRate="%VIDEO_FRAME_RATE%" />
    <video.localCameraView>
      <video.localCameraView.fullScreen
video.localCameraView.fullScreen.mode="%VIDEO_LOCAL_MODE%" />
    </video.localCameraView>
  </video>
  <voIpProt>
    <voIpProt.SIP>
      <voIpProt.SIP.acd
voIpProt.SIP.acd.signalingMethod="%FEATURE_SYNC_ACD%" />
      <voIpProt.SIP.alertInfo voIpProt.SIP.alertInfo.1.class="custom1"
voIpProt.SIP.alertInfo.1.value="http://127.0.0.1/Bellcore-dr2"
voIpProt.SIP.alertInfo.2.class="custom2"
voIpProt.SIP.alertInfo.2.value="http://127.0.0.1/Bellcore-dr3"
voIpProt.SIP.alertInfo.3.class="custom3"
voIpProt.SIP.alertInfo.3.value="http://127.0.0.1/Bellcore-dr4"
voIpProt.SIP.alertInfo.4.class="custom1"
voIpProt.SIP.alertInfo.4.value="http://127.0.0.1/Bellcore-dr5"
voIpProt.SIP.alertInfo.5.class="autoAnswer"
voIpProt.SIP.alertInfo.5.value="auto-answer" />
      <voIpProt.SIP.outboundProxy
voIpProt.SIP.outboundProxy.address="%SBC_ADDRESS%"
voIpProt.SIP.outboundProxy.port="%SBC_PORT%"
voIpProt.SIP.outboundProxy.transport="%SBC_TRANSPORT%" />
```

