Job Aid: Replacing the G700 Media Gateway

Please disregard any references to the S8710 Media Server in this document. The S8700 Media Server is the currently available product. If you need additional information, please contact your Avaya representative or Avaya authorized business partner.

You or your service support center may determine that you must replace a G700 Media Gateway. This determination may be based on a variety and/or combination of symptoms, including, but not limited to, the following:

1 You cannot log in to the media gateway

2 The gateway does not register with its primary controller

3 The gateway is experiencing rolling reboots

4 The VoIP module on the media gateway's motherboard is not working.

This job aid describes the procedures to replace an installed G700 Media Gateway with a new G700. The steps in the procedures vary, depending on the following two considerations:

- The G700 Media Gateway may or may not contain an S8300 Media Server, which can be configured as a primary controller or as a local survivable processor (LSP).

- The G700 Media Gateway may be functional or not functional.

Assumptions

The following items are assumed for the successful completion of this replacement procedure. If any of these assumptions do not apply to your scenario, some steps in the on-site replacement procedure may need to be modified:

- If the installed G700 contains an S8300, it may be configured as a primary controller or as an LSP

- An installed S8300, if any, and any installed media modules, will be reused in the new G700.

- The customer will provide a computer on the LAN for:

  — Connection to the G700's primary controller if the primary controller is remote

  — TFTP server support for backup of G700 config and dat files (only if the G700 Media Gateway is functional) and for installation of new firmware

  — FTP backup of G700 VAL announcements, if any (only if the G700 Media Gateway is still functional)

  NOTE:
  The media gateway must be able to communicate with the FTP and TFTP servers.

- The media gateway processor and stack configurations are still valid. This means that IP addresses (on the customer's LAN) are still available for the following:

    — P330 stack processor

    — Media gateway processor (MGP)

    — VoIP engine on the G700 motherboard (voip-v0)

    — Primary controller (S8300, S8500, S8700, or S8710 Media Server)

    — LSPs

    — FTP and TFTP server

- The Avaya Gateway Installation Wizard may be used for the initial configuration of the new G700 as well as the upgrade of firmware — the Gateway Installation Wizard application must be installed on the technician's laptop.

- The technician is familiar with how to connect to and access the G700 Media Gateway and S8300 Media Server, including:

    — setting up a direct connection from the laptop to the G700 Console (serial) port and using Hyperterm or similar serial-communications application

    — logging in to the P330 stack processor

    — setting up a direct connection from the laptop to the S8300 Services port

    — using the Web Interface

Before you go to the site

It is strongly recommended that you obtain as much information as possible that will be used in the replacement procedure before going to the customer site.

Perform the following steps before going to the customer site:

1   Obtain the IP addresses of the primary controller (may be an S8300, S8500, S8700, or S8710 Media Server) and the LSPs in the network.

2   Obtain the IP addresses and subnet masks for the P330 stack processor and MGP on the G700 to be replaced, and the default gateway on the customer's LAN (note: do not confuse the default gateway with the MGP IP address).

3   Obtain the IP address of a computer on the customer's LAN that must be set up as a TFTP server. Software needed to set up a TFTP server can be downloaded from the Avaya Support Website (www.avaya.com/support). If needed, instructions to set up a TFTP server are given in Appendix 1: Set up a TFTP Server.

    The TFTP server will also be used for TFTP backups (only if the G700 Media Gateway is functional)

4   Check to see what media modules are installed in the G700 Media Gateway. You can do this by looking at the media gateway itself or by logging in to the SAT of the primary controller and running the **display media-gateway <number>** command.

5 Download to your laptop the most recent versions of firmware for each device in the G700 Media Gateway, including the P330 stack processor and the MGP and the media modules you determined in the previous step. These files are available in the Software/Firmware Downloads section of the Avaya Support Website.

On a G700 Media Gateway and its media modules, the most recent firmware will work with the current, or even an older, version of Communication Manager. For more information, see *Communication Manager 2.0 Software & Firmware Compatibility Matrix*, also available on the the Software/Firmware Downloads section of the Avaya Support Website.

> **⚠ CAUTION:**
> Media gateway or media module firmware must be current with or more recent than the version of Communication Manager software on the primary controller.

