



Avaya Solution & Interoperability Test Lab

Configuring Backup and Restore on an Avaya G450 Media Gateway with a USB Flash Drive - Issue 1.0

Abstract

The Avaya G450 Media Gateway supports backup and restore operations in Release 5.0 of Avaya Communication Manager. Configuration backup/restore operations as well as full backup/restore operations can be performed to a USB flash drive. If the Avaya G450 Media Gateway needs replacement, the previous full backup of an Avaya G450 Media Gateway can be restored from a USB flash drive to a replacement Avaya G450 Media Gateway. These Application Notes present detailed information on how to perform these backup and restore operations with a USB flash drive.

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1. Introduction

The Avaya G450 Media Gateway supports backup and restore operations in Release 5.0 of Avaya Communication Manager. Two types of backup/restore operations can be performed: a configuration backup only and a full backup.

The configuration backup/restore operation can back up the Avaya G450 Media Gateway *startup-config* to a USB flash drive. The *startup-config* contains the operational configuration of the Avaya G450 Media Gateway as well as secret files such as passwords and keys. This operation is performed via the *copy* command (see **Section 4**). **Note** – The Avaya G450 Media Gateway configuration can also be backed up to FTP, TFTP, and SCP servers. Only configuration backup/restore operations to a USB flash drive are covered in these Application Notes.

A full backup/restore operation can back up the Avaya G450 Media Gateway configuration and administration files, as well as other files, to a designated backup directory on a USB flash drive. If the Avaya G450 Media Gateway needs replacement, the previous Avaya G450 Media Gateway can be restored from a USB flash drive to the replacement Avaya G450 Media Gateway. This operation is performed via the *backup config usb* and *restore usb* commands (see **Section 5**).

Table 1 summarizes the Media Gateway Backup/Restore Directory Structure which is created when a full backup is performed. When the Avaya Media Gateway is configured as a TFTP server for the Avaya 4600 IP telephones, the related TFTP files must be placed under the subdirectory **IPPHONE**. The subdirectory **MM** is used to place the voice media module firmware and **GWANNC** is used for the announcement files. Files marked in *italics* are not backed up but can be restored. To be able to restore the files in *italics*, move the flash drive to a PC and manually copy the files to the appropriate directory in the flash device. These files are available at the Avaya support Web site <http://support.avaya.com> or the Avaya Communication Manager installation CD. For more information on the backup/restore file structure see [1].

Root directory	Sub-directory	Files	Comments
Backup<name>	-		Backup directory name
	-	readme.txt	File with backup information
	-	startup_config.cfg <i>g450_sw_x.x.x.bin</i> <i>g450_emweb_x.x.x.bin</i>	Configuration and firmware files
	-	audio.bin	Customer-specific VoIP parameters
	-	vpn_license.cfg	VPN license file
	-	auth-file.cfg	Authentication file
	IPPHONE	46xxupgrade.scr 46xxsettings.txt	IP phone scripts and images directory
	MM	<i>MMxx.fdl</i>	Media modules file directory
	GWANNC	Announcement.wav	Gateway announcements and music-on-hold files

Table 1 – Avaya G450 Media Gateway Full Backup File Structure

2. Reference Configuration

Figure 1 shows the reference network used for the verification of these Application Notes. The reference network is comprised of a “Main Office” and a “Branch Office” connected via an MPLS core network. The Main Office contains an Avaya S8500 Server, an Avaya G650 Media Gateway (containing IPSI, C-LAN, and MedPro cards), and an Avaya 4621 IP telephone. The Branch Office contains an Avaya G450 Media Gateway, an Avaya 4621 IP telephone, and an Avaya 8410 digital telephone.

