



**Dialogic® IMG 1010/1004  
Integrated Media Gateways**

**Installation and Setup Guide**

**Release 10.3.x / 10.5.x**

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**Please be aware that the following terminology and abbreviations are used throughout this document. Please also be sure to consult the legal notice for other important details.**

- **When used herein, the term “IMG 1010” refers to the “Dialogic® IMG 1010 Integrated Media Gateway” product.**
- **When used herein, the term “IMG 1004” refers to the “Dialogic® IMG 1004 Integrated Media Gateway” product.**
- **When used herein, the general term “IMG” refers collectively or alternatively to the Dialogic® IMG 1010 and Dialogic® IMG 1004 Integrated Media Gateway products.**



# Table Of Contents

IMG 1010 - Introduction .....	1
Overview of Installation and Setup - IMG 1010 .....	1
Items Required for Installation - IMG 1010.....	2
Sample Network Scenario - IMG 1010.....	3
Licensing - IMG 1010.....	4
IMG 1010 - Hardware Installation.....	9
Hardware Installation Task Summary - IMG 1010.....	9
Site Preparation - IMG 1010 .....	10
Unpacking - IMG 1010 .....	12
Rack Mounting - IMG 1010 .....	13
Surface Mounting - IMG 1010 .....	16
Connecting AC Power - IMG 1010.....	17
Connecting DC Power - IMG 1010.....	19
Single Power Source:.....	20
Redundant Power Source: .....	21
Connecting DC Power to Ground .....	22
Connecting Ethernet and TDM Cables - IMG 1010.....	23
Timing - IMG 1010 .....	24
Cabling for Redundancy - IMG 1010 .....	25
Redundant Control - IMG 1010 .....	26
Redundant Data - IMG 1010 .....	27
Redundant Signaling - IMG 1010.....	28
Redundant SS7 Signaling - IMG 1010 .....	29
IMG 1010 - Linux Red Hat Installation .....	31
Installing Linux on the GCEMS Server .....	31
Dell Server Configuration Details.....	34
Recommended Linux Configuration and OS Settings .....	35
IMG 1010 - Software Installation and Setup .....	39
Software Installation and Setup - IMG 1010 .....	39
Configuring the Linux User - (excelsw).....	41
Installing GCEMS Software .....	42
GCEMS Installation Script.....	44
Folders and Files Created During Installation .....	47
Configure GCEMS and Start Linux Services - IMG 1010 .....	51
Downloading System Software - IMG 1010 .....	56
Starting GateControl EMS.....	58
Starting ClientView .....	61
Configuring Remote Desktop .....	63
Selecting/De-selecting Linux Services .....	69
Installing ClientView for Windows® .....	70
Setting Host Flags .....	71
Sample dhcpd.conf File - IMG 1010 .....	73
Assigning ClientView Users .....	74
Changing or Deleting GCEMS and User Interface .....	75
IP Security for IMG and GCEMS.....	76
Downloading System Software Using Boot File on an SD Card - IMG 1010.....	79
Downloading IMG System Software From an SD Card - IMG 1010 .....	82
Distributing System Software Using an SD Card - IMG 1010 .....	85
Default bootup.cfg Configuration File - IMG 1010 .....	86
SD Card Remote Provisioning - IMG 1010.....	87

## Installation and Setup

IMG 1004 - Introduction .....	91
Overview of Installation and Setup - IMG 1004 .....	91
Items Required for Installation - IMG 1004.....	92
Sample Network Scenario - IMG 1004.....	93
Licensing - IMG 1004.....	94
IMG 1004 - Hardware Installation.....	97
Hardware Installation Task Summary - IMG 1004.....	97
Site Preparation - IMG 1004 .....	98
Unpacking - IMG 1004 .....	100
Rack Mounting the IMG 1004.....	101
Surface Mounting - IMG 1004 .....	102
AC Power Specifications .....	103
Connecting AC Power - IMG 1004.....	104
Connecting Ethernet and TDM Cables - IMG 1004.....	105
Timing - IMG 1004 .....	106
IMG 1004 - Software Installation and Setup .....	107
Software Installation Overview - IMG 1004.....	107
Summary of Software Installation and Setup Tasks - IMG 1004 .....	110
Configuring the Linux User - (excelsw).....	111
Installing GCEMS Software .....	112
GCEMS Installation Script.....	114
Folders and Files Created During Installation .....	117
Configure GCEMS and Start Linux Services - IMG 1004 .....	120
IMG 1004 - Downloading System Software - IMG1004.....	125
Starting GateControl EMS.....	127
Starting ClientView .....	130
Configuring Remote Desktop .....	132
Selecting/De-selecting Linux Services .....	137
Installing ClientView for Windows® .....	138
Setting Host Flags .....	139
Sample dhcpd.conf File - IMG 1004 .....	141
Assigning ClientView Users .....	142
Changing or Deleting GCEMS and User Interface .....	144
Recommended Linux Configuration and OS Settings .....	145
IP Security for IMG and GCEMS.....	148
Downloading System Software Using Boot File on an SD Card - IMG 1004.....	151
Downloading System Software From an SD Card - IMG 1004.....	154
Distributing System Software Using an SD Card - IMG 1004 .....	157
Default bootup.cfg Configuration File - IMG 1004 .....	158
SD Card Remote Provisioning - IMG 1004.....	159

## IMG 1010 - Introduction

### Overview of Installation and Setup - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Introduction

The Installation and Setup Guide will discuss the procedures for unpacking your Dialogic® IMG 1010 Integrated Media Gateway and Dialogic® GateControl Element Management System server from the box to the point at which you can begin to configure the IMG 1010 using the ClientView GUI.

#### Assumptions

It is assumed that personnel performing these installation and setup procedures are familiar with telecommunications equipment and have a working knowledge of Linux.

#### Task Summary

1. [IMG 1010 - Hardware Installation](#)
2. [IMG 1010 - Software Installation and Setup \(if required\)](#)
3. [Starting GateControl EMS server](#)
4. [Starting ClientView](#)

## Items Required for Installation - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Introduction

The table below describes the items required for an IMG 1010 and GCEMS Server installation. Certain models of the GCEMS Server purchased through your Dialogic supplier have software installed, as indicated.

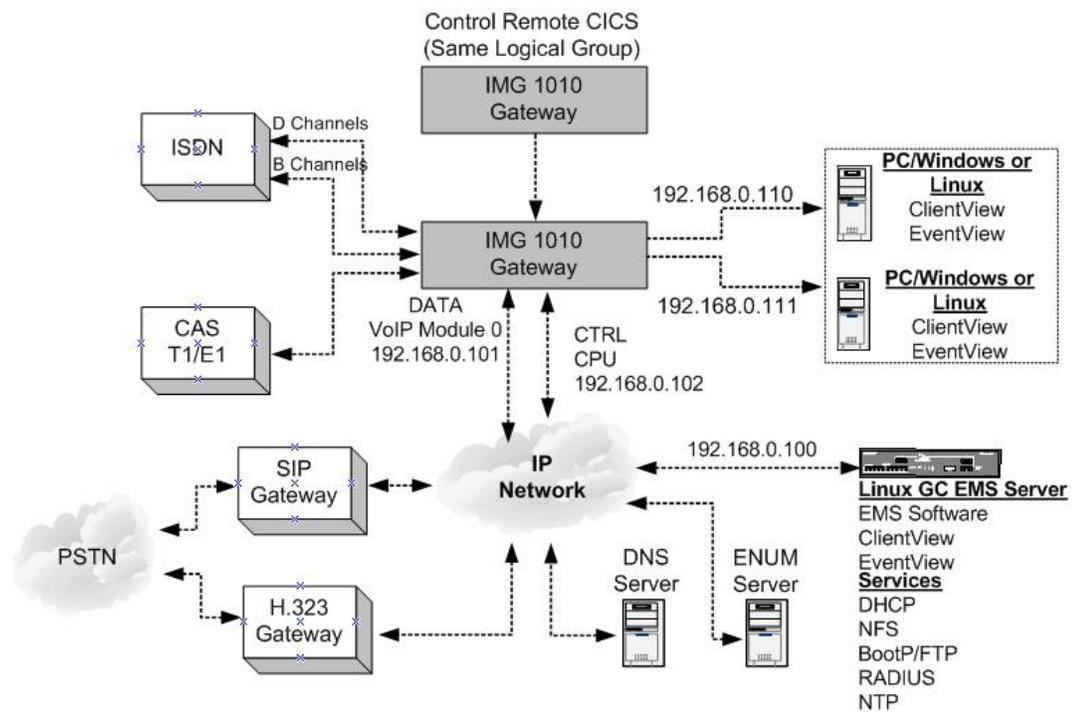
Item		Dialogic Supplied Server	Third Party Server
<b>Server with Linux Red Hat Enterprise installed</b>	Dell 860 Pentium D, Dell 1950 Dell CR100	IMG-EMS-0860R (Linux Software Installed)  IMG-EMS-0861R (Linux Software not Installed)  IMG-EMS-1950R (Linux Software Installed)  IMG-EMS-1951R (Linux Software not Installed)	Third party servers must meet the following minimum requirements for a single IMG 1010 configuration:  See <a href="#">Dell Server Configuration Details</a>
<b>Hardware</b>	Keyboard Mouse Monitor	Not Supplied by Dialogic	Not Supplied by Dialogic
<b>IMG System Software</b>	IMG 1010 = img1010_ver1010xxx_id0101.bin	Factory-Installed	On software CD included with shipment.
<b>GCEMS Software</b>	IMG_<software_version>.bin (Ex: IMG_10.5.0.152)  IMGUserInterface_<software_version>.bin	Factory-Installed	On software CD included with shipment.
<b>Remote Monitoring</b>	VNC Monitor Software	Factory-Installed Obtain updates from RealVNC.	Installed with Linux Red Hat but not enabled.
<b>Install Scripts</b>	- xldhcp - xlntp - lnimg	Factory-Installed	Installed into following directory:  /opt/cantata/common/osconfig (10.3.x-10.5.0) or /opt/dialogic/common/osconfig (10.5.1 <sup>+</sup> )
<b>Operating System</b>	RedHat Linux 3.0 ES, (Kernel 2.4) RedHat Linux 4.0 ES, Nahant Update 6.0 (Kernel 2.6) RedHat Linux 5.0 ES, Tikanga Update 1.0 (Kernel 2.6) <b>NOTE: (RedHat ES 5.1 Software 10.5.0 ER2 +)</b>	Factory-Installed: RedHat 4.0 Nahant Update 6	Obtain Linux Software via RedHat web site. Obtain updates via RedHat web site.
<b>IMG License</b>	<chassis serial number>-<timestamp>.cfg	Sent separately by your supplier.	Sent separately by your supplier.

## Sample Network Scenario - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Introduction

The following is an example of a basic network scenario that you can use to get started with your IMG 1010.

For other options, see Network Interface Scenarios in the On-line Help.



## Licensing - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Introduction

### Overview

The IMG 1010 and various components require a license to be operated or enabled. The licenses are generated by Dialogic and are distributed with the software supplied with the IMG 1010. Each license will unlock different functionality and the licenses are sold in different increments to address different customer needs. The license will need to be transferred to one of the following directories located on the GCEMS server.

/opt/cantata/common/license (Software 10.3.x - 10.5.0)

**-or-**

/opt/dialogic/common/license (Software 10.5.1 and above)

### File Format

The license file supplied contains a unique name which is derived from the serial number of the IMG 1010. The format of the file includes the eight digit serial number first (NNNNNNNN) followed by a timestamp (YYYYMMDDHHSS).

NNNNNNNN\_YYYYMMDDHHSS.cfg

If the license is renamed or altered, it will become unusable.

### Downloading a new License

1. FTP the license file into one of the directories shown above.
2. Right-click the Physical IMG and select **IMG Licensing Info**.
3. Right-click **IMG License Info** and select **Commit**.
4. The License Info pane appears. Click the **Download Node License** button.
5. The license will now get sent to the IMG 1010. The license Info pane now displays the new license specifications.

**NOTE: The license is downloaded to the IMG 1010 based on the serial number. If a license other than the license intended for this machine is sent to the IMG 1010, the license will not download. It has to be specifically created for this machine's serial number.**

**NOTE: Do not rename or alter the license file in any way; it will become unusable if altered.**

### Viewing License Info

You can view the current license status on a Physical IMG using the License Info pane.

## Evaluation License

Evaluation licenses expire after a specified number of days. If you are using an Evaluation License, the **License Expiration Info** field indicates the date/time that the license will expire, as shown below. If you are not using an Evaluation License, the field will say "Does not expire".

You will get an EventView alarm and a warning pop-up in ClientView when there is 72 hours remaining on the license and when it has expired.

IMG License Info	
Property	As-Configured
System Software License Info	IMG10003
License Expiration Info	Expires on Wed Nov 29 05:16:25 2006

## License Validation Failure

If for some reason the license isn't valid for your IMG 1010, the icon shown below will appear in the ClientView tree after creating a Physical Node.

	A license validation has failed. Verify you have the required license and that it is configured on the IMG. See Downloading a New License and the License Info pane.
---	--

## Licensed Components

Below are a list of licenses that can be created for the IMG 1010. Information on each is provided. Table 1 below shows the increments that each license can be purchased.

NOTE:

If licensing remote CIC's, each remote node must have an SS7\_ISUP port license that equals the number of CIC's you want to configure on that remote node.

If configuring SS7 Redundancy, both the Active IMG and its Peer/Redundant node must have an SS7 Base license. This will allow you to configure stacks and links on the Peer/Redundant node

### System Software

System Software License is needed on all IMG 1010's and is specific to the software build (10.5.x, 10.3.x). A basic System Software License includes as a default 1024 DSP Resources

### Switchkit®\_Node

The Switchkit® Node license will allow GCEMS to communicate with the IMG 1010

### TDM\_Port

There are a total of 768 TDM ports on the IMG 1010. (24 E1 and 32 T1) Table 1 below displays the increments that the licenses are created.

**SS7\_Base**

The SS7 base license will need to be loaded if SS7 is going to be used.

**SS7\_ISUP (CICS)**

Up to 768 Ports can be licensed on the IMG 1010. See Table Below.

**SS7\_LINK**

Up to 64 links can be licensed. They are licensed in 2 link pairs.

**CAS**

Up to 768 ports can be licensed for CAS channels. By default when ordering TDM port licenses you are automatically given the same number of CAS licenses with no extra charge. See Table 1 below

**VoIP\_Ports**

There are a total of 1024 VoIP Ports. See Table 1 below. If the IMG 1010 has two VoIP modules installed, channels are assigned to each module in groups of 32. For example, if the IMG 1010 is licensed for 96 channels, 64 will be on the first module and 32 will be on the second module.

The Maximum amount of licenses that can be configured is 768 unless the IMG 1010 is being used for **transcoding**. In this case there are 1056 licenses available.

**ISDN\_Ports**

Up to 768 ports can be licensed for ISDN B channels. See Table 1 below.

**Wireless Codecs**

Up to 672 ports can be licensed for AMR AND EVRC. See Table 1 below.

**TABLE 1 BELOW SHOWS THE INCREMENTS IN WHICH LICENSES ARE CREATED**

**Table 1**

SS7 ISUP	CAS	VOIP	ISDN	EVRC CODEC	*AMR CODEC
64	64	64	64		
96	96	96	96	96	96
192	192	192	192	192	192
288	288	288	288	288	288
384	384	384	384	384	384
480	480	480	480	480	480
576	576	576	576	576	576
672	672	672	672	672	672
768	768	768	768		
		864			
		960			
		1024			

**DSP\_Resource Points**

The IMG 1010 initially comes licensed with 1024 Resource Points. Licenses are then created in 1024 port increments. 1024, 2048, 3072, 4096, 5120

**SS7 Links**

The IMG 1010 supports up to 64 links. The links are licensed in 2 link increments from 2 all the way up to 64.

\* Using the AMR-NB resource in connection with a Dialogic® product does not grant the right to practice the AMR-NB standard. To seek a patent license agreement to practice the standard, contact the VoiceAge Corporation at <http://www.voiceage.com/licensing.php>.