6 Arrange for access to the primary controller.

- If the primary controller is an S8300, either in the G700 to be replaced or in another G700 in the same stack or a connected stack, you will use a direct connection from your laptop's NIC card to the Services port on the S8300. Your laptop must be properly configured for the direct connection. For example, your laptop must be configured with static IP address of 192.11.13.5. For this connection, the S8300 can be accessed via telnet or web browser using the IP address 192.11.13.6.

> **NOTE:**
> See *Installation and Upgrades for the Avaya G700 Media Gateway and Avaya S8300 Media Server*, 555-234-100, for detailed information about setting up connections to the G700 and S8300 and the associated laptop configurations.

- However, if the primary controller is at a remote location, you will need to be able to access the primary controller over the customer's LAN. The customer should provide a computer connected to the LAN for this purpose. Alternatively, if the customer does not provide a computer for this purpose, you could be in contact with someone who has access to the primary controller and have them do the controller steps at the appropriate times.

In addition, if the G700 contains an S8300 (primary controller or LSP):

7 Create and download a new license file from the RFA Website. The new license file must be associated with the serial number of the new G700. Save the license file on the laptop hard drive that you will use at the customer site. Do NOT download a new password file. Be sure to obtain the file with the .lic extension.

At the customer site

In the following procedures, you will use your laptop to access both the G700 (via a direct serial connection) and the primary controller (either via a direct connection or over the LAN). You will need to alternate between these two connections several times.

Perform the following procedures at the customer site:

1   Set up connections to the G700, primary controller, and LSP:

    a   **(Only if the G700 Media Gateway is functional)** Direct connection to the G700 — using a serial cable, connect a serial cable from your *laptop* to the Console port on the G700.

    b   Connection to the primary controller —

        —— If the primary controller is local, connect a crossover cable from your *laptop* to the Services port on the server.

        —— If the primary controller is at a remote location, set up a LAN connection to the primary controller on a ***customer computer***.

    c   Connection to the LSP — if the G700 contains an S8300 configured as an LSP — after the LSP is reinserted into the new G700, connect a crossover cable from your laptop to the Services port on the S8300. This connection is needed only in Step 22 to install the new license file.

> **NOTE:**
> If the primary controller is an S8500, S8700, or S8710, or an S8300 on a different G700 that is not being replaced, you do not need to save translations at this point.

2   If the primary controller is an S8300 in the G700 to be replaced, use the SAT interface to save translations. Verify that translations were saved successfully.

> **NOTE:**
> If the G700 Media Gateway is not functioning, skip to Step 5.

3   **(Only if the G700 Media Gateway is functional)** Back up the G700 configuration files to a TFTP server. (The TFTP server must be on the customer LAN and the G700 must be connected to the LAN through one of the Ethernet ports, EXT1 or EXT2):

    a   Using the serial connection, open a Hyperterm session and log in to the P330 stack processor.

    b   At the P330 prompt, type
copy stack-config tftp *<stack-filename> <ip-address>*
and
copy module-config tftp *<module-filename> <ip-address> <module #>*

where,

<stack-filename> is a name you choose for the backed up stack-config file; for example, the G700 stack module number followed by "stack": ***1stack***.

<module-filename> is a name you choose for the module-config file; for example, the G700 stack module number followed by "module": ***1module***.

(Write down these file names for later use).

<ip-address> is the ip address of the destination TFTP server

<module #> is the stack module number of the G700 (1–10).

    c Session to the MGP: type
        session mgp

    d Type **configure** to change to the configure mode.

    e At the MGP(configure) prompt, type
        copy mgp-config tftp tffs.dat *<ip-address>*

        where,
        <ip-address> is the ip address of the destination TFTP server

NOTE:
If the G700 Media Gateway is not functioning, skip to Step 5. Also, if there are no VAL announcements on the G700, skip to Step 5. Backing up the VAL announcements can most easily be done using VAL Manager, if available, instead of Step 4.

4 **(Only if the G700 Media Gateway is functional)** Backup G700 VAL announcements (if gateway announcements are present on the G700).

NOTE:
To determine if VAL announcements are present, log in to the SAT command line interface on the primary controller, and type the command **list directory board *<xx>*v9**, where ***<xx>*** is the number of the media gateway.

    a Enable file system for the G700:

        — Telnet to the primary server and start a SAT session.