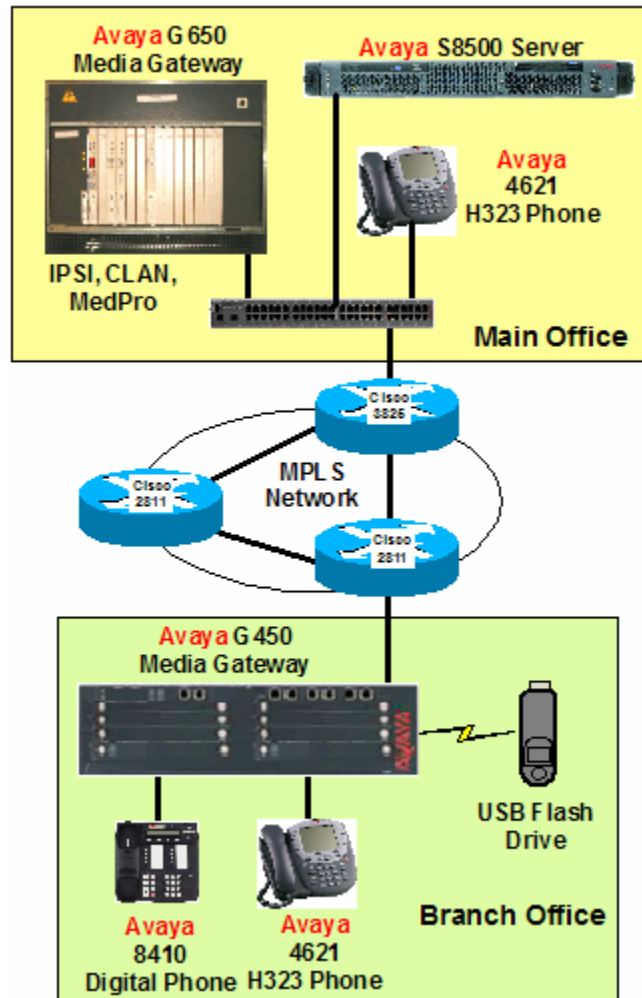


Figure 1 – Reference Configuration

3. Equipment and Software Validated

The following equipment and software were used to test the sample configuration.

Network Component	Hardware/Firmware Version	Software Version
Avaya S8500 Server	-	Avaya Communication Manager 5.0 (R015x.00.0.825.4)
Avaya G650 Media Gateway IPSI – TN2312BP C-LAN – TN799DP MedPro – TN2302AP	- HW15 FW040 HW01 FW024 HW02 FW018	- - - -
Avaya G450 Media Gateway	27.26.0	-
Avaya 4621 H.323 telephone	a20d01b3_8.bin	-
Avaya 8410 DCP telephone	-	-
Avaya MM710 DS1 module	HW05 FW19	-
Avaya MM711 Analog module	HW63 FW89	-
Avaya MM712 Digital module	HW05 FW09	-
Avaya MM716 Analog module	HW01 FW89	-
Memorex TravelDrive Flash Drive	USB 2.0	-
Cisco 3825 router	-	c3825-spservicesk9-mz 12.3(11)T
Cisco 2811 routers	-	c2800nm-adventerprisek9-mz 12.4(10a)

Table 2: Test Equipment List

4. Avaya G450 Media Gateway Startup Configuration Backup/Restore

Note – The Avaya G450 Media Gateway configuration can also be backed up to FTP, TFTP, and SCP servers, however only configuration backup/restore operations to a USB flash drive are covered in these Application Notes.

4.1 Startup Configuration Backup

From the Avaya G450 Media Gateway Command Line Interface (CLI), enter the following commands.

1. Enter the command ***copy running-config startup-config*** to insure that any changes to the active configuration are saved.
2. Insert a USB flash drive into a USB slot on the Avaya G450 Media Gateway. A message similar to the following will be displayed depending on the USB device used:

```
usb device TD CLASSIC 003B (devID 514),  
compliant to USB standard 2.0, full-speed, bus-powered,  
connected on product id N/A
```

Figure 2 – USB Drive Detection Message

3. Enter the command ***show usb all*** to identify the USB device. The following will be displayed depending on the USB device used. In this example the USB device is **usbdevice0**.