## IMG 1010 - Hardware Installation

### Hardware Installation Task Summary - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

Click on links below to perform each of the following steps.

1. Prepare the site that IMG 1010 will be installed.  
[Prepare Site](#)
2. Unpack IMG 1010 from shipping box.  
[Unpack the IMG](#)
3. Mount the IMG 1010 in one of the two scenarios listed below.  
[Rack Mounting the IMG](#)  
[Surface Mounting the IMG](#)
4. Connect Power  
[Connecting AC Power](#)  
[Connecting DC Power \(IMG 1010 Only\)](#)
5. Connect IMG 1010 to Networks  
[Connect Ethernet and TDM Cables](#)
6. Loop Timing can be configured on specific ports. See diagram on where loop timing can be configured.  
[Connect Timing \(IMG 1010 Only\)](#)
7. The IMG 1010 has an active and standby port for each of the Ports below. Click on each link to see diagram displaying how redundancy needs to be setup.  
[Redundant Control \(IMG 1010\)](#)  
[Redundant Data \(IMG 1010\)](#)  
[Redundant Signaling \(IMG 1010\)](#)

**Related Topics:**

RJ 48 Connector Pinouts (in the On-line Help)

**Next Task:**

Software Installation

## Site Preparation - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

Ensure that the following requirements are met before you begin installation.

**Important:** Any variances from the mutually agreed upon site preparation details (such as power cabling, network cabling, equipment room readiness) may affect installation scheduling.

### Site Preparation Checklist

Requirements	Completed
Location	<input type="checkbox"/>
Spacing	<input type="checkbox"/>
Mounting	<input type="checkbox"/>
Power	<input type="checkbox"/>
Electromagnetic Interference	<input type="checkbox"/>
Channel Service Units	<input type="checkbox"/>
Electrostatic Discharge Protection	<input type="checkbox"/>

#### Location

- The -48 V DC unit must be located in a restricted area, such as a dedicated equipment room or limited access office.
- The 120/240 V AC unit does not have to be located in a restricted area. For example, it can be located in a clean and well ventilated office space.

#### Spacing

Allow approximately 76 cm (2.5 ft.) of space in front of the IMG 1010, so that the tray can be freely removed and maneuvered.

## Mounting

The IMG 1010 can be mounted in a 19-inch rack. The mounting brackets can be mounted at either the front or the middle of the chassis.

 <p><b>CAUTION</b></p>	<ul style="list-style-type: none"> <li>• If mounting multiple IMG 1010's in a rack, ensure that a hazardous condition does not exist due to uneven mechanical loading.</li> <li>• Avoid mounting inside a cabinet with closed doors unless you can provide sufficient ventilation inside the cabinet. Elevated operating ambient conditions may occur in an enclosed equipment rack. The operating ambient temperature may be greater than the room temperature.</li> <li>• Do not block the front of the chassis; doing so can cause the unit to overheat.</li> </ul>
---	--

## Power

See

[Connecting AC Power](#)

[Connecting DC Power](#)

## Electromagnetic Interference

Electromagnetic Interference (EMI) is a type of radiation that can hinder your system. Keep the following in mind when selecting cables:

- Shielded cable prevents outside electrical interference and drains off any induced current.
- Twisted wire reduces induction, and thus interference, from one wire to the other. Varying the length of twists reduces the potential for signal interference between pairs.
- Twisted pair wiring is available in various thicknesses. Thicker cable covers longer distances and provides better sound quality but it is more expensive.

## Channel Service Units

A Channel Service Unit (CSU) connects a digital phone line (T1, E1) from the phone company to a digital communications device. CSUs are required between all telecommunication ports and the network to provide necessary linking capabilities such as:

- Line conditioning for long haul transmissions
- Remote loopback
- Equalization
- Regeneration and monitoring of digital signals
- Digital circuit testing
- Protection from outside lines

## Electrostatic Discharge Protection

Electrostatic Discharge Protection (EDP) must always be used. Electrostatic Discharge (ESD) protective straps, shoes, or mats must be used when working with electronic components.

 <p><b>CAUTION</b></p>	<p>Electrostatic discharge from your body can damage integrated circuits during installation.</p>
---	---

## Unpacking - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

Retain all shipping materials in case you need to either relocate or re-ship the unit in the future. Use the packing materials to return the unit to the supplier; otherwise you may be charged for any damage that may occur during shipment.

### Procedure

The IMG 1010 and supplied items are shipped in a single container. Carefully unpack as described below.

1. Open the container and remove the packing list.
2. Remove the protective cover and remove the IMG 1010 from the container.
3. Carefully remove the static protective bag.
4. Carefully inspect the IMG 1010. Should any discrepancies exist, contact your supplier representative immediately.

### Supplied items

Review the packing list to ensure that the following items have been sent. Should any discrepancies exist, contact your supplier representative immediately.

#### AC Power Chassis

- AC power cord (AC option)
- Software CD ROMs

#### DC Power Chassis (IMG 1010 Only)

- DC power module plugs (2) (DC option)
- DC grounding lug (factory-installed on back of unit) (DC option)
- Software CD ROMs

#### Next Task

[Rack Mounting the IMG](#) or  
[Surface Mounting the IMG](#)

## Rack Mounting - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

### Overview

The IMG 1010 is shipped with the tray and docking station mated together for easy mounting. When mounting the chassis, follow these guidelines:

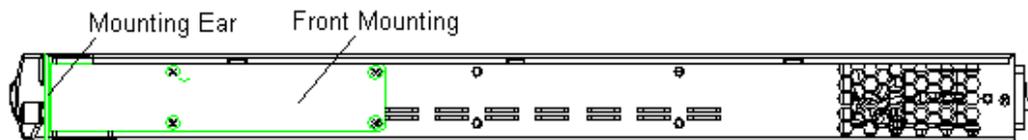
- Do not obstruct air flow to the front or the side vent holes towards the rear of the unit.
- Allow approximately 76 cm (2.5 ft.) to slide the field-replaceable tray out.

### Mounting Options:

#### Factory Installed 19" Bracket Position

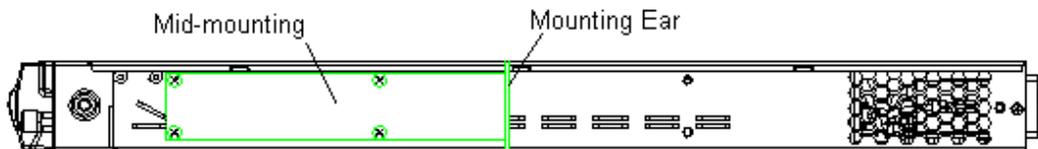
The IMG 1010 ships with brackets for a 19" inch rack. They are installed in the front mount position as shown below.

#### Front Mount (factory default)

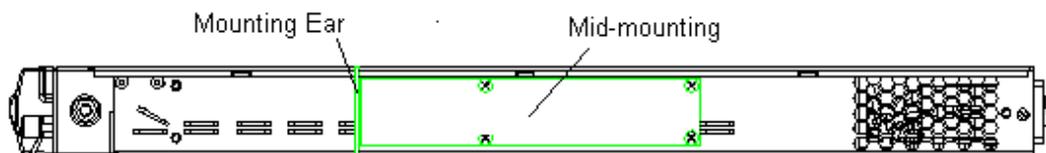


The brackets can be positioned and rotated to align bracket ears as required. There are two mid-mount options. See diagram below showing the two options.

#### Mounting Ears on bracket facing rear:



#### Mounting Ears on bracket facing forward:



## 19" Rack Mounting

### Procedure:

1. Remove the brackets from the front mount position.
2. Position the mounting brackets to the desired position.
3. Align the holes on the mounting bracket ears to the mounting holes on the rack.
4. Secure with screws.

### Required Tools and Hardware

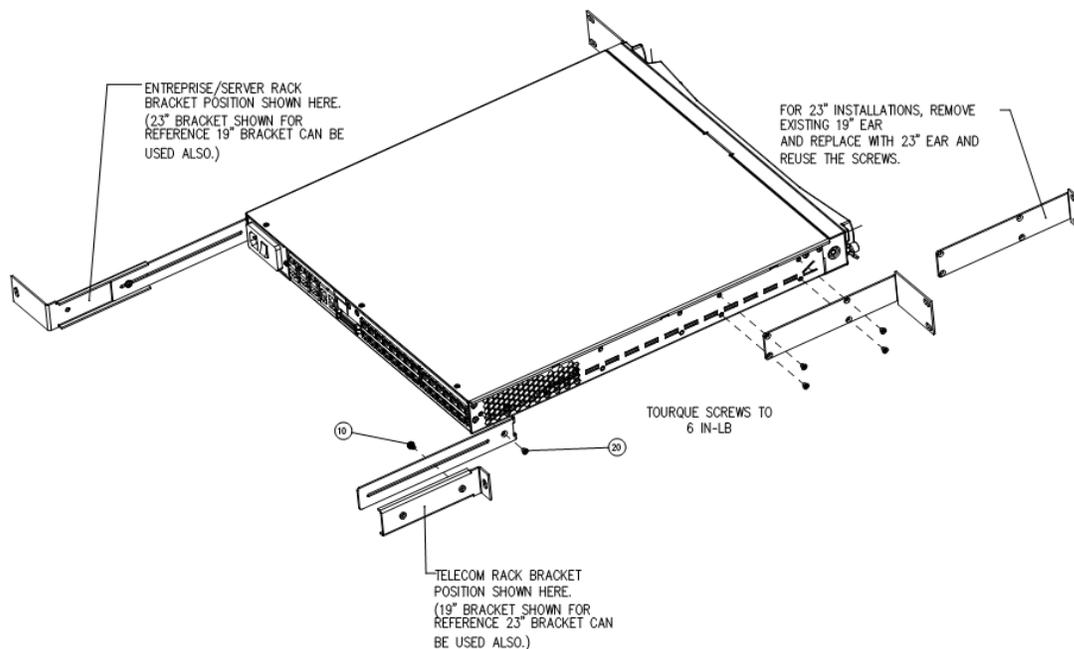
The following customer-supplied tools and hardware are needed to mount the unit.

- Phillips head screwdriver
- Rack mounting hardware

**NOTE:** At the rear of the unit on each side, a mounting hole with a captive nut is available for attaching additional mounting ears for extra support. Contact your Sales Representative to order additional brackets. Use 6/32 screws for this application.

## 23" Rack Mounting

- A bracket for a 23" rack can be ordered for use in Enterprise racking. The bracket has front and rear mounting options for added stability. See Below



**Procedure**

1. Remove existing 19" brackets from front mounting position.
2. Replace with 23" brackets, re-using existing screws.
3. Attach Rear Bracket Mounts to chassis as shown in figure.
4. Attach 23" brackets to the Bracket Mounts using screws provided.

**Required Tools and Hardware**

- 23" Bracket Kit includes 4 brackets and 2 screws. The 23" rack mounting option can be ordered directly from Dialogic.
- Phillips head screwdriver

**Next Task**

[Connecting AC Power](#) or  
[Connecting DC Power](#)

## Surface Mounting - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

### Mounting Guidelines

When mounting the chassis, follow these guidelines:

- Do not obstruct air flow to the front or the side vent holes towards the rear of the unit.
- Allow sufficient room, approximately 76 cm (2.5 ft.), to access the tray.

### Procedure

1. If desired, mount the self-adhesive feet to the bottom of the unit to protect the surface finish.
2. Set the unit on a clean, secure, and level surface.

### Next Task

[Connecting AC Power](#) or  
[Connecting DC Power](#)

## Connecting AC Power - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

### Related Topic

AC Power Information (in On-line Help)

### Overview

The IMG 1010 supports an AC power option to support domestic and international customers. The AC power module is located at the rear of the docking station. The AC receptacle connects to an internal power supply that supplies DC voltages to the motherboard. (12 V DC for IMG 1010)

### Warnings/Cautions

- Ensure the AC power module switch is set to O (Off) prior to connecting the IMG 1010 to the AC power source.
- Do not ground the AC unit using the external grounding points located at the rear of the unit. These grounding points are for DC unit grounding only.
- The power up sequence will only start when the tray is fully seated into the docking station, to ensure that the main board does not power up until the system is properly seated.

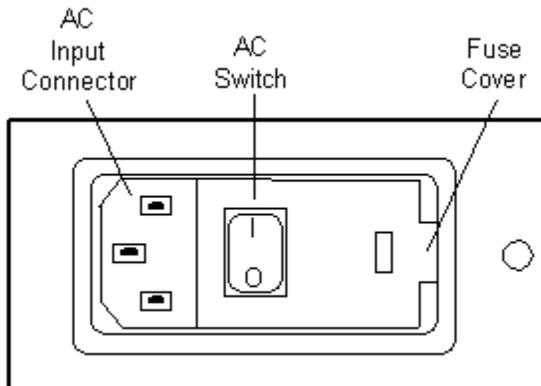
### Procedure

Complete the following steps to connect AC power to the chassis.

1. Plug the AC power cable into a grounded outlet.
2. Plug AC cable into the receptacle on the AC power module.
3. Insert other end into a grounded wall outlet, uninterruptible power supply (UPS), or surge protector.
4. Press switch on the AC power module to I (On).

## AC Power Module

The AC power docking station provides an AC input power module with an integrated fuse, power switch, and standard three position female AC input connector. This connector allows the docking station to interface with all variations of AC outlets by simply using a standard power cable with a compatible outlet plug. The figure below shows the AC Power Module.



## Other Considerations

### Uninterruptible Power Supply Option

If your site has frequent power interruptions, consider using an Uninterruptible Power Supply (UPS) for your IMG 1010. You can avoid downtime by running your system that receives its AC power from batteries during a power failure.

### Surge Protection

It is advisable to install a surge protector between your call processing system and the power outlet. If a high voltage surge occurs on the power line, this device can protect your system by sending the overload to ground.

## Connecting DC Power - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

The IMG 1010 supports a DC input power option that supports both domestic and international customers.

### Docking Station:

The DC docking station provides a DC power module with two -48 VDC input power terminals and two ON/OFF circuit breakers. You can select either a single non-redundant power source or dual redundant power sources.

### Power Specifications:

	DC Voltage	Operating Range
Power	- 48 Volts Nominal / 7amps	-40 - to -60 vDC

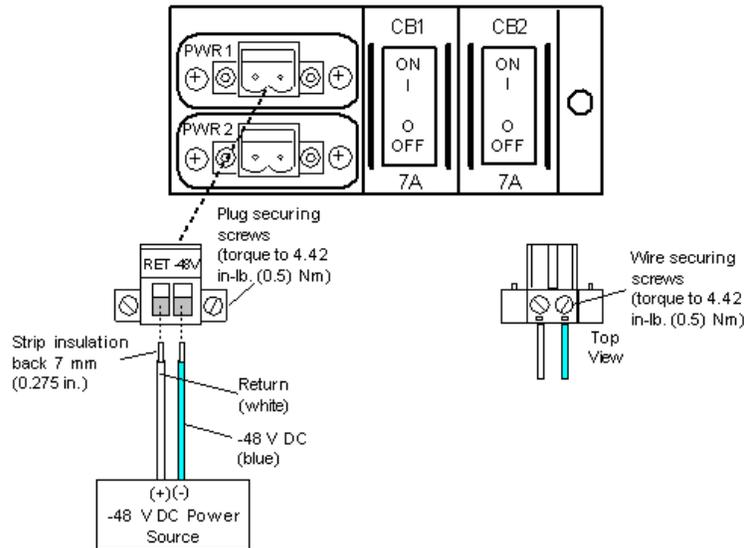
### -48 Volt Connections

When connecting -48 Volts to the IMG 1010 follow the table and diagram below

14 AWG Machine Tool Wire (MTW)	Blue = -48 volts	White = -48 volt return
DC Power Module Plugs	Dialogic Supplied	

## Single Power Source:

The DC power module shown below is located at the rear of the docking station. Internally the output of the DC power module connects to a panel-mounted connector via a cable assembly. This connector mates with a DC-to-DC 12 V DC power supply connector on the tray.



## DC Connections:

Complete the following steps to connect a single power source to the DC power module.