            On your laptop, click **Start** > **Run** and enter **telnet *<server-ip-address>***
            Log in as **craft**
            Type **SAT**
            Log in as **craft**

        — At the SAT prompt, type
          enable filesystem board *<nn>*v9 login *<ftp-username> <ftp-password>*
          where,
          <nn> is the media gateway number administered for the G700
          <ftp-username> is a 3–6 character user ID for the FTP session
          <ftp-password> is a 7–11 character password for the FTP session

    b Log in to a computer connected to the customer LAN. This computer will be used as an "FTP client" to temporarily store the G700 VAL announcements.

    c Copy the existing announcement files from the G700 to the FTP client.

        — At the command prompt on the FTP client, type
          ftp *<ip-address>*
          where ***<ip-address>*** is the IP address of the media gateway processor (MGP) on the G700.

        — At the user prompt, type the ftp-username you set up in Step a**.**

        — At the password prompt, type the ftp-password you set up in Step a**.**

        — At the ftp> prompt, type **bin** to change to binary mode.

        — At the ftp> prompt, type **dir** to view the contents of the /annc directory.

— At the `ftp>` prompt, type
get *<filename>*.wav
where ***<filename>*** is the file name of an announcement file that you want to back up.
(The **get** command copies the announcement file to the directory from which you initiated the FTP session on the FTP client.)

— Repeat the **get** command for each announcement file you want to back up.

  d Type **bye** to close the ftp session.

5 Ensure that all cables (connected to the G700 and media modules) are adequately marked for later reinstallation in the same locations.

6 Shutdown the S8300, if any:

Click **Shutdown Server** under Server on the Maintenance Web Interface. Or, press and hold down the Shutdown button (on the faceplate of the S8300) until the OK to Remove LED starts blinking. In either case, when the OK to Remove LED is on steady, you can safely power down the system.

7 Power down the G700 (unplug power cord).

8 Remove all cables. Remove the old G700 from the rack. Mount the new G700 in the rack.

9 Transfer the media modules and the S8300, if any, from the old G700 to the new G700, maintaining the original slot locations.

10 Reconnect cables in the same locations as on the old G700.

11 Power up the G700 (plug in power cord).

12 Provision the new G700 (MGP, P330, IP Routes):

  a Connect a serial cable from your laptop's serial port to the Console port on the G700

  b Using a serial-communications application such as Hyperterm, access the P330 stack processor and log in.

NOTE:
The following steps, **c**–**m**, can alternatively be completed using the Gateway Installation Wizard. To use the wizard, the GIW application must be installed on your laptop.

  c If necessary, start the Hyperterm session and log in.

  d Provision the IP address of the P330 stack processor: at the P330 prompt, type
set interface inband *<vlan> <ip-address> <netmask>*
where,

<vlan> is the vlan number
<ip-address> is the IP address of the P330 stack processor
<netmask> is the subnet mask

  e Reset the P330 stack processor: type
reset *<module-number>*
where ***<module-number>*** is the module number of the G700 in the stack.

If necessary, re-start the Hyperterm session and log in.

  f Set up an IP route through the default gateway. At the P330 prompt, type

set ip route 0.0.0.0 *<default-gateway-ip-address>*
where,

<default-gateway-ip-address> is the IP address of the router or switch that handles packets addressed to destinations outside of the subnet.

g Session to the MGP and change to the configure mode: type
session mgp
configure

h Re-initialize the MGP. At the MGP(configure) prompt, type
nvram initialize

If necessary, re-start the Hyperterm session and log in.

i Session to the MGP and change to the configure mode: type
session mgp
configure

j Provision the IP address of the media gateway processor: at the MGP(configure) prompt, type
set interface mgp 1 *<ip-address> <netmask>*
where,
<ip-address> is the IP address of the media gateway processor (MGP)
<netmask> is the subnet mask.

k Reset the MGP: type
reset mgp

After the reset, the P330 login prompt will appear. Log in.

l Session to the MGP and change to the configure mode: type
session mgp
configure

m Set up an IP route through the default gateway: type

set ip route 0.0.0.0 0.0.0.0 *<default-gateway-ip-address>*
where,

<default-gateway-ip-address> is the IP address of the router or switch that handles packets addressed to destinations outside of the subnet.

Note that the "0.0.0.0 0.0.0.0" is two all-zero IP addresses separated by a space.