G450-001(super)# show usb all									
USB Dev	Description	Manufacturer			USB Ver	Power Mode	Max Power (mA)	Speed	
1	Root Hub (OHCI)	N/A			1.1	Self	0	Full	
257	Root Hub (OHCI)	N/A			1.1	Self	0	Full	
513	Root Hub (EHCI)	N/A			2.0	Self	0	High	
514	TD CLASSIC 003B	Memorex			2.0	Bus	200	Full	
USB Dev	Vendor ID	Product ID	Device Ver	Serial Number	FileSystem	Storage (MB)	Free (MB)	FS	
1	0x0	0x0	0.0	N/A	N/A	N/A	N/A	N/A	
257	0x0	0x0	0.0	N/A	N/A	N/A	N/A	N/A	
513	0x0	0x0	0.0	N/A	N/A	N/A	N/A	N/A	
514	0x12f7	0x1900	1.0	075410921891	/usbdevice0	983	616	FAT16	

Figure 3 – USB Device Information

4. Enter the command ***copy startup-config usb G450_startup_backup usbdevice0*** where ***G450_startup_backup*** is the name of the backup file being created.

5. Enter the command **show upload status**. A successful completion will have the following displayed.

```
G450-001(super)# show upload status
Module #10
=====
Module           : 10
Source file      : startup-config
Destination file : /usbdevice0/G450_startup_backup
Host            : 0.0.0.0
Running state    : Idle
Failure display  : (null)
Last warning     : No-warning
G450-001(super)#
```

Figure 4 – File Upload Status

6. Enter the command **safe remove usb usbdevice0** before removing the USB flash drive from the Avaya G450 Media Gateway.

4.2 Startup Configuration Restore

From the Avaya G450 Media Gateway CLI, enter the following commands.

1. Insert the USB flash drive used to create the backup in **Section 4.1**.
2. Enter the command **dir usbdevice0**. Verify that the correct backup file is on the drive.

```
G450-001(super)# dir usbdevice0
```

Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-07, 16:29:46	file	3233	G450_startup_backup.CFG

```
G450-001(super)#
```

Figure 5 – Backup File On USB Drive

3. Enter the command **copy usb startup-config usbdevice0 G450_startup_backup** where *G450_startup_backup* is the name of the backup file being restored.
4. Enter the command **show upload status**. A successful completion will have the following displayed.

```
G450-001(super)# show upload status
Module #10
=====
Module           : 10
Source file      : startup-config
Destination file : /usbdevice0/G450_startup_backup
Host            : 0.0.0.0
Running state    : Idle
Failure display  : (null)
Last warning     : No-warning
G450-001(super)#
```

Figure 6 – Backup Upload Status

5. Enter the command ***safe remove usb usbdevice0*** before removing the USB flash drive from the Avaya G450 Media Gateway.

5. Avaya G450 Media Gateway Full Backup/Restore

Note – A full backup/restore can only be performed using a USB flash drive.
--

5.1 Master Configuration Key (MCK)

The Avaya G450 Media Gateway contains a Master Configuration Key (MCK). This key is written to the *startup_config.cfg* file. The *startup_config.cfg* file can only be copied back to an Avaya G450 Media Gateway if the MCK in the *startup_config.cfg* file matches the MCK defined in the destination Avaya G450 Media Gateway. Therefore when an MCK is defined it should be documented otherwise the *startup_config.cfg* file cannot be restored. If the MCK for a particular Avaya G450 Media Gateway is not known, then it should be changed with the following command and documented prior to backup.

1. Enter the command ***key config-key password-encryption <string>*** where *<string>* is a phrase of 13-64 printable ASCII characters.
2. Copy the running configuration to the start-up configuration using the ***copy running-config startup-config*** command. The new MCK is now in effect.
3. Document the new MCK.

Refer to [1] for details.

5.2 Full Backup

From the Avaya G450 Media Gateway CLI, enter the following commands.

1. Enter the command ***copy running-config startup-config*** to insure that any changes to the active configuration are saved.