1. Ensure both circuit breakers on the DC power module are set to OFF (O).
2. Turn power OFF at power source.
3. Route the RET and -48V wires from the external power source to the DC power module plug. Secure the wires to the plug with screws. **NOTE:** The power module plugs are in a small plastic bag included in your shipment.
4. Insert the plug into the DC power module and secure with screws.
5. Turn power ON at power source.
6. Press the required circuit breaker on DC power module to ON (I).

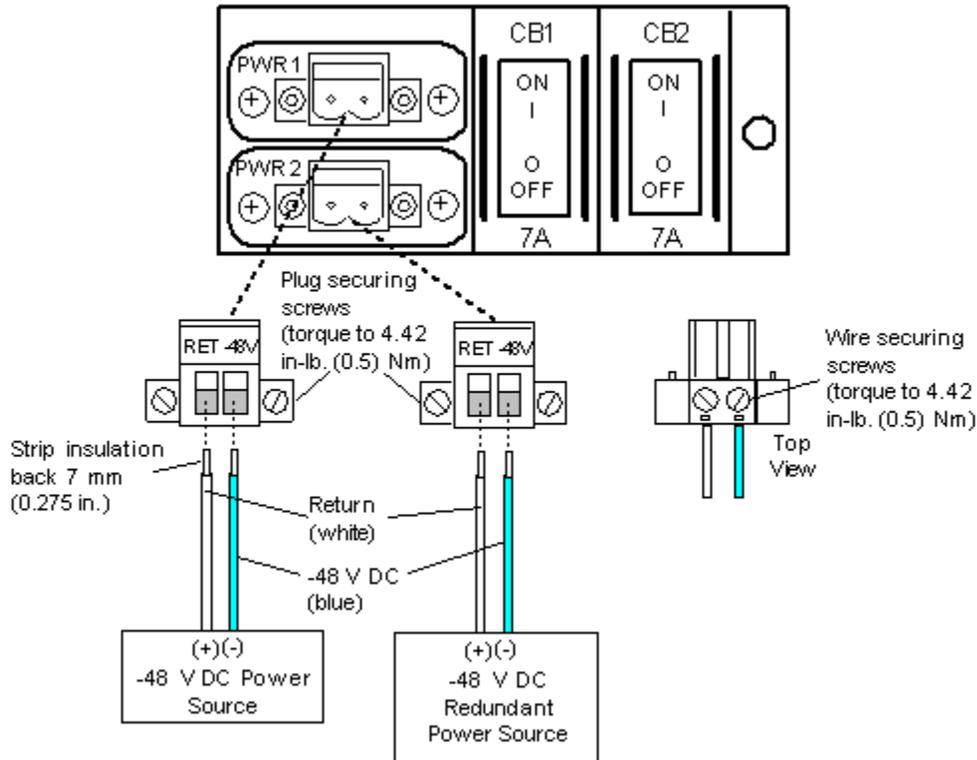
## Warnings/Cautions

### WARNING:

- Failure to turn power OFF at the power source may result in electrical shock.
- Ensure that the wires are pushed into the plug far enough, so that none of the copper is visible.
- The DC power module plugs are polarity sensitive. The unit will not operate if the plugs are not wired correctly. See wiring diagram below.

## Redundant Power Source:

A second power source can be added to the chassis for power redundancy. The secondary source serves as backup to the primary source (power supply).



## DC Connections

Complete the following steps to connect a redundant power source to the chassis

1. Ensure both circuit breakers on the DC power module are set to OFF (O).
2. Turn power OFF at redundant power source.
3. Route the RET and -48V wires from the redundant power source to the DC power module plug. Secure the wires to the plug with screws. **NOTE:** The power module plugs are in a small plastic bag included in your shipment.
4. Insert the plug into the DC power module and secure with screws.
5. Turn power ON at redundant power source.
6. Press the required circuit breaker on the DC power module to ON (I).

## Warnings/Cautions

### WARNING:

- Failure to turn power OFF at the redundant power source may result in electrical shock.
- Ensure that the wires are pushed into the plug far enough, so that none of the copper is visible.
- The DC power module plugs are polarity sensitive. The unit will not operate if the plugs are not wired correctly. See wiring diagram below.

## Connecting DC Power to Ground

### Warning

Always connect the DC unit to earth ground before connecting DC power to maintain signaling integrity and to prevent electrical shock. Do not connect ground to -48 V.

### Earth Ground Wiring Specifications

To connect a true earth ground to the chassis, you need the following:

1. 14-16 AWG machine tool wire (MTW) (green/yellow)
2. # 10 solderless crimp with two-hole mounting option to connect to grounding lug (Dialogic-supplied). See Diagram below for mounting.

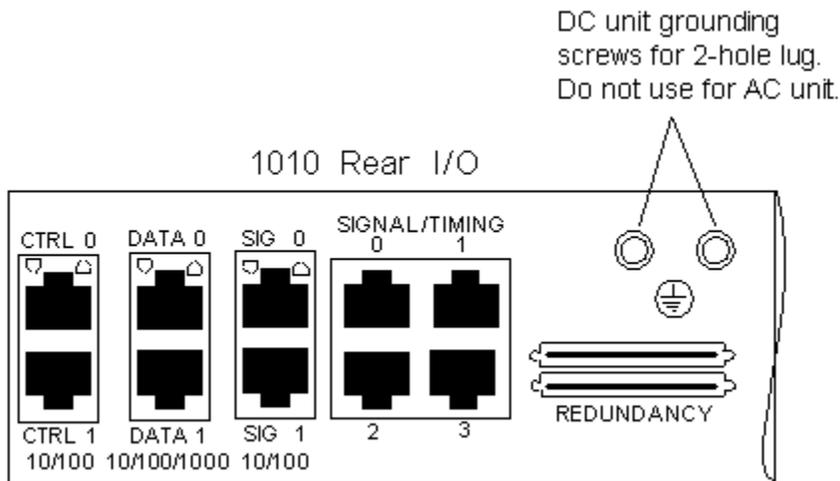
### Procedure

Complete the following steps to connect the IMG 1010 chassis to earth ground.

1. Remove the two-hole grounding lug at the rear of unit.
2. Crimp the grounding wire to the lug. Re-attach the lug to the unit using the grounding screws.
3. Attach the other end of grounding wire to either a grounding point on the mounting rack or a building ground point.

### Diagram

The figure below shows the IMG 1010 earth ground connection for the DC unit.



## Connecting Ethernet and TDM Cables - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

**CAUTION:** Routers or switches connected to the IMG 1010 should be configured for 100Mbit and Auto-negotiation. Disabling auto-negotiation may result in packet loss. Also, broadcast propagation between ports must be enabled to allow BootP.

### Network Interface Ports

There are three types of Network Interface ports on the IMG 1010:

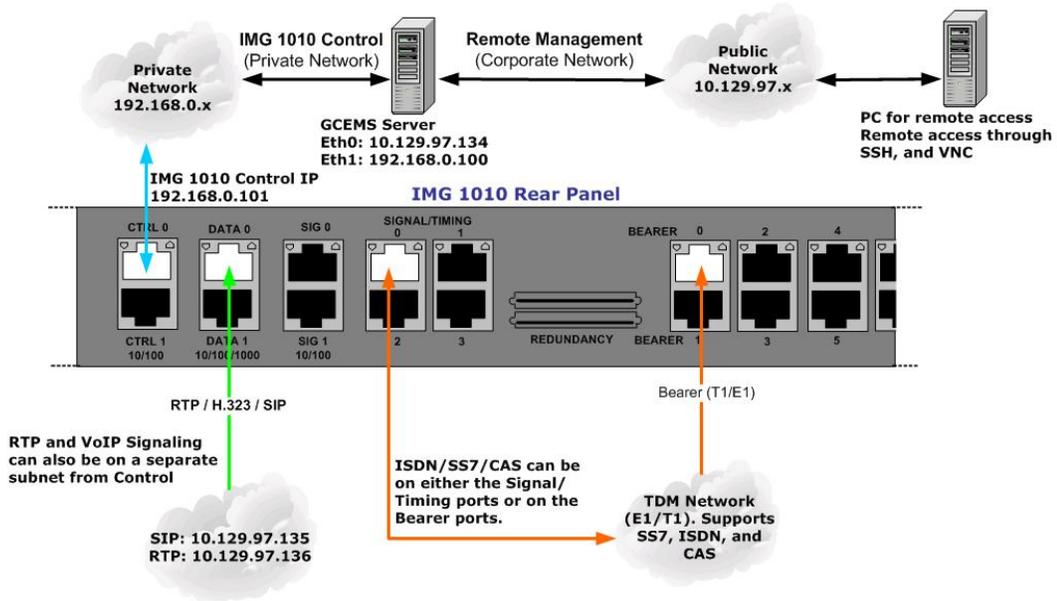
- Control (Network Management)
- Data (RTP)
- Signaling (H.323)

The IMG 1010 supports a variety of scenarios for designing your IP network. In this example, the Network Management is connected to CTRL 0 and the VoIP interfaces to DATA 0. These can be on either the same or different subnets.

For information on the various scenarios supported, see IMG 1010-Network Interface Scenarios in the On-line Help.

### TDM Bearer Channels and SS7 Signaling

In this example scenario, the Bearer ports are used for both bearer and signaling. Your SS7 Signaling can also be brought into the SIGNAL/TIMING port.



### Related Topic

RJ 48 Connector Pinouts

## Timing - IMG 1010

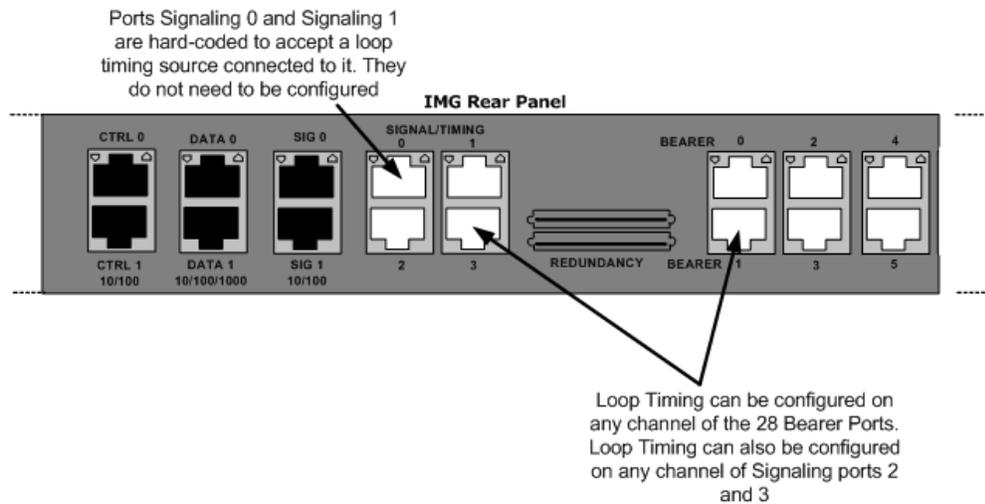
**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

### Timing

Before connecting the IMG 1010 to a network, it must be synchronized to a T1/E1 loop timing source such as a T1 or E1 span. The IMG 1010 will allow four different loop timing clock sources to be connected to various inputs on the rear of the unit. The IMG 1010 will allow a loop timing source to be connected to any of the 28 TDM Bearer Ports and any of the four Signaling Ports on the rear of the chassis. The Pinouts of the RJ48 connectors are shown in RJ 48 Connector Pinouts.

**NOTE: The IMG 1010 cannot time off an atomic clock or similar. The TDM inputs on the rear of the unit will only accept a loop timing clock source from a T1, E1, or DS3.**

### IMG 1010 Back Panel



## Cabling for Redundancy - IMG 1010

**Topic Location:** *IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation*

The following topics show cabling for various redundancy scenarios.

[Redundant Control](#)

[Redundant Data](#)

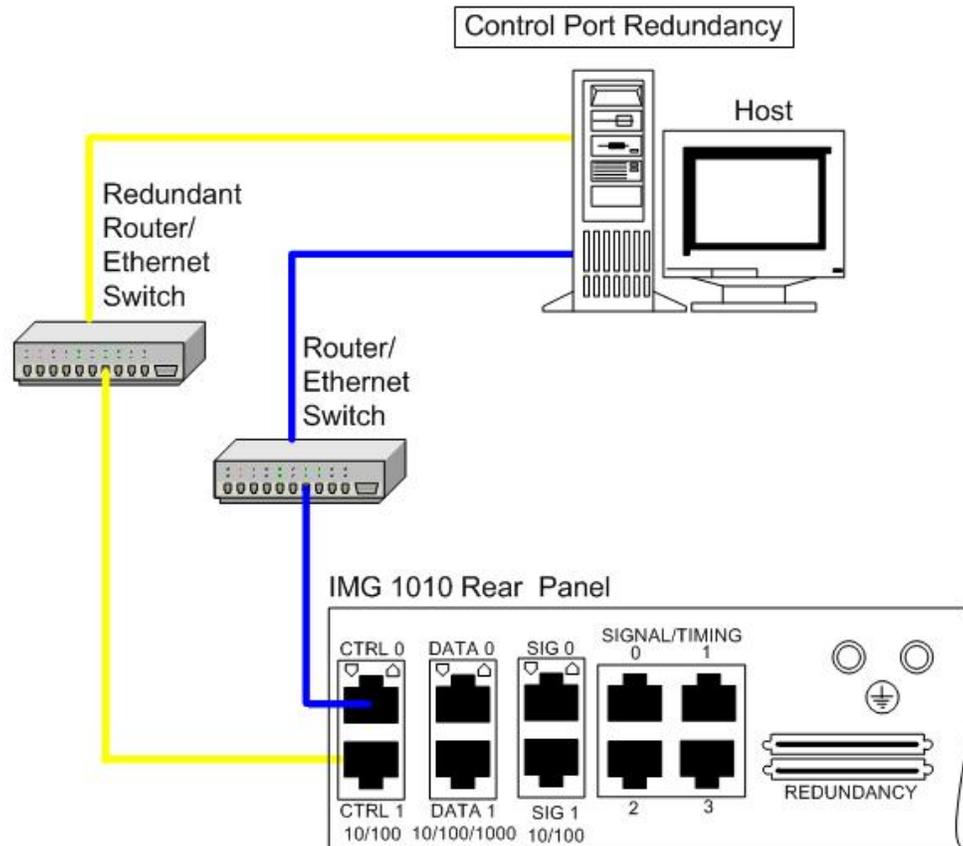
[Redundant Signaling](#)

[Redundant SS7](#)

## Redundant Control - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

The following illustration shows the cabling for redundant control for Network Management.