```
      <voIpProt.SIP.requestValidation>
        <voIpProt.SIP.requestValidation.digest
voIpProt.SIP.requestValidation.digest.realm="%BWASCLUSTERFQDN%" />
      </voIpProt.SIP.requestValidation>
      <voIpProt.SIP.specialEvent>
        <voIpProt.SIP.specialEvent.checkSync
voIpProt.SIP.specialEvent.checkSync.alwaysReboot="1" />
      </voIpProt.SIP.specialEvent>
    </voIpProt.SIP>
    <voIpProt.server voIpProt.server.1.address="%BWASCLUSTERFQDN%"
voIpProt.server.1.transport="UDPOnly" />
  </voIpProt>
</polycomConfig>
```

Phone-Specific File: phone<BWMACADDRESS>.cfg

NOTE: This is an example file and it should only be used for reference.

This file is distributed by Polycom as *phone1.cfg*. The file must be renamed to make it unique for each device.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<!-- PlcmConversionCreatedFile version=1.2 converted=Wed Jul 28 14:33:16
2010 -->
<!-- Example Per-phone Configuration File -->
<!-- $RCSfile: phoneBWMACADDRESS.cfg,v $  $Revision: 1.93 $ -->
<polycomConfig xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="polycomConfig.xsd">
  <attendant attendant.uri="%BWBLF-URI-1%" />
  <device>
    <device.prov
device.prov.serverName="%BWDEVICEACCESSFQDN%:%BWDEVICEACCESSPORT%/%BWDMSC
ONTEXT%/%BWDEVICEACCESSURI%" />
  </device>
  <lcl>
    <lcl.ml lcl.ml.lang="%BWLANGUAGE-1%" />
  </lcl>
  <msg msg.bypassInstantMessage="1">
    <msg.mwi msg.mwi.1.callBack="%BWVOICE-PORTAL-NUMBER-1%"
msg.mwi.1.callBackMode="contact" msg.mwi.10.callBack="%BWVOICE-PORTAL-
NUMBER-10%" msg.mwi.10.callBackMode="contact"
msg.mwi.11.callBack="%BWVOICE-PORTAL-NUMBER-11%"
msg.mwi.11.callBackMode="contact" msg.mwi.12.callBack="%BWVOICE-PORTAL-
NUMBER-12%" msg.mwi.12.callBackMode="contact"
msg.mwi.2.callBack="%BWVOICE-PORTAL-NUMBER-2%"
msg.mwi.2.callBackMode="contact" msg.mwi.3.callBack="%BWVOICE-PORTAL-
NUMBER-3%" msg.mwi.3.callBackMode="contact" msg.mwi.4.callBack="%BWVOICE-
PORTAL-NUMBER-4%" msg.mwi.4.callBackMode="contact"
msg.mwi.5.callBack="%BWVOICE-PORTAL-NUMBER-5%"
msg.mwi.5.callBackMode="contact" msg.mwi.6.callBack="%BWVOICE-PORTAL-
NUMBER-6%" msg.mwi.6.callBackMode="contact" msg.mwi.7.callBack="%BWVOICE-
PORTAL-NUMBER-7%" msg.mwi.7.callBackMode="contact"
msg.mwi.8.callBack="%BWVOICE-PORTAL-NUMBER-8%"
msg.mwi.8.callBackMode="contact" msg.mwi.9.callBack="%BWVOICE-PORTAL-
NUMBER-9%" msg.mwi.9.callBackMode="contact" />
  </msg>
  <reg reg.1.address="%BWLINEPORT-1%" reg.1.bargeInEnabled="%BWSCA-
BRIDGING-BINARY-1%" reg.1.displayName="%BWFIRSTNAME-1% %BWLASTNAME-1%"
reg.1.label="%BWEXTENSION-1%" reg.1.type="%BWSHAREDLINE-1%"
```

```
reg.10.address="%BWLINEPORT-10%" reg.10.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-10%" reg.10.label="%BWEXTENSION-10%" reg.10.type="%BWSHAREDLINE-
10%" reg.11.address="%BWLINEPORT-11%" reg.11.bargeInEnabled="%BWSCA-
BRIDGING-BINARY-11%" reg.11.label="%BWEXTENSION-11%"
reg.11.type="%BWSHAREDLINE-11%" reg.12.address="%BWLINEPORT-12%"
reg.12.bargeInEnabled="%BWSCA-BRIDGING-BINARY-12%"
reg.12.label="%BWEXTENSION-12%" reg.12.type="%BWSHAREDLINE-12%"
reg.2.address="%BWLINEPORT-2%" reg.2.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-2%" reg.2.label="%BWEXTENSION-2%" reg.2.type="%BWSHAREDLINE-2%"
reg.3.address="%BWLINEPORT-3%" reg.3.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-3%" reg.3.displayName="%BWFIRSTNAME-3% %BWLASTNAME-3%"
reg.3.label="%BWEXTENSION-3%" reg.3.type="%BWSHAREDLINE-3%"
reg.4.address="%BWLINEPORT-4%" reg.4.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-4%" reg.4.displayName="%BWFIRSTNAME-4% %BWLASTNAME-4%"
reg.4.label="%BWEXTENSION-4%" reg.4.type="%BWSHAREDLINE-4%"
reg.5.address="%BWLINEPORT-5%" reg.5.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-5%" reg.5.displayName="%BWFIRSTNAME-5% %BWLASTNAME-5%"
reg.5.label="%BWEXTENSION-5%" reg.5.type="%BWSHAREDLINE-5%"
reg.6.address="%BWLINEPORT-6%" reg.6.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-6%" reg.6.displayName="%BWFIRSTNAME-6% %BWLASTNAME-6%"
reg.6.label="%BWEXTENSION-6%" reg.6.type="%BWSHAREDLINE-6%"
reg.7.address="%BWLINEPORT-7%" reg.7.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-7%" reg.7.label="%BWEXTENSION-7%" reg.7.type="%BWSHAREDLINE-7%"
reg.8.address="%BWLINEPORT-8%" reg.8.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-8%" reg.8.label="%BWEXTENSION-8%" reg.8.type="%BWSHAREDLINE-8%"
reg.9.address="%BWLINEPORT-9%" reg.9.bargeInEnabled="%BWSCA-BRIDGING-
BINARY-9%" reg.9.label="%BWEXTENSION-9%" reg.9.type="%BWSHAREDLINE-9%">
    <reg.1.auth reg.1.auth.password="%BWAUTHPASSWORD-1%"
reg.1.auth.userId="%BWAUTHUSER-1%" />
    <reg.1.server reg.1.server.1.address="%BWHOST-1%" />
    <reg.1.serverFeatureControl
reg.1.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.1.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.10.auth reg.10.auth.password="%BWAUTHPASSWORD-10%"
reg.10.auth.userId="%BWAUTHUSER-10%" />
    <reg.10.server reg.10.server.1.address="%BWHOST-10%" />
    <reg.10.serverFeatureControl
reg.10.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.10.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.11.auth reg.11.auth.password="%BWAUTHPASSWORD-11%"
reg.11.auth.userId="%BWAUTHUSER-11%" />
    <reg.11.server reg.11.server.1.address="%BWHOST-11%" />
    <reg.11.serverFeatureControl
reg.11.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.11.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.12.auth reg.12.auth.password="%BWAUTHPASSWORD-12%"
reg.12.auth.userId="%BWAUTHUSER-12%" />
    <reg.12.server reg.12.server.1.address="%BWHOST-12%" />
    <reg.12.serverFeatureControl
reg.12.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.12.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.2.auth reg.2.auth.password="%BWAUTHPASSWORD-2%"
reg.2.auth.userId="%BWAUTHUSER-2%" />
    <reg.2.server reg.2.server.1.address="%BWHOST-2%" />
    <reg.2.serverFeatureControl
reg.2.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.2.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.3.auth reg.3.auth.password="%BWAUTHPASSWORD-3%"
reg.3.auth.userId="%BWAUTHUSER-3%" />
    <reg.3.server reg.3.server.1.address="%BWHOST-3%" />