- Enter the command **dir** to show all the files on the Avaya G450 Media Gateway in this reference configuration. Note that some of the files are stored in NV-RAM and others in the RAM. The files stored in RAM (*italics*) cannot survive a reset, therefore the phone images files are lost after a reset. The files in **bold black** will be backed up. Firmware files (*underlined/italicized*) that are located in Flash are not backed up.

G450-001(super)# dir					
M#	file	ver num	file type	file location	file description
--	----	-----	-----	-----	-----
2	<i>MM710</i>	<i>19</i>	<i>SW RT Image</i>	<i>Flash</i>	<i>MM710 - image</i>
5	<i>MM711</i>	<i>89</i>	<i>SW RT Image</i>	<i>Flash</i>	<i>MM711 - image</i>
6	<i>MM712</i>	<i>9</i>	<i>SW RT Image</i>	<i>Flash</i>	<i>MM712 - image</i>
7	<i>MM716</i>	<i>89</i>	<i>SW RT Image</i>	<i>Flash</i>	<i>MM716 - image</i>
9	G450.wav	N/A	Annc files	Nv-Ram	announcement
9	G450_MOH.wav	N/A	Annc files	Nv-Ram	announcement
9	G450_greeting.wa	N/A	Annc files	Nv-Ram	announcement
9	G450_Prompt.wav	N/A	Annc files	Nv-Ram	announcement
9	G450_Hold.wav	N/A	Annc files	Nv-Ram	announcement
9	G450_Whisper.wav	N/A	Annc files	Nv-Ram	announcement
10	startup-config	N/A	Startup Conf	Nv-Ram	Startup Config
10	<i>running-config</i>	N/A	<i>Running Conf</i>	<i>Ram</i>	<i>Running Config</i>
10	<i>G450-A</i>	<i>27.26.0</i>	<i>SW RT Image</i>	<i>Flash Bank A</i>	<i>Software Image Bank A</i>
10	<i>G450-B</i>	<i>27.17.0</i>	<i>SW Component</i>	<i>Flash Bank B</i>	<i>Software Image Bank B</i>
10	<i>G450</i>	<i>N/A</i>	<i>SW Web Image</i>	<i>Flash</i>	<i>EmWeb application</i>
10	<i>G450-Booter</i>	<i>27.11.0</i>	<i>SW BootImage</i>	<i>Flash</i>	<i>Booter Image</i>
10	<i>log</i>	N/A	<i>SYSLOG File</i>	<i>Nv-Ram</i>	<i>log</i>
10	<i>log_cdr</i>	N/A	<i>CDR File</i>	<i>Nv-Ram</i>	<i>log_cdr</i>
10	<i>capture-file</i>	N/A	<i>Other</i>	<i>Ram</i>	<i>Sniffer Capture</i>
10	phone-ScriptA	N/A	Phone Script	Nv-Ram	46xxsettings.txt
10	<i>phone-ScriptB</i>	N/A	<i>Phone Script</i>	<i>Nv-Ram</i>	<i>N/A</i>
10	<i>phone-ImageA</i>	N/A	<i>Phone Image</i>	<i>Ram</i>	<i>N/A</i>
10	<i>phone-ImageB</i>	N/A	<i>Phone Image</i>	<i>Ram</i>	<i>N/A</i>
10	<i>phone-ImageC</i>	N/A	<i>Phone Image</i>	<i>Ram</i>	<i>N/A</i>
10	<i>phone-ImageD</i>	N/A	<i>Phone Image</i>	<i>Ram</i>	<i>N/A</i>
10	<i>dhcp-binding</i>	N/A	<i>DHCP Binding</i>	<i>Nv-Ram</i>	<i>Ip Address Binding</i>
G450-001(super)#					

Figure 7 – Flash File Structure

- Insert a USB flash drive into a USB slot on the Avaya G450 Media Gateway. A message similar to the following will be displayed depending on the USB device used:

```
usb device TD CLASSIC 003B (devID 514),
compliant to USB standard 2.0, full-speed, bus-powered,
connected on product id N/A
```

Figure 8 – USB Drive Detection

- Enter the command **show usb all** to identify the USB device. The following will be displayed depending on the USB device used. In this example, the USB device is **usbdevice0**.