NOTE:
If the original G700 Media Gateway was not functioning, skip to Step 14. If the original G700 Media Gateway was functioning, complete Step 13, then skip to Step 17.

13 **(Only if the original G700 Media Gateway was functional)** Restore the configuration backup files:

a Type **exit** twice to return to the P330 stack processor. At the P330 prompt, type
copy tftp stack-config *<stack-filename> <ip-address>*
and
copy tftp module-config *<module-filename> <ip-address>*
where,

<stack-filename> is a name you chose in Step 3 for the backed up stack-config file; for example, *1stack*.

<module-filename> is a name you chose in Step 3 for the module-config file; for example, *1module*.

<ip-address> is the IP address of the TFTP server

b Session to the MGP and change to the configure mode: type
session mgp
configure

   c At the MGP(configure) prompt, type
copy tftp mgp-config tffs.dat *<ip-address>*

where,
<ip-address> is the ip address of the TFTP server

   d Reset the MGP: type
reset mgp

NOTE:

Skip to <ins>Step 17</ins>.

14   **(Only if the original G700 Media Gateway was NOT functional)** Assign IP addresses to VoIP resources

   a At the `MG-???-n(configure)#` prompt, type **set interface voip *<number> <ip address>***

<number> is the slot number of the VoIP media module. **v0** designates the VoIP resource resident on the G700 Media Gateway motherboard. The MM760 VoIP Media Modules are designated according the slot (for example, **v1**, **v2**, **v3**, **v4**) in which the media module has been installed. *<ip address>* is the IP address of the VoIP resource.

For example: **set interface voip v0 132.236.73.3**

15   **(Only if the original G700 Media Gateway was NOT functional)** Assign the controller list for the G700 Media Gateway

   a At the `MG-???-n(configure)#` prompt, type the following commands to designate the primary, secondary, and LSP controllers for this G700:

clear mgc list

set mgc list *<ip_address> [,<ip_address> [,<ip_address> [,<ip_address>]]]*

where, the first *<ip_address>* is the IP address of the primary controller for this G700. If the primary controller is an S8500, S8700, or S8710, this is the IP address of a C-LAN board that is connected to the media server. If the primary controller is an S8300, this is the IP address of the S8300.

The next three *<ip_address>* parameters are optional IP addresses of up to three alternate controllers. Each of the three optional controllers can be an S8500, S8700, S8710, or an S8300 configured as an LSP, depending on the G700's primary controller.

CAUTION:

If you need to change the mgc list, you must run **clear mgc list** before running **set mgc list** again.

The following table describes the possible optional controllers for an S8300, S8500, S8700, and S8710 primary controller:

Primary Server	Controller IP Addresses
S8300	**First:** IP address of the S8300 primary controller. **Next three:** one, two, or three IP addresses of S8300s configured as LSPs.
S8500, S8700, or S8710	**First:** IP address of the C-LAN for the S8500, S8700, or S8710 primary controller. **Next three:** one, two, or three IP addresses of alternate C-LANs and/or LSPs.

16 **(Only if the original G700 Media Gateway was NOT functional)** Set the LSP transition points.

You must set the time that the G700 searches, in the event of a network problem, for primary controllers (for example, additional CLAN connections) with which to register. After this search time has elapsed, the G700 will search for an LSP with which to register. You must also set the total time the G700 searches for either a primary controller and an LSP, after which the G700 resets. And finally, you must define how many primary controllers, from 1 to 4, are in the controller list you just defined.

a At the MG-001-1(configure)# prompt, type **set mgp reset-times primary-search** *<search-time>*

where *<search-time>* is the time in minutes that the G700 searches for a primary controller before looking for an LSP. The range is from **1** to **60**.

b At the MG-001-1(configure)# prompt, type **set mgp reset-times total-search** *<search-time>*

where *<search-time>* is the time in minutes that the G700 searches for both primary controllers or LSPs. The range is from **1** to **60**.

c At the MG-001-1(configure)# prompt, type **set mgp reset-times transition-point** *<#_of_primary>*

where *<#_of_primary>* is the number of primary controllers in the controller list. If the primary controller is an S8500 or S8700, the range is from **1** to **4.** If the primary controller is an S8300, *<#_of_primary>* must be **1**.