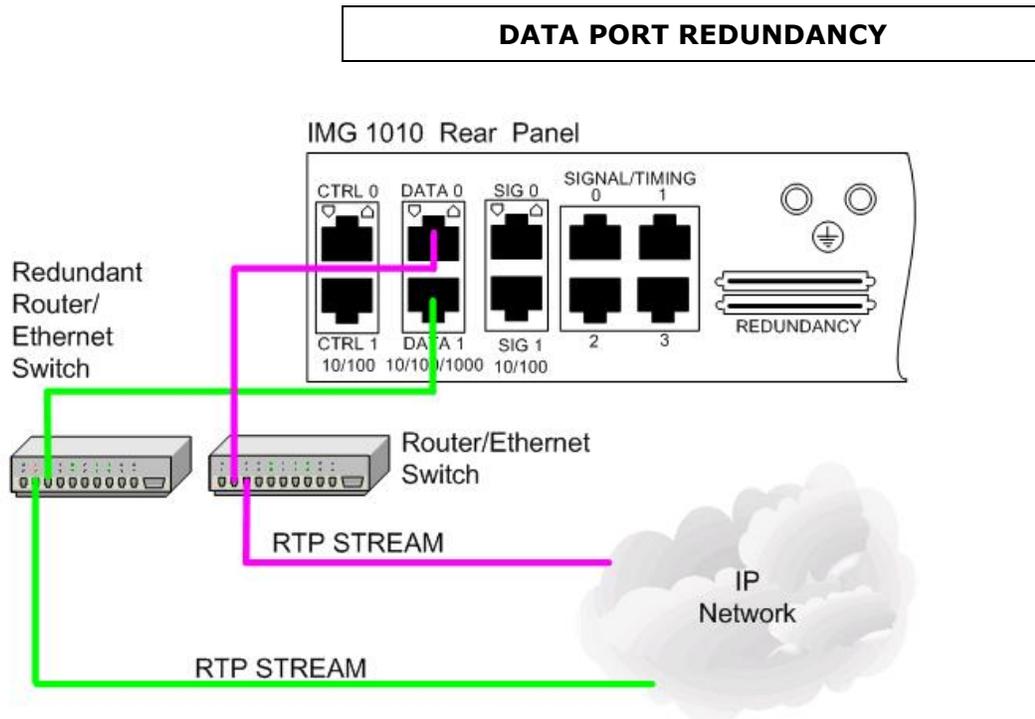


1. The Ctrl 0 and Ctrl1 ports are used for communication between the Linux Server (GCEMS) and the IMG 1010.
  - The CTRL0 and CTRL1 Ports will use the same IP address.
  - The CTRL1 MAC addresses is CTRL0 MAC + 1.
  - The MAC address of CTRL0 and CTRL1 are configured through BootP using the DHCP service on the GCEMS Linux server or using the SD Card. See [dhcpd.conf](#)
  - The CTRL ports are used for communication to the GCEMS server for configuration and monitoring. These ports can also be used for the following:
    - SIP / H.323 signaling
    - NFS for download routing, translation tables, and call treatments
    - SNTP
    - SNMP

## Redundant Data - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

The following illustration shows the cabling for redundant data.

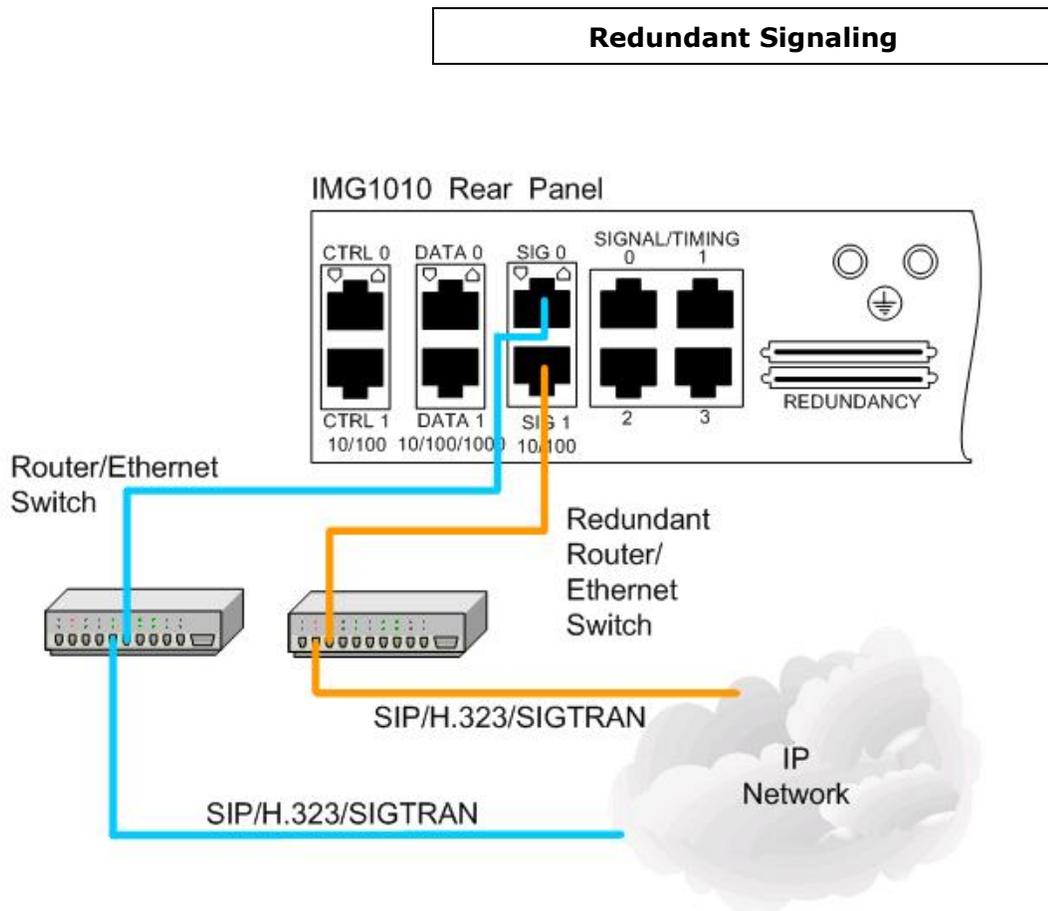


1. The DATA0 and DATA1 ports are used for communication between the IMG 1010 and the IP network.
  - Ethernet Ports DATA0 and DATA1 are used for RTP streams.
  - Ethernet Ports DATA0 and DATA1 can also be used for SIP or H323 signaling.
  - VOIP Module 0 and Module 1 send RTP to and from the ethernet DATA Ports within the IMG 1010
  - An IP address shared by DATA0 and DATA1 for redundancy is configured in Clientview.

## Redundant Signaling - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

The following illustration shows the cabling for redundant VoIP signaling.

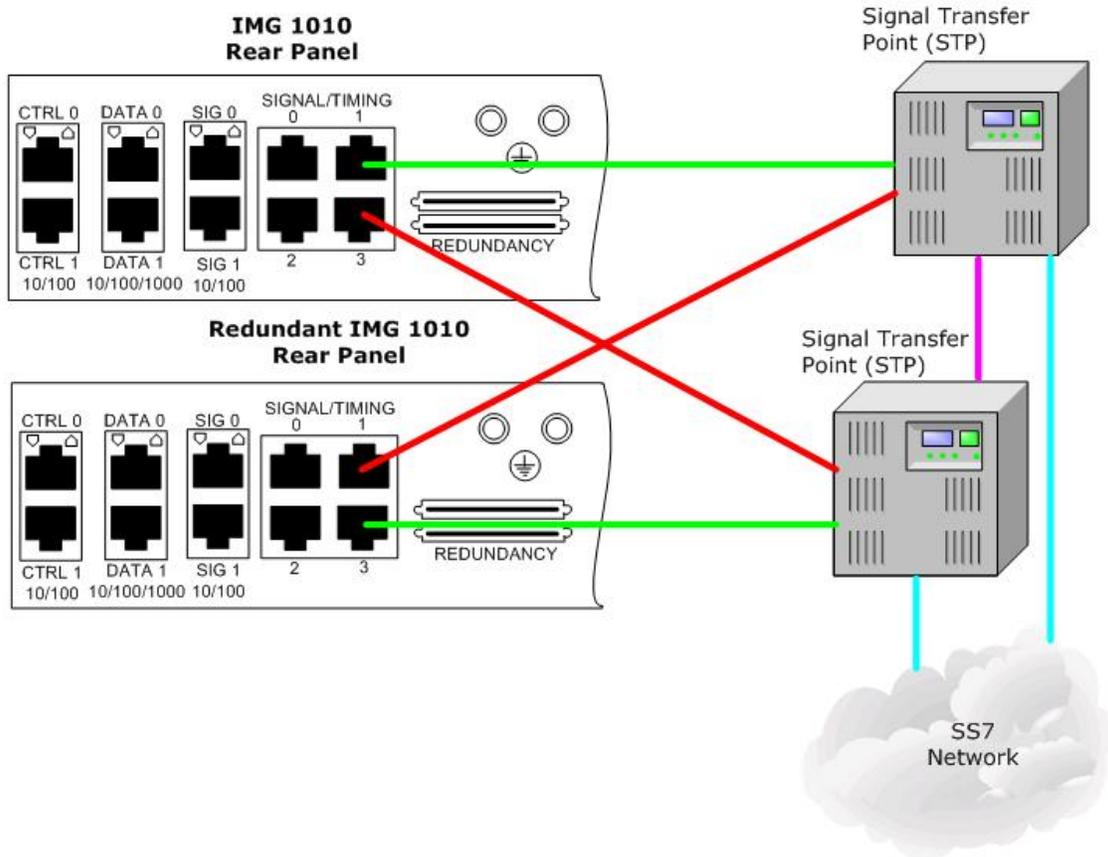


1. The SIG0 and SIG1 ports are used for communication between the IMG 1010 and the IP network.
  - Ports SIG0 and SIG1 are used for SIP or H.323 Signaling.
  - An IP address shared by SIG0 and SIG1 for redundancy is configured in Clientview.

## Redundant SS7 Signaling - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Hardware Installation

The following illustration shows the cabling for redundant SS7 signaling.





# IMG 1010 - Linux Red Hat Installation

## Installing Linux on the GCEMS Server

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG1010-Linux Red Hat Installation  
-or-

IMG 1004-Installation and Setup Guide > IMG1004-Linux Red Hat Installation

### Before You Begin

Install Operating System Software per manufacturer's instructions. Below is a procedure on installing Red Hat Enterprise Linux. The procedure should be used as a guideline to installing the Linux OS. It should not be followed exactly since the installation changes with each version of Red Hat released.

### Notes:

GCEMS currently supports the following Operating Systems in 32 bit versions only. **GCEMS does not support 64 bit version of Red Hat Linux**

- RedHat Linux 3.0 ES, Kernal 2.4
- RedHat Linux 4.0 ES Nahant Update 6.0, Kernel 2.6
- RedHat Linux 5.0 ES Takanga Update 1.0, Kernel 2.6 for software 10.5.0 ER2 +.

**NOTE:** If you are installing Linux on a Dell server and your Linux installation files are on a CD-R, the Dell Server Assistant may not recognize the CD-R. If this occurs, you will need to install your Dell Server software manually (without using the Dell Server Assistant) and then install the Linux files.

**NOTE:** In order to customize partitioning as required to run the GCEMS, you must use Dell Server Assistant Version 8.4 P/N: K7709 Rev. A00 or above.

### Note on Re-installation

If you have to re-install Linux, close ClientView and stop all GCEMS or Linux processes that are running.

### Red Hat Enterprise Linux Installation:

1. Insert Linux Installation Disk 1. Reboot the machine. The CD will boot into a screen that will ask how you would like to install the OS. In this example the Graphical mode was selected. A welcome screen will appear select next.
2. The next few screens will configure language and Keyboard Type. Make selections accordingly
3. The next screen will ask whether to install OS as a fresh installation or to update existing. In this example a fresh installation was chosen
4. The hard drive needs to be configured. Either Automatic or Manual partitioning can be chosen. In this example manual partitioning was chosen. Below is the recommended partitioning scheme and hard drive sizes. Also has 1 giga-byte of RAM.

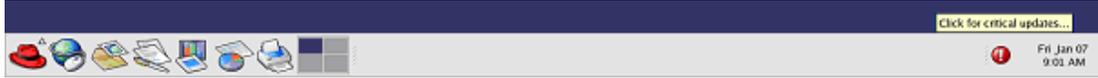
Partition	Recommended with Hard Drive = 80 Gig
/	(Remaining Balance)
boot	1024 MB
swap	4096 MB
usr	10240 MB
home	12301 MB
opt	23234 MB
var	10240 MB

Partition	Recommended with Hard Drive = 160 Gig
/	4.2 GB
boot	200 MB
swap	2.00 GB
usr	28.8 GB
home	32 GB
opt	64 GB
var	28.8 GB

5. Once partitioning is finished then you will be asked whether to remove all partitions existing on drive. In this example removing all partitions was selected.
6. Configuring the ethernet interfaces is done next. In this example a static IP address was given to the machine. Uncheck "Configure using DHCPD". This will allow you to enter a hostname for the machine along with Default Gateway and Primary/Secondary/Tertiary DNS IP addresses.
7. Enable/Disable the firewall will be asked. Select accordingly. In this example the firewall was **disabled**.
8. If the firewall is enabled be sure to check the boxes for each service that you would like to allow access to. In this example all boxes were checked. Also remote access will be blocked if the firewall is enabled. See [Configuring Remote Desktop](#) for more information
9. If you would like a warning each time a cookie etc is loaded select to enable SELinux. If not select to Disable SELinux. In this example it was disabled.
10. The next few screens ask about additional language support and Time Zone information. Make selections accordingly.
11. Root password will be configured next. Dialogic recommends that the root password be set to **excel2**. If support is needed then the Dialogic Support team will need this password if it is not given the default value of excel2.
12. The packages to be installed are the next piece to get configured. In this example the box at the bottom was chosen indicating all packages will get installed including packages that are not displayed. Dialogic recommends that you install everything so that all utilities are installed for troubleshooting etc.
13. The OS will now get installed. The installation will prompt which disks to load at certain times. Installation will take approximately 60 minutes to complete.
14. Once all Linux packages are installed remove the disks and reboot the machine.
15. When the machine comes back after reboot you will be asked for a last basic configuration. Go through this configuration giving the following as the Linux user:

```
username: excelsw
password: excelsw
```

16. The installation on Red Hat Enterprise Linux is complete. You can register your copy of Linux and install any updates. Located at bottom of Linux screen is a flashing red circle. Updates can be loaded from the Red Hat site by clicking on this red circle. See below



17. Once system is updated with all packages installation of GCEMS and configuring of all Linux services needed will be performed. See either **IMG 1010-Software Installation and Setup** -or- **IMG 1004-Software Installation and Setup** (Dependent on which model being configured) for information on how to accomplish this.

### **Related Topics**

[Recommended Linux Configuration](#)

## Dell Server Configuration Details

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG1010-Linux Red Hat Installation

- or -

IMG 1004-Installation and Setup Guide > IMG1004-Linux Red Hat Installation

### NOTE:

- **The Dell 860 Pentium D server in table below is to be used on configurations with 4 or less IMG Nodes.**
- **The Dell 1950 server in table below is to be used on configurations from 4 to 32 IMG Nodes**
- **The Dell CR100 server in table below is to be used on configurations from 4 to 32 IMG nodes. The Dell CR100 supports Red Hat Linux Enterprise 4.0 and 5.0**
- **The part numbers are the base numbers of the GCEMS server and do not include Linux Red Hat OS loaded on them.**
- **The IMG CR-100 server does not include a CD-ROM drive within the unit. A USB CD-ROM drive is included in some server bundles and is also available for purchase from Dialogic for instances when a CD-ROM drive is required.**

Server	47-0200-00	47-0202-00	47-0203-00	47-0182-01 (Going EOL)
Model	Dell 860 Pentium D	Dell CR100	Dell CR100	Dell 1950
Processor	3.2 GHz Pentium D (935)	1.8 GHZ Dual Core E2160	1.8 GHZ Core 2 Duo E4300	3.0 GHz (5160)
Processor Qty	1 of 1	1 of 1	1 of 1	1 of 2
L2 Cache	4 MB	1 MB	2 MB	4 MB
Memory	1 GB DDR2, 667MHz	1 GB DDR2	2 GB DDR2	1 GB, 667 MHz
Hard Drive	80 GB SATA (7.2 K rpm)	160GB, 3.5 SATA (7.2K rpm)	250GB, 3.5 SATA (7.2K rpm)	73 GB SAS, 3.5 IN, (15 K rpm)
Hard Drive Quantity	2	1	1	2
Hard Drive Controller	SAS5iR RAID	None	None	PERC 5/i
Optical Drive	CD	None	None	CD 24X
Power Supplies	1 of 1, AC	1 of 1, AC	1 of 1, AC	1 of 2, AC
Rack Mount Kit	Included	Optional	Optional	Optional
ROHS	Yes, 5 (includes Pb exemption)			

## Recommended Linux Configuration and OS Settings

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG1010-Linux Red Hat Installation  
-or-

IMG 1004-Installation and Setup Guide > IMG1004-Linux Red Hat Installation

### Partitioning

The tables below display the partitioning configured on the Dell Servers that can be purchased as an option when purchasing the IMG. There are two tables shown below. The first is for customers using Linux Red Hat Enterprise 3.0 or 4.0 The second table is for customers using Linux Red Hat 5.0 (Software 10.5.0 ER2 +)

**NOTE: GCEMS does not support 64 bit versions of Red Hat Linux**

Linux Red Hat Enterprise 3.0 and 4.0	
Partition	Recommended Size (MB) Hard Drive = 80 GB
/	(remaining balance)
boot	1024 MB
swap	4096 MB
usr	10240 MB
home	12301 MB
opt	23234 MB
var	10240 MB

Linux Red Hat Enterprise 5.0	
Partition	Recommended Size (MB) Hard Drive = 160 GB
/	200 MB
boot	2 GB
swap	4.2 GB
usr	28.8 GB
home	32 GB
opt	64 GB
var	28.8 GB

### Settings

- Select default boot loader
- Enter Network Configuration Parameters
- Disable Linux Firewall
- Select your Additional Language Support
- Set the Time Zone selection
- Set System Root Password (Super User is root)
- Dialogic Defaults are:
  - user: root
  - password: excel2

## Linux Packages

At the very least install the packages in the table below. It is recommended that when installing Linux that the choice to select all packages be chosen. This will install all Linux Packages and will use approximately 7 Gigabytes of Hard Drive space

Desktops	X Windows SYSTEMS GNOME DESKTOP ENVIRONMENT KDE DESKTOP ENVIRONMENT
Applications	EDITORS ENGINEERING AND SCIENTIFIC GRAPHICAL INTERNET
Servers	Server Configuration Tools Windows® File Server FTP Server Network Servers (including freeradius) Legacy Network Server
Development	Development Tools
System	Administration Tools System Tools (including ethereal-gnome, and net-snmp-utils)

## Services

### Required

The following Linux Services are required. Ensure that the corresponding boxes are checked for all run levels (3, 4, and 5). For help configuring services see [Selecting/De-selecting Linux Services](#).