G450-001(super)# show usb all									
USB Dev Id	Description			Manufacturer		USB Ver	Power Mode	Max Power (mA)	Speed
1	Root Hub (OHCI)			N/A		1.1	Self	0	Full
257	Root Hub (OHCI)			N/A		1.1	Self	0	Full
513	Root Hub (EHCI)			N/A		2.0	Self	0	High
514	TD CLASSIC 003B			Memorex		2.0	Bus	200	Full
USB Dev Id	Vendor ID	Product ID	Device Ver	Serial Number		FileSystem	Storage (MB)	Free (MB)	FS
1	0x0	0x0	0.0	N/A		N/A	N/A	N/A	N/A
257	0x0	0x0	0.0	N/A		N/A	N/A	N/A	N/A
513	0x0	0x0	0.0	N/A		N/A	N/A	N/A	N/A
514	0x12f7	0x1900	1.0	075410921891		/usbdevice0	983	616	FAT16

Figure 9 – USB Device Information

- Enter the command **backup config usb usbdevice0 <directory name>** to back up the files to the specified directory on the USB drive. Respond **Y** to the prompt. The Avaya G450 Media Gateway will create the specified directory and subdirectories on the USB drive.

```
G450-001(super)# backup config usb usbdevice0 G450_Full_Backup
Backup operation will copy existing files on the gateway to usb mass storage
device. Do not remove USB device until the end of operation. Do you want to
continue (Y/N)? y

Beginning backup operation ...
This operation may take a few minutes...
Please refrain from any other operation during this time.
For more information, use 'show backup status' command.
```

Figure 10 – Backup Start Message

- Enter the command **show backup status** to check the backup status.

```
G450-001(super)# show backup status
Files backup:
Type                               FileName                               Status
-----
startup-config                     /usbdevice0/G450_Full_Backup/startup_config.cfg  OK
phone-script                       /usbdevice0/G450_Full_Backup/IPPHONE/46xxsettings.txt  OK
announcement                       /usbdevice0/G450_Full_Backup/GWANNK/G450.wav  OK
announcement                       /usbdevice0/G450_Full_Backup/GWANNK/G450_MOH.wav  OK
announcement                       /usbdevice0/G450_Full_Backup/GWANNK/G450_greeting.wav  OK
announcement                       /usbdevice0/G450_Full_Backup/GWANNK/G450_Prompt.wav  OK
announcement                       /usbdevice0/G450_Full_Backup/GWANNK/G450_Hold.wav  OK
announcement                       /usbdevice0/G450_Full_Backup/GWANNK/G450_Whisper.wav  OK
G450-001(super)#
```

Figure 11 – Backup Status

7. Enter the command ***dir usbdevice0 <directory>*** to display the backup directory. The following shows a typical backup file system format. A *readme.txt* file is created in the backup directory as part of the backup operation at the end of a successful backup process. As shown in the following screen, the subdirectories named **IPPHONE**, **GWANNC** and **MM** are automatically created. As described in **Section 5.1**, the media module files are not backed up, therefore the **MM** directory is empty.

G450-001(super)# dir usbdevice0 G450_Full_Backup			
Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-19,10:11:36	<DIR>	16384	IPPHONE
2008-02-19,10:11:38	<DIR>	16384	GWANNC
2008-02-19,10:11:36	<DIR>	16384	MM
2008-02-19,10:11:36	file	3779	startup_config.cfg
2008-02-19,10:11:38	file	724	readme.txt
G450-001(super)#			

Figure 12 – Backup Directory

8. Enter the command ***dir usbdevice0 <directory>/IPPHONE*** to display the contents of the **IPPHONE** directory.

G450-001(super)# dir usbdevice0 G450_Full_Backup/IPPHONE			
Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-19,10:11:36	file	112740	46xxsettings.txt
G450-001(super)#			

Figure 13 – IPPHONE Directory Contents

9. Enter the command ***dir usbdevice0 <directory>/GWANNC*** to display the contents of the **GWANNC** announcement file directory.