17 Reconnect to the primary server.

18 Restore the announcement files.

NOTE:
If you did not back up VAL announcements in Step 4, skip this step. This step can be done using VAL Manager, if available. If the G700 was not originally functional, VAL announcements must be rerecorded, if recorded directly to the G700 or reinstalled if announcement files were recorded externally. Check with the customer to see if external announcement files are available.

a Repeat Step a in Step 4 to enable an FTP session on the S8300.

b Copy the backed-up announcement files from the FTP client to the G700.

— At the FTP client command prompt, type
ftp *<ip-address>*
where *<ip-address>* is the ip address of the MGP

— At the user prompt, type the ftp-username you set up in Step a.

— At the password prompt, type the ftp-password you set up in Step a.

— At the ftp> prompt, type **bin** to change to binary mode.

— At the ftp> prompt, type **dir** to view the contents of the /annc directory.

— At the ftp> prompt, type
put *<filename>*.**wav**
where*<filename>* is the name of an announcement file you want to restore.
(The **put** command copies the announcement file from the FTP client to the /annc directory on the G700.)

— Repeat the **put** command to restore each announcement file that you backed up in Step 4.

c Type **bye** to close the ftp session.

19 Reconnect to the G700 Media Gateway.

20 Determine which firmware to install on the G700

Conduct the following procedure to compare software versions running on the G700 processors and media modules with the versions in you downloaded from the Avaya support Web site. If the versions do not match, new firmware for those components is necessary.

> **NOTE:**
> The Avaya Gateway Installation Wizard may be used for this task as well as the upgrade of firmware — the Gateway Installation Wizard application must be installed on the technician's laptop.

    a At either the P330-1(super)# or P330-1(configure)# prompt, type **dir**.

    The system displays the list of software.

Directory List for P300 Processor

```
M# file            ver num  file type    file location  file description
-- ----            -------  ---------    -------------  ----------------
1  module-config   N/A      Running Conf Ram            Module Configuration
1  stack-config    N/A      Running Conf Ram            Stack Configuration
1  EW_Archive      3.8.6    SW Web Image NV-Ram         WEB Download
1  Booter_Image    3.2.5    SW BootImage NV-Ram         Booter Image
```

    b Check the version number (ver num) of the EW_Archive file to see if it matches the Release Letter. If not, you must upgrade the P330 stack processor.

    c Type **show image version**

    The system displays the list of software.

Show Image Version List for P330 Processor

```
Mod     Module-Type                                    Bank  Version
------  -----------                                    ----  -------
3       Avaya G700 Media Gateway                       A     0.0.0
3       Avaya G700 Media Gateway                       B     3.9.0
```

    d Check the version number of the stack software image file in Band B to see if it matches the your planning document. If not, you must upgrade the P330 stack processor.

    e Type **session mgp**

    f At the MG-001-1(super)# prompt, type **show mg list_config**

    The system displays the list of software.

Show MG List_Config

```
SLOT  TYPE    CODE   SUFFIX  HW VINTAGE  FW VINTAGE  VOIP FW
----  ------  -----  ------  ----------  ----------  -------
V0    G700    DAF1   A       00          210(B)      2
V1    ICC     S8300  A       72          00          N/A
V2    DCP     MM712  A       2           52          N/A
V3    ANA     MM711  A       2           12          N/A
V4    DS1     MM710  A       1           54          N/A
```

> **g** Refer to the list to check the FW vintage number of the G700. In the TYPE column, find G700, then check the matching field in the FW VINTAGE column to see if it matches the vintage number in your planning forms. If not, you must install new firmware on the G700 Media Gateway. Also check if the release number in the FW VINTAGE column contains (A) or (B) to designate the software bank. If the list shows B, you will upgrade A. If the list shows A, you will upgrade B.
>
> **h** Refer to the VOIP FW column and row for slot V0 (same row occupied by the G700 information) to see if the number matches the VoIP firmware identified in your planning forms. If not, you must also upgrade the G700 Media Gateway motherboard VoIP module.

NOTE:
The VoIP processor on the motherboard is upgraded using the same firmware image file as the VoIP media modules; for example, the file mm760v8.fdl is vintage #8.

> **i** Check the FW VINTAGE column for vintages of each of the installed Media Modules: MM710, MM711, MM712, MM720, and/or MM760 to see if they match the FW vintages in the planning forms. If not, you must upgrade them, as well.Reconnect to the primary server.