- arptables if
- atd
- auth (installed at factory but not selected)
- autofs
- crond
- dhcpd
- dkms autoinstaller
- gpm
- irqbalance
- keytable
- mdmonitor
- microcode-ctl
- netfs
- network
- nfs
- nfslock
- ntpd
- portmap
- random
- rawdevices
- rhnsd
- sgi-fam
- sshd
- syslog
- vnc server (RealVNC installed at factory but not set to run)
- vsftpd
- xinetd

**Not Required**

The following Linux Services are not required. For superior IMG performance, it is advisable not to run them. During Linux Configuration, uncheck the corresponding boxes if they are checked. Set for all run levels (3, 4, and 5)

- apmd
- audit
- cups
- hpoj
- iptables
- iptables6
- irda
- isdn
- kudzu
- PCMCIA
- sendmail



# IMG 1010 - Software Installation and Setup

## Software Installation and Setup - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup

### Overview on Downloading Software to IMG 1010

The IMG 1010 can get its software load in one of a three different ways.

1. Software is loaded through use of an FTP server. The Linux Server that is setup for use with GCEMS can also be setup to use as an FTP server. **See the procedure in this topic below**
2. Software is loaded through use of an SD Card which can be inserted into the front panel of the IMG 1010  
[IMG 1010 - Downloading System Software from an SD Card](#)
3. A combination of using the SD Card and FTP Server. The SD Card is used to assign IP and FTP addresses and the FTP server holds the files needed for the download.  
[IMG 1010 - Downloading System Software Using a Boot File on an SD Card](#)

### Items Required for Installation

For a list of items required click on the link: [IMG 1010-Items Required for Installation](#).

### Minimum Server Specifications

For a detailed explanation on minimum requirements click on link: [Dell Server Configuration Details](#)

### Before You Begin

- Verify you have unpacked, mounted, and connected power to the GCEMS server (Linux Server) and IMG 1010. See the manufacturer's instructions for installation procedures.
- Verify that you have acquired IP Addresses for the IMG 1010 and the GCEMS server.
- Verify that you have the correct MAC address from the IMG 1010. The MAC address is displayed on a label located on the bottom side of IMG 1010 chassis. The label is positioned toward the front panel. The second way of acquiring the MAC address is to power the unit ON. The IMG 1010 will display the MAC address on the LCD display even when software is not loaded.
- Verify the latest IMG 1010 system software file has been acquired. This file is on the software supplied or can be downloaded after logging in to the Dialogic Technical Support Website. <http://www.dialogic.com/support> and selecting Software Downloads BBS. (You must have login access to both the support site and the BBS site in order to be able to download software)
- Verify the latest GCEMS software files (IMG\_10.x.xxx and IMGUserInterface\_10.5.x.xxx) have been acquired. The files are located on the software discs supplied or can be downloaded after logging in to the Dialogic Support Website. <http://www.dialogic.com/support> and selecting Software Downloads

### Linux Services Needed

The services such as DHCP and SNTP can be run on the Linux Server that the GCEMS is loaded on or can be set up to run on a separate machine. For ease of configuration the services should run from the same machine. The services below are installed on the GCEMS server when Linux Red Hat Enterprise is installed. These services can be used to work with the IMG 1010

- **DHCP (Dynamic Host Configuration Protocol)**  
Required to perform BootP function for the IMG 1010. The BootP server and the IMG 1010's must be on the same subnet.
- **FTP Server (Daemon) (vsftpd)**  
Required to download the system software to the IMG 1010.
- **SNTP (Simple Network Time Protocol) Server**  
Required to synchronize the time on the IMG 1010. Must be co-located with the FTP server.
- **NFS (Network File System)**  
Used to download packaged treatments to the IMG 1010.
- **VNC**  
Used for remote monitoring and configuration. Installing the VNC application will be beneficial because Dialogic Technical Support Personnel will use this application to diagnose any issues that may arise.

### Miscellaneous Information

NOTE: If you purchased your server through Dialogic or IMG 1010 supplier the software should already be installed along with all services. If this is the case then setting IP addresses and retrieving the latest version of software is needed and most steps below can be avoided. If software is already installed proceed to [IMG 1010-Downloading System Software](#). If GCEMS server was purchased without software or the customer will provide its own server then follow instructions below.

### Procedure:

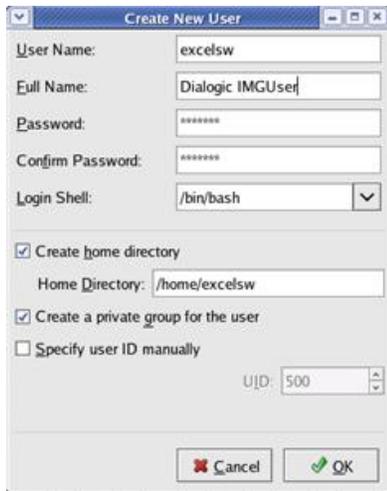
1. If not already configured when Linux Red Hat Enterprise OS was installed then a Linux user must be configured. This user will be given the name **excelsw** and is the user configured to run the GCEMS software etc. See the [Configuring the Linux User \(excelsw\)](#) to configure the excelsw user.
2. Once the Linux user is created the next step is to install the GCEMS software onto the GCEMS server. See [Installing GCEMS Software](#) for information on accomplishing this.
3. After the GCEMS software is installed then the GCEMS software must be configured and the nfs, dhcpd, vsftpd, and ntp services need to be configured and started. See [Configure GCEMS and Start Linux Services](#) link for more information on how to accomplish this.
4. The software is loaded, the GCEMS is configured and the Linux Services are configured and running. The next step is to download the IMG system software from the GCEMS server to the IMG. See [IMG 1010-Downloading IMG System Software](#) or [IMG 1004 Downloading IMG System Software](#)
5. Once software is downloaded and GCEMS software has been installed the GCEMS will need to be started. See [Starting GateControl EMS](#) topic on how to start the GCEMS application.
6. Once GCEMS is started the ClientView will need to be started. See [Starting ClientView](#) on how to start the ClientView application.
7. Once ClientView is started and you can configure the IMG 1010 the next step is to configure the GCEMS so that you can get remote access. See [Configuring Remote Desktop](#) for information on configuring and running RealVNC remote access.

## Configuring the Linux User - (excelsw)

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
 or  
 IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

1. To create a new user named **excelsw** follow instructions below.
  - a. Go to Red Hat Applications Main Menu >> System Settings >> Users and Groups
  - b. Enter root password **excel2** when prompted
  - c. The User Manager screen will appear. Select to **Add User** and a screen like below will appear.
  - d. Enter User Name: *excelsw*
  - e. Enter Password: *excelsw* (Password must be **excelsw** to download software)
  - f. Enter a name in the Full Name Box. Any name can be entered.
  - g. Verify the rest of the boxes are configured as shown in the screen capture below
  - h. Click OK



2. From the User Manager screen, assign the user **excelsw** permissions to use FTP and SSHD.
  - a. Select excelsw user and select properties. The Group Properties screen appears.
  - b. Select Group Users Tab and enable FTP and SSH by checking them.
  - c. Click **OK** to exit to the Users screen.



3. Restart VSFTP service.
  - a. Go to the Main Menu>>System Settings >>Server Settings >> Services.
  - b. Scroll down to the process vsftpd and check the box.
  - c. Right click and select 'Restart' to restart the service.
  - d. Exit back to the desktop, saving changes.

## Installing GCEMS Software

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

Follow procedure below to install the IMG software on to the GCEMS Server. The IMG User Interfaces, ClientView, EventView, and AdminView can be installed either on the same PC or on a separate PC from which the GCEMS software is located. This procedure includes steps for installing them on the same Linux machine as the GCEMS.

To install the IMG User Interfaces on a machine with the Windows® Operating System see following link [Installing ClientView for Windows®](#).

### Before you Begin:

1. Obtain the software builds from the IMG Software CD or get the latest version from the Customer Support BBS.
2. Obtain the license sent to you before the IMG was shipped or use the license that is included on CD shipped with the unit.

### Steps:

1. Open a terminal window and go to /home/excelsw. Create a directory named ftpBuilds. See below

```
$ mkdir ftpBuilds
```

2. Transfer the following files to /home/excelsw/ftpBuilds on the GCEMS server:
  - IMG\_10.x.x.xx.bin (GCEMS)
  - IMGUserInterface\_10.x.x.xx.bin (ClientView, EventView, AdminView)
3. Once the files are transferred they need to become executable. Change the mode of the .bin files to executable by performing a chmod +x to each .bin file. This will give execute abilities to all users.

```
$ chmod +x IMG_10.x.x.xx.bin  
$ chmod +x IMGUserInterface_10.x.x.xx.bin
```

4. Become a **Super User** and install GCEMS software by entering following command:

```
# ./IMG_10.x.x.xx.bin
```

- Follow the instructions as prompted.
- See [GCEMS Installation Script](#) for sample script.

5. As **Super User**, install IMG User Interface (ClientView) software by entering following command:

```
#!/IMGUserInterface_10.x.x.xx.bin
```

- Follow the instructions as prompted.
- See [GCEMS Installation Script](#) for sample script.

6. Once finished an icon for ClientView, AdminView, StopGCEMS, and StartGCEMS is automatically created and placed on the Linux Red Hat desktop.
7. Log out of the Super User mode by entering the **quit** command and become excelsw user again. This will create an entry in the /etc/profile to set the SK\_LIB\_DIR directory.
8. To verify that the SK\_LIB\_DIR path is correct, go to the /etc directory and enter the more command to the profile file. See Command Below.

```
[excelsw@img1010 etc]$ more profile
```

Verify the following depending on the software version being used:

```
SK_LIB_DIR=/opt/cantata/IMG/GateControlEMS and  
LD_LIBRARY_PATH:/opt/cantata/IMG/GateControlEMS/lib (Software 10.3.3 - 10.5.0)
```

or

```
SK_LIB_DIR=/opt/dialogic/IMG/GateControlEMS and  
LD_LIBRARY_PATH:/opt/dialogic/IMG/GateControlEMS/lib (Software 10.5.1 +)
```

9. Use FTP to transfer your IMG license to the license folder. Login as user excelsw and put the license file *<chassis serial number>-<date>.cfg* into one the following directory:

```
/opt/cantata/common/license (Software 10.3.x to 10.5.0)
```

or

```
/opt/dialogic/common/license (Software 10.5.1 +)
```

10. See the link "Folders and Files Created During Installation" This will explain the directory structure and explain what each folder is created for.
11. Once software is installed then the services such as ftp, dhcpd, nfs, and ntpd will need to be configured and started. See Configuring Linux Services for information on how to accomplish this

## GCEMS Installation Script

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Script (Installing IMG GCEMS Software)

```
[root@img2-dtran ftpBuilds]# ./IMG_10.3.3.229.bin
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...
Launching installer...
Preparing CONSOLE Mode Installation...
=====
IMG                               (created with InstallAnywhere by Macrovision)
=====
Introduction
-----
InstallAnywhere will guide you through the installation of Dialogic IMG 1010
Integrated Media & Signaling Gateway 10.3.3.229.
It is strongly recommended that you quit all programs before continuing with
this installation.
Respond to each prompt to proceed to the next step in the installation.  If you
want to change something on a previous step, type 'back'.
You may cancel this installation at any time by typing 'quit'.
PRESS <ENTER> TO CONTINUE:
=====
Pre-Installation Summary
-----
Please Review the Following Before Continuing:
Java VM Installation Folder:
    /jre
Product
    GateControleMS
Install Folder
    /opt/cantata/IMG
PRESS <ENTER> TO CONTINUE:
=====
Installing...
-----
[=====|=====|=====|=====]
[-----|-----|-----|-----]
=====
Installation Complete
-----
Congratulations! IMG 10.3.3.229 has been successfully installed to:
/opt/cantata
*****
*****
To properly run this product, you must
LOG OUT AND BACK IN
to set up your environment.
*****
*****
The following directories have been configured as NFS mountable:
/opt/cantata/common/calltracing
/opt/cantata/common/treatments/datafiles
/opt/cantata/common/routing/sending
* NOTE: The NFS service should be restarted after this installation completes
*****
*****
Press "Enter" to continue.
PRESS <ENTER> TO EXIT THE INSTALLER:
[root@img2-dtran ftpBuilds]#
```

## Installing IMG ClientView Software

```
[excelsw@img2-dtran ftpBuilds]$ su
Password:
[root@img2-dtran ftpBuilds]# ./IMGUserInterface_10.3.3.229.bin
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...
Launching installer...
Preparing CONSOLE Mode Installation...
=====
ClientView                (created with InstallAnywhere by Macrovision)
-----
=====
Introduction
-----
InstallAnywhere will guide you through the installation of Dialogic ClientView
10.3.3.229.
It is strongly recommended that you quit all programs before continuing with
this installation.
Respond to each prompt to proceed to the next step in the installation.  If you
want to change something on a previous step, type 'back'.
You may cancel this installation at any time by typing 'quit'.
PRESS <ENTER> TO CONTINUE:
=====
Pre-Installation Summary
-----
Please Review the Following Before Continuing:
Product Name:
  ClientView
Install Folder:
  /opt/cantata
Link Folder:
  /tmp/install.dir.7368/Do_Not_Install
Product Components:
  ClientView
Disk Space Information (for Installation Target):
  Required: 178,030,774 bytes
  Available: 1,418,543,104 bytes
PRESS <ENTER> TO CONTINUE:
=====
Installing...
-----
[=====|=====|=====|=====]
[-----|-----|-----|-----]
=====
Please Review
-----
Congratulations. ClientView has been successfully installed to:
/opt/cantata
*****
This installation has set some environment variables in /etc/profile. These
variables are not set in this window or any other windows opened prior to
```

## Installation and Setup

installing the User Interfaces. For this installation to work properly, these variables must be set.

These variables include the following:

SK\_PRODUCT - to determine which Cantata product is running

SK\_PRODUCT\_HELP - to determine which Cantata help should be used

PATH - to find the correct version of JAVA

```
*****  
*****
```

To properly run this product, you must

LOG OUT AND BACK IN

to set up your environment.

```
*****  
*****
```

Press "Enter" to quit the installer.