G450-001(super)# dir usbdevice0 Branch_G450_backup_2_12/GWANNC			
Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-12,09:33:42	file	46986	G450.wav
2008-02-12,09:33:42	file	27026	G450_MOH.wav
2008-02-12,09:33:42	file	26138	G450_greeting.wav
2008-02-12,09:33:42	file	94386	G450_Prompt.wav
2008-02-12,09:33:42	file	23586	G450_Hold.wav
2008-02-12,09:33:42	file	21186	G450_Whisper.wav
G450-001(super)#			

Figure 14 – GWANNC Directory Contents

10. A *readme.txt* file is created as a result of the backup and is located in the root backup directory. It contains general information on the backup system and a list of backed up files. The *readme.txt* file identifies the backup device and when the backup was made. It may be viewed from the USB flash drive using any text editor.

```
This file is the readme for backup files.  
It contains general information on the  
backup system and a list of backup files.
```

```
Platform           : "H.248"  
System Name        : Branch_G450  
System Location    :  
System Contact     :  
MV Time            : 09:33:42 12 FEB 2008  
MAC Address        : 00:04:0d:ea:ab:b8  
WAN MAC Address    : 00:04:0d:ea:ab:b9  
Serial No          : 03IS07109075  
Model              : G450  
HW Vintage         : 1  
HW Suffix          : A  
FW Vintage         : 27.26.0  
PMI IP address     : 73.73.73.2
```

```
Backup Files:  
-----  
startup_config.cfg  
IPPHONE/46xxsettings.txt  
GWANNC/G450.wav  
GWANNC/G450_MOH.wav  
GWANNC/G450_greeting.wav  
GWANNC/G450_Prompt.wav  
GWANNC/G450_Hold.wav  
GWANNC/G450_Whisper.wav
```

Figure 15 – Readme.txt File Contents

5.3 Full Restore

Since the backup directory does not include Avaya IP phone firmware files, Media Gateway firmware, and Media Gateway media module firmware files, it is recommended to build a new restore directory prior to a restore. Connect the USB flash drive to a PC, make a copy of the backup directory, and rename it (e.g., *G450_Full_Backup* becomes *G450_Full_Restore*). In this way the original backup directory will remain intact. A PC can then be used to place the additional firmware files in the appropriate directories of the restore directory.

When all the Avaya G450 Media Gateway relevant files are included in the restore directory, a single CLI command **restore usb <usb-device> <restore-directory-name>** restores all these files. The restore operation only restores the files available in the restore directory, and the restore directory does not have to include all the files. Note the administrator can always copy an individual file from the restore directory to the Media Gateway.

Note - The restore operation will fail if the Master Configuration Key (MCK) in the backup/restore file does not match the MCK on the Avaya G450 Media Gateway. Refer to **Section 5.1**.

5.3.1 Restoring to the same Avaya G450 Media Gateway

In the following example the backup directory *G450_Full_Backup* was renamed to *G450_Full_Restore*. The following files were added to the *G450_Full_Restore* directory prior to the restore. These firmware files can be downloaded from <http://www.support.avaya.com> or from the Avaya Communication Manager installation CD.

- **Root** directory
 - **g450_sw_27_26_0.bin**
- **IPPHONE** directory
 - **a20d01b2_8.bin**
 - **b20d01b2_8.bin**
- **MM** directory
 - **MM711h30v89.fdl**
 - **MM716V89.FDL**
 - **MM712V9.FDL**
 - **MM710V19.FDL**

1. Insert the USB flash drive containing the restore directory into a USB slot on the Avaya G450 Media Gateway.
2. Enter the command **dir usbdevice0** to display and verify the restore directory.