```

```
    <reg.3.serverFeatureControl
reg.3.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.3.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.4.auth reg.4.auth.password="%BWAUTHPASSWORD-4%"
reg.4.auth.userId="%BWAUTHUSER-4%" />
    <reg.4.server reg.4.server.1.address="%BWHOST-4%" />
    <reg.4.serverFeatureControl
reg.4.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.4.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.5.auth reg.5.auth.password="%BWAUTHPASSWORD-5%"
reg.5.auth.userId="%BWAUTHUSER-5%" />
    <reg.5.server reg.5.server.1.address="%BWHOST-5%" />
    <reg.5.serverFeatureControl
reg.5.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.5.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.6.auth reg.6.auth.password="%BWAUTHPASSWORD-6%"
reg.6.auth.userId="%BWAUTHUSER-6%" />
    <reg.6.server reg.6.server.1.address="%BWHOST-6%" />
    <reg.6.serverFeatureControl
reg.6.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.6.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.7.auth reg.7.auth.password="%BWAUTHPASSWORD-7%"
reg.7.auth.userId="%BWAUTHUSER-7%" />
    <reg.7.server reg.7.server.1.address="%BWHOST-7%" />
    <reg.7.serverFeatureControl
reg.7.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.7.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.8.auth reg.8.auth.password="%BWAUTHPASSWORD-8%"
reg.8.auth.userId="%BWAUTHUSER-8%" />
    <reg.8.server reg.8.server.1.address="%BWHOST-8%" />
    <reg.8.serverFeatureControl
reg.8.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.8.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
    <reg.9.auth reg.9.auth.password="%BWAUTHPASSWORD-9%"
reg.9.auth.userId="%BWAUTHUSER-9%" />
    <reg.9.server reg.9.server.1.address="%BWHOST-9%" />
    <reg.9.serverFeatureControl
reg.9.serverFeatureControl.cf="%FEATURE_SYNC_CF%"
reg.9.serverFeatureControl.dnd="%FEATURE_SYNC_DND%" />
  </reg>
  <tcpIpApp>
    <tcpIpApp.sntp tcpIpApp.sntp.gmtOffset="%BWTIMEZONE-1%" />
  </tcpIpApp>

  <!-- ACD Feature -->
  <feature>
    <feature.acdAgentAvailability
feature.acdAgentAvailability.enabled="%FEATURE_SYNC_ACD%" />
    <feature.acdLoginLogout
feature.acdLoginLogout.enabled="%FEATURE_SYNC_ACD%" />
    <feature.acdServiceControlUri
feature.acdServiceControlUri.enabled="%FEATURE_SYNC_ACD%" />
    <feature.acdPremiumUnavailability
feature.acdPremiumUnavailability.enabled="%FEATURE_SYNC_ACD%" />
  </feature>

 <feature feature.autoLocalHold="0">
       <feature.acdAgentAvailability
feature.acdAgentAvailability.enabled="%FEATURE_SYNC_ACD%" />
    <feature.acdLoginLogout
feature.acdLoginLogout.enabled="%FEATURE_SYNC_ACD%" />
```

```
    <feature.acdServiceControlUri
feature.acdServiceControlUri.enabled="%FEATURE_SYNC_ACD%" />
    <feature.acdPremiumUnavailability
feature.acdPremiumUnavailability.enabled="%FEATURE_SYNC_ACD%" />
    <feature.bluetooth feature.bluetooth.enabled="1">
    </feature.bluetooth>
    <feature.broadsoftdir
feature.broadsoftdir.enabled="%FEATURE_BW_DIR%">
    </feature.broadsoftdir>
    <feature.broadsoftUcOne
feature.broadsoftUcOne.enabled="%FEATURE_BW_UC_ONE%">
    </feature.broadsoftUcOne>
    <feature.callCenterStatus
feature.callCenterStatus.enabled="%FEATURE_CALL_CENTER%">
    </feature.callCenterStatus>
    <feature.callList feature.callList.enabled="1">
    </feature.callList>
    <feature.callListMissed feature.callListMissed.enabled="1">
    </feature.callListMissed>
    <feature.callListPlaced feature.callListPlaced.enabled="1">
    </feature.callListPlaced>
    <feature.callListReceived feature.callListReceived.enabled="1">
    </feature.callListReceived>
    <feature.callPark feature.callPark.enabled="0">
    </feature.callPark>
    <feature.callRecording feature.callRecording.enabled="0">
    </feature.callRecording>
    <feature.directory feature.directory.enabled="1">
    </feature.directory>
    <feature.hoteling feature.hoteling.enabled="0">
    </feature.hoteling>
    <feature.messaging feature.messaging.enabled="0">
    </feature.messaging>
    <feature.moh feature.moh.enabled="0" feature.moh.filename="">
    </feature.moh>
    <feature.presence feature.presence.enabled="%FEATURE_PRESENCE%">
    </feature.presence>
    <feature.qml feature.qml.enabled="1">
    </feature.qml>
  </feature>

  <dir>
    <dir.broadsoft>
      <dir.broadsoft.xsp
dir.broadsoft.xsp.address="http://%XSP_ADDRESS_XSI_ACTIONS%/"
dir.broadsoft.xsp.username="%XSPUSER%"
dir.broadsoft.xsp.password="%XSPPASS%" />
    </dir.broadsoft>
  </dir>

  <xmpp xmpp.1.auth.domain="%BW_IMP_SERVICE_NET_ADDRESS-1%"
xmpp.1.auth.password="%BW_USER_IMP_PWD-1%"
xmpp.1.auth.useLoginCredentials="0" xmpp.1.dialMethod="sip"
xmpp.1.enable="%FEATURE_BW_UC_ONE%" xmpp.1.jid="%BW_USER_IMP_ID-1%"
xmpp.1.privacy="0" xmpp.1.regMap="1" xmpp.1.roster.invite.accept="prompt"
xmpp.1.roster.invite.addMethod="h350Person"
xmpp.1.server="%BW_IMP_SERVICE_NET_ADDRESS-1%" xmpp.1.verifyCert="0">
  </xmpp>

  <acd acd.reg="%ACD_LINE%" acd.stateAtSignIn="%ACD_SIGNIN_STATE%"
acd.1.unavailreason.active="1" acd.1.unavailreason.codeValue="10001"
acd.1.unavailreason.codeName="Out to lunch"
```

```
acd.2.unavailreason.active="1" acd.2.unavailreason.codeValue="10002"
acd.2.unavailreason.codeName="On the phone"
acd.3.unavailreason.active="1" acd.3.unavailreason.codeValue="10003"
acd.3.unavailreason.codeName="Out for coffee"
acd.4.unavailreason.active="1" acd.4.unavailreason.codeValue="10004"
acd.4.unavailreason.codeName="In a meeting"
acd.5.unavailreason.active="1" acd.5.unavailreason.codeValue="10005"
acd.5.unavailreason.codeName="On vacation" acd.6.unavailreason.active="1"
acd.6.unavailreason.codeValue="10006" acd.6.unavailreason.codeName="In
training" />

  <!-- CALL INFORMATION / CALL MIME TYPE: FEATURE_ACD_CALL_INFORMATION --
>
  <push apps.push.messageType="3" apps.push.serverRootURL=""
apps.push.username="" apps.push.password="" />

  <!-- Set the Network Conference URI -->
  <voIpProt>
    <voIpProt.SIP.conference voIpProt.SIP.conference.address="%BWNETWORK-
CONFERENCE-SIPURI-1%" />
  </voIpProt>

</polycomConfig>
```