PRESS <ENTER> TO CONTINUE:

[root@img2-dtran ftpBuilds]#

## Folders and Files Created During Installation

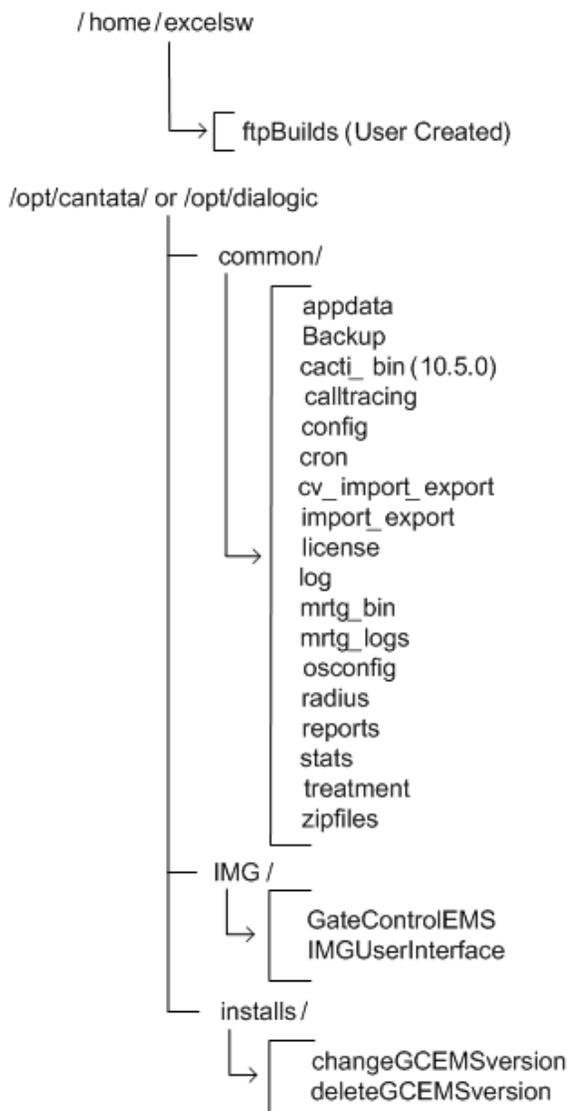
### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Directory Structure

After installation of IMG and IMGUserInterface software onto the GCEMS server, the following folders are created. Below is a diagram on what folders are created and where they are located. Below the diagram is information on some of the notable folders.



## **/opt/cantata (dialogic)/common directory**

### **backup**

During each day, files are generated in the IMG under multiple folders that show the status of the IMG. Files such as log files, stat files, and configuration change files just to name a few are stored in the backup folder. Each day at approximately 12:30 am, the backup folder directory is zipped up and sent to the zipfiles folder. At this point, the files in the backup folder are wiped out and a new set of files will begin to accumulate in this folder.

### **Cacti\_bin (10.5.0 +)**

This folder contains the perl scripts that will retrieve the data from the stats folder. The stats will then get plotted as a graph for the user to gather. Cacti is a graphing application that is similar to MRTG.

### **calltracing**

In Clientview under the physical node, the user can configure the IMG to run a Call Trace of a specific IMG. Once this is configured all call trace logs are stored in this folder. The filename is of the following format

sysLog\_<serial#IMG>\_<Date>\_<Time>.log

### **config**

Holds all configuration files needed to configure the system. The system.cfg and the default.csa files are stored in this folder. Below is a list of configuration files stored in this folder.

- system.cfg --> File used by GCEMS to configure the IMG
- default.csa --> File used by Clientview to configure the IMG
- Imports --> CAS Variants stored in XML format
- Routing --> IMG resource and route tables used for routing
- Variant --> Used to store SS7 Variants
- Working --> Each time the configuration is changed in ClientView a configuration file is saved here.

**NOTE:** During the installation, if a system.cfg file already exists, it will be renamed system\_<DATE\_OF\_INSTALL>.cfg.

### **license**

This folder holds the license files that the IMG accesses during configuration. The license files naming convention is as follows:

<serial#IMG>\_<DateTime>.cfg

### **log**

Contains all current log files that are generated. Support Personnel may request specific log files from this folder when troubleshooting a problem. See Log Files.

### **reports**

Stores report output files.

### **stats**

This folder contains the files that are used by MRTG and Cacti (10.5.0). The files are also used to send call data to display the Channel Group Stats in ClientView. Data such as Temperature, Fan Speed, CPU Usage, Incoming and Outgoing Calls are among just a few of the statistics being logged in this folder. All files are stored as .csv files.

### **treatment**

Contains vocabulary index files, vif.csv, and img\_vocab.dat files which are all used when playing treatments or announcements

### **Radius**

This folder stores the dictionary and dictionary.cantata files. These file are needed when configuring a Radius Server for use in Authentication and Accounting of Calls coming into the IMG. The dictionary.cantata file contains Dialogic-specific VSA's for Accounting and Authentication.

### **mrtg\_bin**

This folder contains the perl scripts that will retrieve the data from the stats folder. The stats will then get plotted as a graph for the user to gather

### **cron**

This folder is used to store different crontasks needed by the user.

## **/opt/cantata (dialogic)/IMG directory**

### **GateControl EMS**

The GateControlEMS in this folder is a link to the version of software being used. This is the current version of IMG software running on the GCEMS server. See Below when user enters ls -la command. This link points to the correct version of software being used since there can be multiple versions and builds of software loaded on the GCEMS server.

**GateControlEMS -->**  
**/opt/cantata/installs/IMG\_10.3.3.195/GateControlEMS**  
**or**

**GateControlEMS -->**  
**/opt/dialogic/installs/IMG\_10.5.1.10/GateControlEMS**

### **IMGUserInterface**

The IMGUserInterface file in this folder is a link to the version of software being used. This is the current version of ClientView running on the GCEMS server. See Below when user enters ls -la command.

**IMGUserInterface -->**  
**/opt/cantata/installs/IMGUserInterface\_10.3.3.195/IMGUserInterface**  
**or**

**IMGUserInterface -->**  
**/opt/dialogic/installs/IMGUserInterface\_10.5.1.10/IMGUserInterface**

### **opt/cantata (dialogic)/installs directory**

This folder contains a subfolder for each version of GCEMS and ClientView software you have downloaded. It also contains the following utilities that allow you to change or delete the running version of GCEMS:

**ChangeGCEMSVersion** --> Running this script allows the user to change the software version being run. For Example: During troubleshooting a particular problem a Support Personnel needs to resort back to a previous build, the support personnel would run this script which makes it very easy to switch between versions of software.

**DeleteGCEMSVersion** --> Running this script will completely delete all aspects of a particular software build. Once this script has been executed, the version of software being removed will no longer be accessible.

## Configure GCEMS and Start Linux Services - IMG 1010

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup

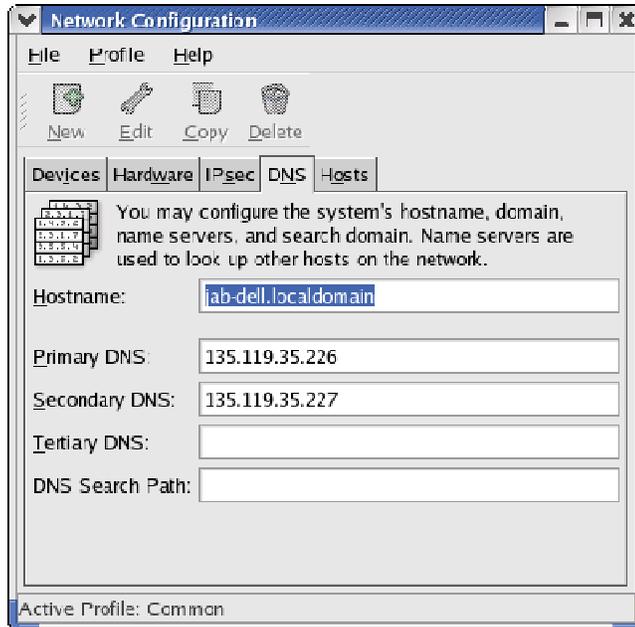
### Before You Begin:

- The IMG 1010 should be unpacked, mounted, and connected power to the GCEMS server. See the manufacturer's instructions for installation procedures.
- The GateControl EMS software must be installed. See [Installing GCEMS Software](#).
- Acquire IP Addresses for the IMG 1010.
- Acquire the MAC address of the IMG from tag on bottom of unit.

### Procedure:

Follow these steps to setup the GCEMS Server.

1. Connect to the GCEMS Server.
2. Login as:  
user: **excelsw**  
password: **excelsw**
3. If a DNS server will be needed in your network you will need to configure a DNS server. To configure DNS server on GCEMS server follow next few steps.
4. In the RedHat GUI select System Settings > Network and the following screen below will appear.
5. Select the **DNS** tab and enter a hostname for the DNS server in the *Hostname* field.
6. Enter Primary and Secondary IP addresses for the primary and secondary DNS servers.
7. Close the network configuration screen.



8. The first step is to create a link for the dhcpd.conf file in /etc. There are two ways to create this link. There is a manual way where the command is entered manually into a terminal and there is a script written to make the process easier. The next few steps below explain both processes.

## Create link using Inimg script

1. Go to one of the following directories depending on the software version being used. See Below.

```
/opt/cantata/common/osconfig (Software 10.3.x to 10.5.0)  
or  
/opt/dialogic/common/osconfig (Software 10.5.1 +)
```

2. Transfer the script Inimg to /home/excelsw/ftpBuilds.
3. From the /home/excelsw/ftpBuilds directory, run the Inimg script

```
./Inimg
```

4. Follow the prompts and enter the version of software to be loaded.
5. Script will create a link between a common name img1010\_id0101.bin and the name of the software you would like to load.
6. Execute an ls -la command to verify the link gets created. See Link below

To confirm the link has been created, type:

```
$ls -la
```

Response:

```
lrwxrwxrwx 1 root root 27 Jun 21 09:27 img1010_id0101.bin ->  
img1010_ver1050123_id0101.bin
```

## Create link using ln -sf command. (Manually)

1. From the /home/excelsw/ftpBuilds directory, enter the command below:

```
ln -sf img1010_ver10305_id0101.bin img1010_id0101.bin
```

To confirm the link has been created, type:

```
ls -la
```

Response:

```
lrwxrwxrwx 1 root root 27 Jun 21 09:27 img1010_id0101.bin ->  
img1010_ver1050123_id0101.bin
```

Verify that the link created points to the correct bin file.

## Create dhcpd.conf file

1. As Super User, create the dhcpd.conf file. Run the dhcpd file creation script located in one of the following directories:

```
/opt/cantata/common/osconfig (Software 10.3.x to 10.5.0)
or
/opt/dialogic/common/osconfig (Software 10.5.1 +)
```

**#!/xldhcp**

NOTE: You can also create the Linux default dhcpd.conf file manually. See [Sample dhcpd.conf File](#).

2. Enter values when prompted as appropriate for your configuration. You will be prompted for the following information: [factory defaults shown in **bold**]

```
Router/Default Gateway IP Address: [192.168.0.1]
Router/Default Gateway Subnet Mask: [255.255.255.0]
Subnet IP Address: (Router/Default Gateway IP Address - 1)
[192.168.0.0]
FTP Server IP Address: (This PC IP Address) [192.168.0.100]
How many IMG systems are being configured? [1]
T1 or E1 IMG (t/e)? [t]
CODEC Profile Selection
  1 = LBR
  2 = LBR + iLBC
  3 = LBR + iLBC + wireless
[NOTE: You must have a license for wireless codecs. You must
also set host flags accordingly (see Vocoder Information)]
Enter CODEC profile? [2]
IMG(CTRL0)[1] IP Address: [192.168.0.102]
IMG(CTRL0)[1] MAC Address: (MAC shown on IMG Label)
[00:20:1C:xx:xx:xx]
IMG(CTRL1)[1] MAC Address: (MAC shown on IMG Label +1)
[00:20:1C:xx:xx:xx+1]
```

**NOTE:** Assign an IP address to the IMG that is on the same subnet as the GCEMS server. Once this IP address is set, the GCEMS will be able to connect to and configure the IMG

3. The following is the response after all prompts are complete:

```
dhcpd.conf created with 1 IMG's configured...
```

4. The file will be created in the /opt/cantata (dialogic)/common/osconfig directory.
5. Move the file to the /etc directory (mv dhcpd.conf /etc)

## Create the ntp.conf file.

1. As a Super User Create the ntp.conf file. Go to

```
/opt/cantata/common/osconfig (Software 10.3.x to 10.5.0)  
or  
/opt/dialogic/common/osconfig (Software 10.5.1 +)
```

2. Run the ntp configuration script:

```
#!/xlnntp
```

3. Enter IP Address and Subnet mask when prompted as appropriate for your configuration.
4. Move the ntp file to the /etc directory. (`mv ntp.conf /etc`). See Sample ntp.conf File.

## Start the services nfs, vsftpd, dhcpd, and ntp

1. As a Super User, start all the services and configure them to restart when GCEMS server is rebooted. Enter the following commands to start the nfs server

```
#!/sbin/service nfs start (Start the nfs service)  
#!/sbin/service nfs status (Verify whether nfs is running or not)  
#!/sbin/chkconfig nfs on (Configure nfs service to restart after a reboot of GCEMS)  
#!/sbin/chkconfig nfs --list (Verify that runlevels 3,4 and 5 are all on.)
```

```
Example: nfs          0:off  1:off  2:on   3:on   4:on   5:on   6:off
```

2. Enter the following commands to start vsftpd service

```
#!/sbin/service vsftpd start (Start the vsftpd service)  
#!/sbin/service vsftpd status (Verify whether vsftpd is running or not)  
#!/sbin/chkconfig vsftpd on (Configure vsftpd service to restart after a reboot of GCEMS)  
#!/sbin/chkconfig vsftpd --list (Verify that runlevels 3,4, and 5 are all on.)
```
3. Enter the following commands to start dhcpd service

```
#!/sbin/service dhcpd start (Start the dhcpd service)  
#!/sbin/service dhcpd status (Verify whether dhcpd is running or not)  
#!/sbin/chkconfig dhcpd on (Configure dhcpd service to restart after a reboot of GCEMS)  
#!/sbin/chkconfig dhcpd --list (Verify that runlevels 3,4, and 5 are all on.)
```
4. Enter the following commands to start ntp service

```
#!/sbin/service ntp start (Start the ntp service)  
#!/sbin/service ntp status (Verify whether ntp is running or not)  
#!/sbin/chkconfig ntp on (Configure ntp service to restart after a reboot of GCEMS)  
#!/sbin/chkconfig ntp --list (Verify that runlevels 3,4, and 5 are all on.)
```
5. Once these services are running and the IMG software build is available the software can be downloaded. See [IMG 1010-Downloading System Software](#)

## CRON Jobs

The IMG 1010 includes a crontab that manages GCEMS processes. This crontab runs automatically when the GCEMS is started (StartGCEMS), and stopped when the GCEMS is stopped (StopGCEMS). This file should not be edited.

There is a user crontab where you can add your own cron jobs for such tasks as file management or CDR management.

The file is located at:

```
/opt/cantata/common/cron/usercron (Software 10.3.x to 10.5.0)
```

or

```
/opt/dialogic/common/cron/usercron (Software 10.5.1 +)
```

This crontab runs automatically when the GCEMS is started, and stopped when the GCEMS is stopped. To stop a service, comment it out or delete it from the file and then start the GCEMS again (StartGCEMS).

## Downloading System Software - IMG 1010

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Procedure:

1. Once all services are running and the IMG 1010 software build is available and installed on GCEMS server, power on the unit by toggling the power switch on the rear Power Module to 1(ON).
2. The fans on the IMG 1010 will now spin at Full Speed while the IMG 1010 diagnostics are running. Watch the LCD screen on the front of the IMG 1010. The following is what will be displayed on the LCD display.

ROM information

MAC: XX:XX:XX:XX:XX:XX id0101

ROM: X.XX.XX

FTP Server Information

MAC: XX:XX:XX:XX:XX:XX id0101

FTP: XX.XX.XX.XX

Load Status

MAC: XX:XX:XX:XX:XX:XX id0101

Load OK/Jumping to Load

The last screen that appears is node information.