G450-001(super)# dir usbdevice0			
Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-12, 10:06:26	<DIR>	16384	G450_Full_Backup
2008-02-19, 10:11:03	<DIR>	16384	G450_Full_Restore
G450-001(super)#			

Figure 16 – USB Drive File Contents

- Enter the command ***dir usbdevice0/G450_Full_Restore*** to display and verify the contents of the restore directory. The files in ***italics/bold*** were copied to the restore directory separately.

G450-001(super)# dir usbdevice0 G450_Full_Restore			
Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-19,10:11:36	file	3779	startup_config.cfg
2008-02-19,10:11:38	file	724	README.TXT
2008-02-19,15:27:16	<DIR>	16384	MM
2008-02-19,15:27:16	<DIR>	16384	GWANNC
2008-02-19,15:27:16	<DIR>	16384	IPPHONE
2008-02-07,16:17:58	file	12997111	<i>g450_sw_27_26_0.bin</i>
G450-001(super)#			

Figure 17 – USB Drive Restore Directory Contents

- Enter the command ***dir usbdevice0/G450_Full_Restore/IPPHONE*** to display and verify the contents of the **IPPHONE** directory. The files in ***italics/bold*** were copied to the restore directory separately.

G450-001(super)# dir usbdevice0 G450_Full_Restore/IPPHONE			
Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-19,10:11:36	file	112740	46xxsettings.txt
2007-09-06,07:50:16	file	3102992	<i>b20d01b2_8.bin</i>
2007-09-06,07:50:16	file	7034	46xxupgrade.scr
2007-09-06,07:50:16	file	2129897	<i>a20d01b2_8.bin</i>
G450-001(super)#			

Figure 18 – USB Drive IPPHONE Directory Contents

- Enter the command ***dir usbdevice0/G450_Full_Restore/MM*** to display and verify the contents of the **MM** directory. The files in ***italics/bold*** were copied to the restore directory separately.

Note - The administrator can put all Media Module (MM) files in the **MM** directory and the Avaya G450 Media Gateway will restore only the MM files for the installed modules.

G450-001(super)# dir usbdevice0/G50_Full_Restore/MM			
Date	Type	Size(Bytes)	Filename
-----	-----	-----	-----
2008-02-08,09:52:36	file	153711	<i>MM711h30v89.fdl</i>
2008-02-08,09:53:02	file	153711	<i>MM716V89.FDL</i>
2008-02-08,09:52:48	file	66795	<i>MM712V9.FDL</i>
2008-02-08,09:53:14	file	434857	<i>MM710V19.FDL</i>
G450-001(super)#			

Figure 19 – USB Drive MM Directory Contents

6. Enter the command **restore usb usbdevice0 G450_Full_Restore** and respond **Y** to the prompt. The restore operation copies the image from the USB drive to the unused image bank. Don't remove the USB flash drive or manually reset the Media Gateway while the restore operation is in progress. The Avaya G450 Media Gateway resets after the **startup_config.cfg** file is copied. The last status displayed for this file is **Copying**.

Note – There were no *vpn_license.cfg* or *auth-file.cfg* files in the Avaya G450 Media Gateway reference configuration, therefore the restore process output displayed below lists these files as **Missing** (see **Figures 20** and **21**). Refer to **[1]** for more information on these files.

```
G450-001(super)# restore usb usbdevice0 G450_Full_Restore
Restore operation will remove existing files on the gateway. Do not remove
USB device until the end of operation. Do you want to continue (Y/N)? y

Beginning restore operation ...
This operation may take a few minutes...
Please refrain from any other operation during this time.
For more information, use 'show restore status' command.

G450-001(super)# show restore status
Restore operation in progress. Do not remove usb mass storage device until
the end of operation.
Files restored:
Type                               FileName                               Status
-----
swComponent                        g450_sw_27_26_0.bin                  Copying...
G450-001(super)#

G450-001(super)# show restore status
Restore operation in progress. Do not remove usb mass storage device until
the end of operation.
Files restored:
Type                               FileName                               Status
-----
swComponent                        g450_sw_27_26_0.bin                  OK
startup-config                     startup_config.cfg                 Copying...
Files not restored (were not found on backup directory):
license-file                     vpn_license.cfg                    Missing file
G450-001(super)#
```

Figure 20 – Active Restore Status

When the system comes back after the reset, log into the Avaya G450 Media Gateway and verify the restore status. The following screen shows that the Media Gateway continues to restore the remaining files, after rebooting. Don't remove the flash drive or reset the Media Gateway while the restore operation is in progress.