References

[1] Polycom, Inc. 2012. *Polycom® UC Software Administrator's Guide – UCS 4.1.0*. Available from Polycom, Inc. at http://supportdocs.polycom.com/PolycomService/support/global/documents/support/setup_maintenance/products/voice/UC_Software_Admin_Guide_v4_1_0.pdf.

[2] BroadSoft, Inc. 2013. *BroadWorks Device Management Configuration Guide*, *Release 19.0.* Available from BroadSoft at xchange.broadsoft.com.

[3] BroadSoft, Inc. 2013. *BroadWorks Redundancy Guide, Release 19.0*. Available from BroadSoft at xchange.broadsoft.com.

[4] BroadSoft, Inc. 2013. *BroadWorks SIP Access Device Interoperability Test Plan*, *Release 19.0*. Available from BroadSoft at xchange.broadsoft.com.

[5] BroadSoft, Inc. 2013. *BroadWorks Device Management Interoperability Test Plan*, *Release 19.0*. Available from BroadSoft at xchange.broadsoft.com.

[6] BroadSoft, Inc. 2013. *BroadSoft Partner Configuration Guide Acme Packet Net-Net 3000/4000 Series*. Available from BroadSoft at xchange.broadsoft.com.

[7] BroadSoft, Inc. 2013. *BroadSoft Partner Configuration Guide Edgewater EdgeMarc.* Available from BroadSoft at xchange.broadsoft.com.