21 Install new firmware as appropriate. To stage the firmware for the installation, the customer must configure a TFTP server on a PC connected to the customer's LAN (seeAppendix 1: Set up a TFTP Server on page 13.

See also *Job Aid: Firmware Download Procedures for G700 Media Gateway*, Issue 2, 555-245-758.

NOTE:
Skip Step 22 if there is no S8300 in the new G700. You need to install a new license file *only* on an S8300 in the new G700. You do not need to install a new license file on any server that is not in the new G700.

22 If there is an S8300 (primary controller or LSP) in the new G700, use the Maintenance Web Interface to install the new RFA license on the S8300.

> **a** If the S8300 in the new G700 is an LSP, connect the crossover cable from your laptop to the Services port on the LSP. (If the S8300 in the new G700 is the primary controller, the crossover cable should already be connected to it).
>
> **b** Open the Maintenance Web Interface. Under "Miscellaneous," select **Download Files** and enter, or browse to, the full-path filename of the license file on you laptop. Click on **Download**.

    c Under "Security," select **License File**. Check the "Install the license file specified below" radio button and enter a file pathname, a URL, or click **Browse** to determine where the file is.

    d Click on **Submit**.

    e Under "Security," select **License File** again to ensure the status is normal.

23   Provision the new G700.

    a On the primary controller, open a SAT session

    b At the SAT prompt, type
change media-gateway *<mg-number>*
where ***<mg-number>*** is the number assigned to this G700

    c Type the serial number of the new G700 in the Identifier field and submit the screen.

    d Verify that the new G700 registers with Communication Manager:

       — Open a SAT session and type
list media-gateway

       The **Registered?** column (last column on the right) should have **y** for the new G700.

24   Save translations on the primary controller.

25   Test as appropriate — for example, make station calls from/to the replaced G700, check for and resolve any new alarms.

Appendix 1: Set up a TFTP Server

The following instructions describe how to configure a Windows-based computer as a TFTP server. A TFTP server is needed for the **copy tftp** commands, which backup the configuration files and install firmware on the G700. The TFTP server can be on any computer that can be networked to the G700.

Follow these steps to configure a computer as a TFTP server.

1 On the hard drive of the computer, create a directory into which you will copy the G700 configuration files or load the G700 firmware image files; for example, C:\tftpboot.

2 Access the Avaya support website at http://www.avaya.com/support. on the Internet to copy the following file to the PC/laptop: iptel_avaya_tftp.exe.

3 At the Avaya support site, select the following sequence of links:

   Software & Firmware Downloads

   Scroll down to "Telephones and End-User Devices" in the right panel and select

   4600 Series IP Telephones then **Software Downloads**

4 Select **AVAYA 4630 IP Telephone Rx.xx and TFTP Server**.

5 Scroll to bottom of page to find iptel_avaya_tftp.exe.

6 Click on the program and download it to any convenient temporary directory. You may also wish to download the file iptel.pdf, which provides instructions on installing iptel_avaya_tftp.exe on Windows systems.

7 Go to the directory containing the iptel_avaya_tftp.exe file, double-click on the filename and follow the installation wizard instructions to install it. The default installation directory is C:\Program Files\Walusoft\TFTPSuite — you can accept this default or specify a different one.

8 Go to the directory where the TFTP software was installed and double-click on **tftpserver32.exe**.

9 The system displays the TFTP Server window. The IP address of the computer, plus port 69, is indicated in the upper border of the window.

10 Enable the TFTP server as follows:

   a Click on **System** from the menu bar and select **Setup**. The system displays the server option window.

   b Select the **Inbound** tab and enter the full path to the tftp directory that you created in Step 1 (e.g., C:\tftpboot) in the "Inbound file path" window. Check "Allow Inbound Paths" and "Create paths as needed".

   c Select the **Outbound** tab and enter the full path to the tftp directory that you created in Step 1 (e.g., C:\tftpboot) in the "Outbound file path" window. Check "Enable Paths".

   d Select the **Options** tab and enter **69** in the "Use Port" window (default). Since you will be using the TFTP server to backup the configuration files, be sure that the "No Outbound" and "No Incoming" boxes are *not* checked. Otherwise, leave the defaults for the check boxes.

   e Click **OK** to save and exit setup.