G450-001(super)# show restore stat		
Files restored:		
Type	FileName	Status

swComponent	g450_sw_27_26_0.bin	OK
startup-config	startup_config.cfg	OK
swWebImage	g450_emweb_4_1_5.bin	OK
phone-script	46xxsettings.txt	OK
phone-script	46xxupgrade.scr	OK
phoneImageFile	b20d01b2_8.bin	OK
phoneImageFile	a20d01b2_8.bin	OK
announcement	G450.WAV	OK
announcement	G450_MOH.WAV	OK
announcement	G450_greeting.wav	OK
announcement	G450_Prompt.wav	OK
announcement	G450_Hold.wav	OK
announcement	G450_Whisper.wav	OK
phoneImageFile	b20d01b2_8.bin	OK
phoneImageFile	a20d01b2_8.bin	OK
Files not restored (were not found on backup directory):		
license-file	vpn_license.cfg	Missing file
auth-file	auth-file.cfg	Missing file
G450-001(super)#		

Figure 21 – Completed Restore Status

5.3.2 Restoring to a replacement Avaya G450 Media Gateway

If an existing Avaya G450 Media Gateway fails, a previous backup can be used to recreate the configuration on a new Avaya G450 Media Gateway if the following procedures have been followed **prior** to the failure. Refer to [1] for details.

- Configure the Master Configuration Key (MCK) on the new Avaya G450 Media Gateway to be the same as the old Avaya G450 Media Gateway, otherwise the *startup_config.cfg* file cannot be restored. See **Section 5.1**.
- If present in the original Avaya G450 Media Gateway, replace the original *vpn_license.cfg* file and/or ASG *auth-file.cfg* file with new files in the restore directory. The *vpn_license.cfg* file is associated with the serial number of the original Avaya G450 Media Gateway and cannot be moved to the replacement Avaya G450 Media Gateway. The ASG *auth-file.cfg* file must always be replaced.
- Install the media modules in the same slots on the replacement Avaya G450 Media Gateway as they were in the original G450 Media Gateway. This will ensure that the *startup_config.cfg* and the configuration on the Avaya Communication Manager match the replacement Avaya G450 Media Gateway hardware configuration.

- Change the original serial number of the Avaya G450 Media Gateway on Avaya Communication Manager with the serial number of the replacement Avaya G450 Media Gateway. The serial number can be obtained by the **show system** CLI command on the Avaya G450 Media Gateway.
- Follow the steps in **Section 5.2.1** for the restore.

6. Verification

The administrator needs to make sure that the Media Gateway functions as expected after the restore operation. Based on the configuration in **Figure 1**, the following should be verified:

- The Avaya G450 Media Gateway registers to Avaya Communication Manager.
- The Branch Avaya IP telephone registers to Avaya Communication Manager and has dial-tone.
- The Branch Avaya Digital telephone has dial-tone.
- Calls can be made successfully between the Branch office and the Main office.

7. Conclusions

As illustrated by these Application Notes, the Avaya G450 Media Gateway supports backup and restore operations using a USB flash drive. A full restore directory structure can be built based on the backup directory structure as well as a configuration backup/restore. When an Avaya G450 Media Gateway is replaced, the original Avaya G450 Media Gateway can be restored from the USB flash drive. Alternatively the administrator can copy individual files from the restore directory to the Avaya G450 Media Gateway.

8. References

The following documents can be found at <http://support.avaya.com>:

[1] *Administration for the Avaya G450 Media Gateway*, Doc ID 03-602055, Issue 1, January 2008.

[2] *Configuring the Backup and Restore operations on the Avaya G250 and G350 Media Gateways* - Issue 1.0, April 2007.

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