Node Name: IMG1010

NodeID: 255

The fans will return to normal operating speed at this time

3. If the above steps do not happen and the IMG 1010 will not load software see the Troubleshooting section below.

### Troubleshooting

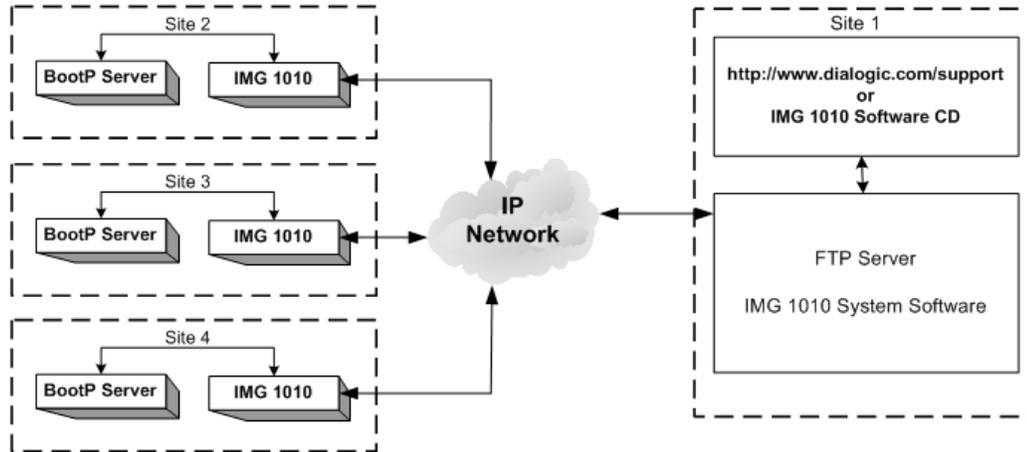
If the software load does not transfer to the IMG, check the following:

- Verify that the Linux firewall is disabled.  
Within Menu Bar go to **System Settings --> Security Level**
- Verify that DHCP and VSFTP services are running.  
Within Menu Bar go to **System Settings --> Server Setting --> Services**
- Verify that the etc/dhcpd.conf file is correct.
- Verify that the switch .bin file is in the correct location.  
(/home/excelsw/ftpBuilds).
- Verify that the link to the switch bin created in /home/excelsw/ftpBuilds is correct.

Example: img1010\_id0101.bin -> img1010\_ver1050xxx\_id0101.bin

## Diagram

The following illustration shows the transfer of IMG 1010 System Software using FTP from an FTP server to each IMG 1010 with a local BootP Server.



Next Task

[Starting GateControl EMS](#)

## Starting GateControl EMS

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
-or-

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Overview:

The procedure below will explain how to start the GCEMS application. At this point, the files IMG\_10.5.x.xxx.bin and IMGUserInterface\_10.5.x.xxx.bin files have been transferred to the GCEMS server and have been installed. There are two ways to start the GCEMS and ClientView processes on the GCEMS server. The first way is by using the icons on the desktop if access to the Linux server is allowed through VNC or some other remote desktop application. The second method is used if remote access to the desktop is not allowed and access to the server is accomplished through something like an SSH telnet session.

### Related Topics

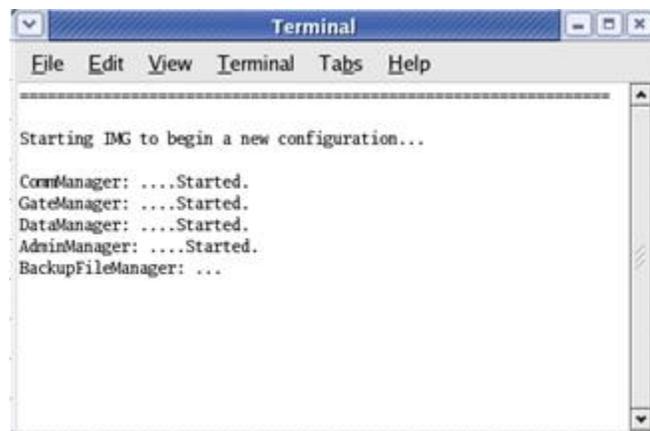
[GCEMS Installation Script](#)

### Using ICONS on Desktop.

1. Login to the GCEMS server as user excelsw.

```
username: excelsw  
password: excelsw
```

Once logged into the server, doubleclick on the StartGCEMS icon on the desktop. A screen like below will appear and all the processes will start automatically. To configure the IMG open ClientView and start a new configuration by either using the Configuration Wizard or load an existing .csa file and allow ClientView to configure the IMG. See [Starting ClientView](#)



```
Terminal  
File Edit View Terminal Tabs Help  
-----  
Starting IMG to begin a new configuration...  
ConnManager: ...Started.  
GateManager: ...Started.  
DataManager: ...Started.  
AdminManager: ...Started.  
BackupFileManager: ...
```

- If however the GCEMS had already been controlling the IMG(s) there will be a system.cfg file located in

/opt/cantata/common/config (Software 10.3.x - 10.5.0)  
 or  
 /opt/dialogic/common/config (Software 10.5.1 +)

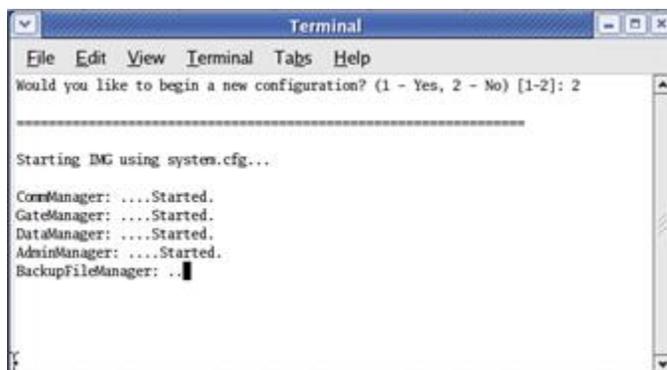
and the start script will ask "**Would you like to begin a new configuration?**" See screen capture below.



- If you select Yes (1), the GCEMS will start its processes without creating a connection to any IMG(s). After starting ClientView, you will have the option to either start a new configuration with the Configuration Wizard or load an existing .csa file and allow ClientView to configure the IMG.

**NOTE: When loading a configuration from the .csa file, the IMG(s) in the configuration will be reset by the GCEMS to apply the configuration fully from startup. This method is executed when the GCEMS software is being upgraded since the IMG software is typically upgraded at the same time.**

- If you select No (2), GCEMS will inform you that it is starting using the system.cfg file. The GCEMS will query the IMG(s) in the configuration and check the status of their configuration tags. If any Tags are cleared the GCEMS will automatically configure the IMG with the settings in the existing system.cfg file. This is the method to use when restarting the GCEMS and you do not want to impact Call Processing on the IMG(s). See Below.

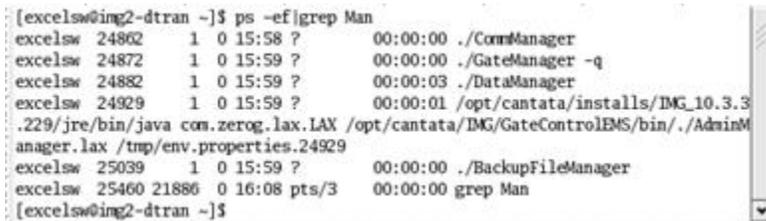


## Installation and Setup

5. GCEMS is now started. Verify that all processes are running by entering the following command:

```
$ ps -ef |grep Man
```

You should see the following output showing all the processes running for GCEMS



```
[excelsw@img2-dtran ~]$ ps -ef|grep Man
excelsw 24862 1 0 15:58 ? 00:00:00 ./ComManager
excelsw 24872 1 0 15:59 ? 00:00:00 ./GateManager -q
excelsw 24882 1 0 15:59 ? 00:00:03 ./DataManager
excelsw 24929 1 0 15:59 ? 00:00:01 /opt/cantata/installs/IMG_10.3.3
.229/jre/bin/java com.zerog.lax.LAX /opt/cantata/IMG/GateControlEMS/bin/.AdminM
anager.lax /tmp/env.properties.24929
excelsw 25039 1 0 15:59 ? 00:00:00 ./BackupFileManager
excelsw 25460 21886 0 16:08 pts/3 00:00:00 grep Man
[excelsw@img2-dtran ~]$
```

## Starting GCEMS through Telnet Session or using Terminal

1. Login to the GCEMS server as user excelsw.

username: **excelsw**

password: **excelsw**

2. To start the GCEMS processes through Telnet or Terminal, go to:

/opt/cantata/IMG/GateControlEMS/bin (Software 10.3.3 to 10.5.0)

or

/opt/dialogic/IMG/GateControlEMS/bin (Software 10.5.1 +)

folder. In each you can find the StartGCEMS file. Execute the following command.

```
$ ./StartGCEMS
```

3. At this point GCEMS will begin the starting process. All the screen captures above apply when starting GCEMS through telnet or terminal program. The screen capture you will see will depend on whether the system has been configured previously or not.
4. Once GCEMS has been started, verify all the processes have started also by executing **ps -ef|grep Man** command shown above.

## Next Task

[Starting ClientView](#)

## Starting ClientView

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or  
IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

**NOTE:** EventView will start automatically when you start ClientView.

To start ClientView and connect to the IMG and perform the following steps:

1. Launch ClientView one of two ways shown below:

### From Linux:

Double Click on the "IMG ClientView" icon on the desktop **-or-** from a terminal window enter `./ClientView` command. This command can be entered from either of the directories shown below, depending on software version being used.

`opt/cantata/IMG/IMGUserInterface/ClientView (Software 10.3.X to 10.5.0)`

or

`opt/dialogic/IMG/IMGUserInterface/ClientView (Software 10.5.1 +)`

`$./ClientView`

### From Windows®

1. Click the ClientView icon on your Desktop **-or-** Click on the ClientView exe file located at either

`C:\Program Files\Cantata\IMGUserInterface\ClientView (Software 10.3.x to 10.5.0)`

or

`C:\Program Files\dialogic\IMGUserInterface\ClientView (Software 10.5.1 +)`

2. When the About ClientView window appears, click **CLOSE**.
3. When the Client Socket window appears, enter the following:

**Username:**admin

**Password:** admin (or new password if you changed)

### Host Name or IP Address:

This is the IP Address of the GCEMS Server to which you are connected. If ClientView is running on the EMS server, leave the default (localhost).

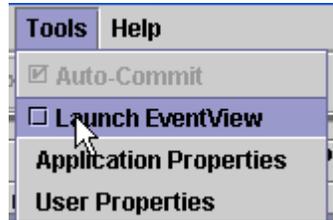
<b>Username:</b>	admin
<b>Password:</b>	*****
<b>Host Name or IP Address:</b>	localhost
<b>Port:</b>	2624

OK Cancel

4. Click OK button. EventView will automatically be started.
5. You are now connected to the GCEMS Server and are ready to use ClientView. To access the On-line Help for detailed configuration information go to the Help Menu within ClientView and select Open Help.

## Restarting EventView

If EventView is closed and you would like to restart it, you can do so from the menu-bar in ClientView select *Tools > Launch EventView*.



## Configuring Remote Desktop

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

Dialogic Technical Support uses VNC to allow its support engineers the ability to work on customer issues. Not being able to access ClientView to see what the customer is seeing can limit the ability of Dialogic Technical Support to provide input or even diagnose issues.

### VNC (Virtual Network Computing) Access:

- VNC is currently part of the Red Hat 3.0, 4.0, and 5.0 ES Operating System.
- VNC allows the user and Dialogic Technical Support personnel to work together as the connection is shared.
- VNC uses known ports so firewalls can be configured to only allow VNC connections from Dialogic's IP address, providing for security but still allowing for remote help. Please these ports open for access.

### Overview of VNC on GCEMS server

To acquire access to the GCEMS server, there are two applications that need to be installed and enabled. The first is the VNC server. This server is installed with the Linux Red Hat installation and once installed needs to be enabled or started when VNC access is warranted. The second application is the VNC viewer. The VNC viewer is a client of the VNC server and allows support personnel to log into the server. The VNC viewer is normally installed on a Windows®-based machine. The viewer allows access to ClientView from a Windows® remote client. For more information on VNC, see <http://www.realvnc.com>

### Linux (VNC server)

If the GCEMS server has been purchased from Dialogic, you can allow remote access to your GateControl EMS Server by performing the following procedure. If you have installed Linux on your own server, then install VNC and perform this procedure.

1. The VNC server is loaded on the GCEMS server but is not started unless the next few steps are accomplished
2. On the GCEMS server go to /home/.vnc
3. Within .vnc folder is a file named xstartup. Edit the file xstartup using vi editing or gedit. Un-comment the following lines

```
#unset SESSION_MANAGER
#exec /etc/X11/xinit/xinitrc
```

## Installation and Setup

4. To start VNC server, enter the following command below. If this is the first time you are starting VNC you will be asked for a password. Enter **excelsw** for password. Below is the command to start VNC server

```
$ vncserver :1
```

5. To verify the server is running enter one of the following commands below.

```
$ /sbin/service vncserver status  
or  
$ ps -ef|grep vnc
```

6. Once VNC server is started you can log into VNC server through a VNC viewer. Follow steps below to load the VNC viewer on a PC running Windows®-based Operating system.

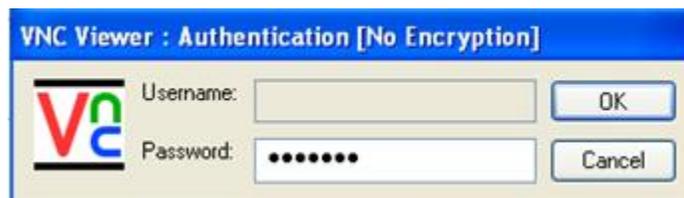
## Loading/Running VNC on PC running Windows® Operating System

The VNC Client is installed on a separate PC. Below is how to install on a PC running Windows® operating system

1. Download a copy of the VNC client viewer to your PC from the site:  
<http://www.realvnc.com/download.html>
2. Run VNC Viewer by double clicking on the VNC icon.
3. In the window that appears, enter the IP Address of GCEMS server followed by :1



4. Select OK and if the VNC Viewer connects then a password will be prompted. Enter the password **excelsw**.



5. At this point the VNC Viewer will connect to the server and a view of the GCEMS desktop will appear. You can now work in the Linux Environment as an excelsw user

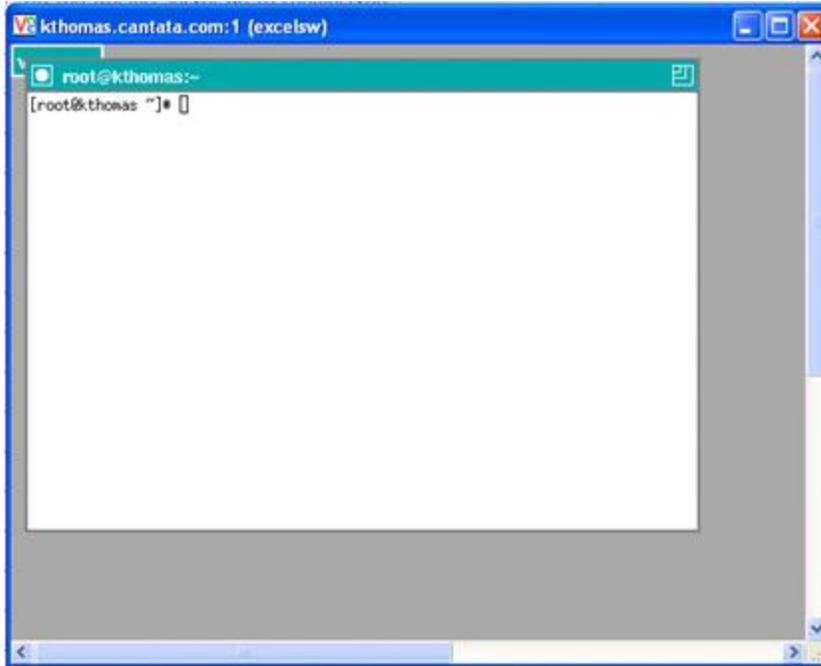
## Troubleshooting:

Use this troubleshooting section to try and diagnose any problems that could arise

### Scenario 1:

#### **PROBLEM:**

1. When Connecting to VNC server through VNC Viewer the following screen appears:



#### **SOLUTION:**

This is an indication that the VNC Server was initially started as a root or super user and you are trying to connect using the excelsw password. To fix the problem execute the following steps:

- A. Login to the GCEMS server as excelsw user.
- B. Become a Super User by entering the **su** command and entering the root password **excel2**
- C. Verify the vncserver is running as root by entering the **ps -ef|grep vnc** command. This will show the vncserver running as root in the response.
- D. If the vncserver is running as root you will need to kill the process. Enter the command **vncserver -kill :1** to kill the vncserver process as root user
- E. Logout of Super User mode by entering the **exit** command
- F. As excelsw user start the vncserver process by entering the **vncserver :1** command
- G. Verify the vncserver is now running as excelsw user by entering the **ps -ef|grep vnc** command.
- H. Retry logging into vncserver through the VNC Viewer

## **Scenario 2:**

### **PROBLEM:**

2. Cannot logon to VNC server through VNC Viewer. Get **unable to connect to host** error message

### **SOLUTION:1**

- A. Is vncserver :1 running?
  - i. Logon to GCEMS and as an excelsw user enter the following command and verify vncserver is running

```
$ps -ef|grep vnc
```

- ii. If vncserver is not running, enter following command to start vncserver

```
$vncserver :1
```

### **SOLUTION:2**

- A. Is vncserver running as :1 or something other than :1
  - i. Logon to GCEMS and as an excelsw user enter the following command and verify vncserver :1 is running

```
$ps -ef|grep vnc
```

- ii. If vncserver is running on something other than :1 then kill the other process and start :1 process

```
$vncserver -kill :2  
$vncserver :1
```

## **Scenario 3:**

### **PROBLEM:**

3. On a reboot of GCEMS server the vncserver process does not restart automatically.

### **SOLUTION:**

- A. For security reasons VNCserver does not restart on a reboot of the GCEMS server. However if your network is secure you can follow the next few steps and configure vncserver to restart after a reboot of GCEMS server.
- B. Open a terminal on GCEMS and go to /etc/sysconfig
- C. Using a text editor, edit the vncservers file as shown below:

- i. Uncomment the line VNCSERVERS="1:myusername"
  - ii. Change the line in previous step to VNCSERVERS="1:excelsw"
  - iii. Save and close
  - iv. Enter the following command to edit the runlevel

```
$/sbin/chkconfig vncserver on
```

- v. Verify that runlevels 3 4 and 5 are all on by entering the following command

```
$/sbin/chkconfig vncserver --list
```

```
vncserver 0:off 1:off 2:on 3:on 4:on 5:on 6:off
```

- vi. vncserver will now start on a reboot of GCEMS

## Miscellaneous Information

### Shared Connection

With RealVNC, two people can connect to the same GCEMS and both can have monitor/configure access. This gives the support personnel the ability to configure a system while the customer watches on their PC. To be able to accomplish this **both** users must enable this option on the VNC Viewer application. To allow another person to connect and view the same Xwindow, you must enable the Shared Connection option. See Below.

1. Open VNC Viewer application
2. Select the **Options** button
3. Select the **Misc** tab.
4. Enable the **Shared Connection (do not disconnect other viewers)** option.
5. Save the new configuration so when the VNC Viewer is opened it will always opewith the Shared connection enabled

### Configuring Display:

Starting the VNC Server without the geometry setting will default the window size to 1024x768. Use the goemetry command (-geometry) to set the size of the VNC window. The setting will need to be the same size or smaller than the resolution of the Windows®-based PC on which are running the client. Below are some example settings.

```
#####
# Geometry settings
# Windows®: 1024x768 Linux: 1000x710
# Windows®: 1280x1024 Linux: 1260x960
#####
```

**Example:** vncserver -geometry 1260x960 :1

## Helpful Commands:

The following commands can be accomplished as an excelsw user

Command:	Description:
\$ vncserver :1	Start vncserver as :1
\$ vncserver -kill :1	Kill the vncserver instance :1
\$ ps -ef grep vnc	Search for all processes running with "vnc" in them
\$ /sbin/service vncserver status	Check to see whether vncserver is running
\$ /sbin/chkconfig vncserver --list	Display the runlevel of vncserver

The following commands can be accomplished as a root user

Command:	Description:
# /sbin/service vncserver restart	Restarts vnc service through terminal
# /sbin/service vncserver stop	Stops vnc service through terminal
# /sbin/service vncserver start	Starts vnc service through terminal
# /sbin/service vncserver restart	Stops and then restarts vncserver
# /sbin/service vncserver status	Check to see whether vncserver is running
# /sbin/chkconfig vncserver on	Set runlevel on vncserver
# /sbin/chkconfig vncserver --list	Display the runlevel of vncserver

NOTE: vncserver is located at /etc/init.d/vncserver

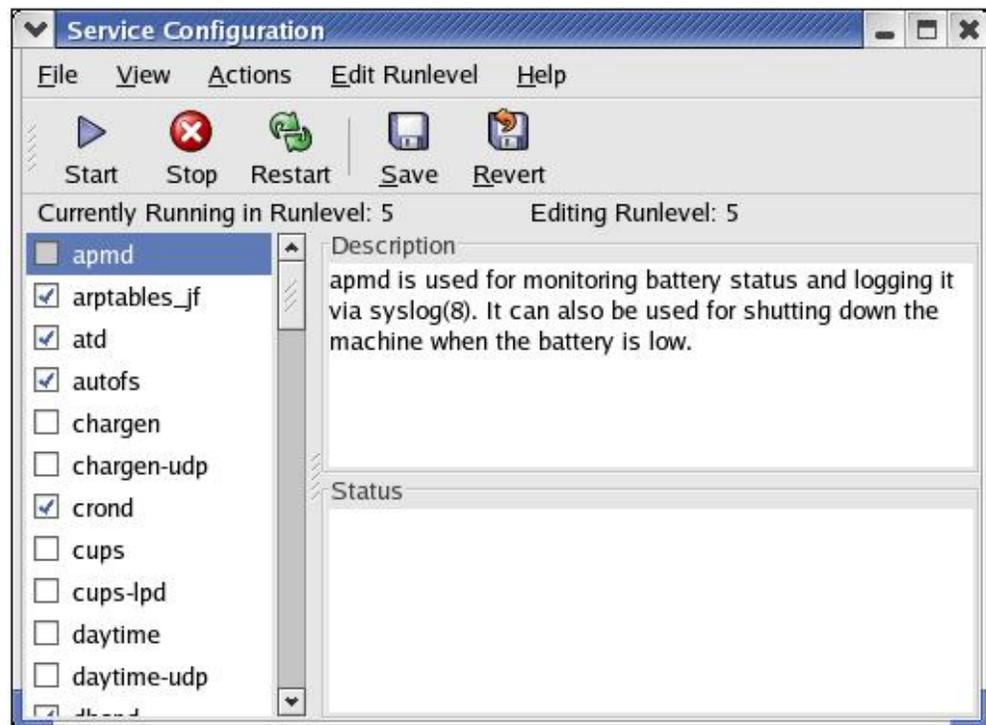
## Selecting/De-selecting Linux Services

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

1. A service such as dhcpd can be started or stopped using the Service Configuration screen. To stop or start a service, login as Super User.
2. Go to Main Menu >> Server Settings >> Services
3. Check or un-check the desired services for each run level (specify run levels 3, 4, and 5).
4. Start, stop, or re-start the desired services.
5. Store the settings by pressing the **SAVE** button.
6. Logout as Super User and Login as user excelsw.



## Installing ClientView for Windows®

### **Topic Location:**

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### **Note on Re-installation**

If you are re-installing ClientView, make sure that you close ClientView and stop any IMG processes that are running.

### **Steps**

To install ClientView on a PC running Windows®, perform the following steps.

1. Transfer the IMG User Interface software file to the PC.
2. Go to the location where you stored the file and Double Click the IMGUserInterface.exe file. This will launch the Install-Anywhere installation wizard.
3. Accept the defaults as each screen appears.

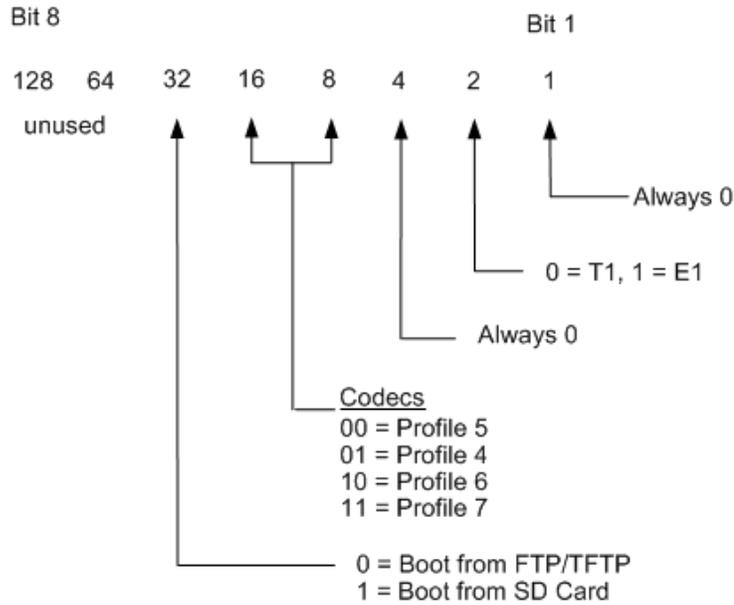
**NOTE:** EventView and AdminView are automatically installed with ClientView.

## Setting Host Flags

**Topic Location:**

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
 or  
 IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

The following diagram shows the Host flag settings in the *dhcpd.conf* file located in /etc and the *bootup.cfg* located on the SD card.



Codec	Profile 4	Profile 5	Profile 6	Profile 7
G.711 alaw	Not Supported	Yes	Yes	Yes
G.711 ulaw	Not Supported	Yes	Yes	Yes
G.723 5.3 kbps	Not Supported	Yes	Yes	Yes
G.723 6.3 kbps	Not Supported	Yes	Yes	Yes
G.729	Not Supported	Yes	Yes	Yes
G.729E	Not Supported	Yes	Yes	Yes
iLBC 20 ms	Not Supported	Not Supported	Yes	Yes
iLBC 30 ms	Not Supported	Not Supported	Yes	Yes
AMR	Not Supported	Not Supported	Not Supported	Yes
EVRC	Not Supported	Not Supported	Not Supported	Yes
GSM - FR Static	Not Supported	Not Supported	Yes	Yes

## Installation and Setup

GSM - FR Dynamic	Not Supported	Not Supported	Yes	Yes
G.726-32/G.721 Static	Not Supported	Yes	Yes	Yes
G.726-32/G.721 Dynamic	Not Supported	Yes	Yes	Yes

### **Calculating the BootFlag:**

The boot flag is calculated by adding values above based on desired system attributes.

#### TDM

If system is used for T1 only --> Add 0

If system is used for E1 only --> Add 2

#### Boot

If booting from an FTP Server --> Add 0

If booting from an SD Card --> Add 32

#### Example: Booting from SD Card + E1 system

Booting from SDCard = 32

Configuring E1 System = 2

Using Profile 6 = 16

BootFlag for this system is  $32 + 2 + 16 = 50$

For a complete List of codecs that are currently supported and a short description of each codec, click on the Supported Codecs link

## Sample dhcpd.conf File - IMG 1010

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup

The following is a sample dhcpd.conf file. If you do not have access to the xldhcp script, you must modify this file manually. Modify the lines in **bold** according to your particular network settings.

```
#####
# File: dhcpd.conf
# Generated by: xldhcp Revision: 1.2
# Dialogic Corporation, Inc. 05/16/06_16:21:23
# Cantata Support @ 508-862-3366 techsupport@Cantata.com
#####
ddns-update-style ad-hoc;
# which logfile group... log to /var/log/messages
LogFile = messages;
allow bootp;
# declare global vender options
option Host_1010_Flag code 134 = signed integer 32;
# 0 = FTP, T1, AB Polls disabled, CODEC Profile 5 LBR
# 2 = FTP, E1, AB Polls disabled, CODEC Profile 5 LBR
# 16 = FTP, T1, AB Polls disabled, CODEC Profile 6 LBR+iLBC
# 24 = FTP, T1, AB Polls disabled, CODEC Profile 7 LBR+iLBC+wireless
# Configured Host_1010_Flag = 0
# option routers is the same as the default gateway
option routers 192.168.1.1;
option subnet-mask 255.255.255.224;
# subnet IP address usually default gateway address minus 1
subnet 192.168.1.0 netmask 255.255.255.224
{
  host IMG_CPU1_0
  {
    hardware ethernet 00:20:1c:00:00:00;
    fixed-address 192.168.1.5;
    # ftp server name (IP Address of the LINUX PC running FTP)
    next-server 192.168.1.100;
    # IMG bin file (software load)
    filename "ftpBuilds/img1010_id0101.bin";
    option Host_1010_Flag 0;
  }
  host IMG_CPU1_1
  {
    hardware ethernet 00:20:1c:00:00:01;
    fixed-address 192.168.1.5;
    # ftp server name (IP Address of the LINUX PC running FTP)
    next-server 192.168.1.100;
    # IMG bin file (software load)
    filename "ftpBuilds/img1010_id0101.bin";
    option Host_1010_Flag 0;
  }
}
```

## Assigning ClientView Users

**Topic Location:** Administration > User Management

Unless you specifically assign user privileges, anyone can access the GCEMS with full Administrative Privileges using:

UserName: *admin*

Password: *admin*

### Procedure

Passwords and roles can be assigned to individual users who may have access to the EMS. Below is procedure on how to do this.

1. Login to AdminView.
  - a. Either double click on the AdminView icon on Linux Server desktop or if using a terminal go to one of the following directories.

opt/cantata/IMG/GateControlEMS/bin (Software 10.3.3 to 10.5.0)

or

opt/dialogic/IMG/GateControlEMS/bin (Software 10.5.1 +)

- b. Execute the following command to start AdminView from Terminal Window

```
$ ./AdminView
```

- c. Login as an Administrator by using the UserID and Password shown below.

User ID: **admin**

Password: **admin**

2. To limit access to Admin functions, change the Admin Password. See below.
  - a. Type **chpwd** and press <ENTER> key.
  - b. Enter the Administrator User ID = *admin* Hit <ENTER> key
  - c. Enter a new password and press <ENTER> key.
  - d. Re-enter the new password and press <ENTER> key.
3. To see a list of commands, enter "help" into the AdminView terminal.
4. To Add a User and assign roles:
  - a. Type *adusr* and press <ENTER> key.
  - b. Enter User ID and press <ENTER> key.
  - c. Enter a password for the user and press <ENTER> key.
  - d. Confirm the password and press <ENTER> key.
  - e. Enter values for the roles to assign to the user.
    - 1 - Administrator
    - 2 - Basic
    - 3 - Configuration
    - 4 - Provisioning
    - 5 - Monitoring
  - f. Repeat steps a-e for each user.
  - g. Quit

### Help

For a list of commands, type `help`

### More Information

For more detailed information on Administering User Privileges, see Administering User Privileges in the On-line Help.

## Changing or Deleting GCEMS and User Interface

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Changing GCEMS and User Interface Version

To change to a different version of GCEMS and ClientView/EventView, use the script tool *changeGCEMSVersion* located in one of the following directories below depending on software version:

`/opt/cantata/installs` (Software 10.3.3 to 10.5.0)  
or  
`/opt/dialogic/installs` (Software 10.5.1 +)

The version of software must have already been previously installed for this script to work. The script changes the links to the executables in the `/opt/cantata/IMG` directory or `/opt/dialogic/IMG` (Software 10.5.1+).

### Deleting GCEMS Version

To change to a different version of GCEMS, ClientView and EventView, use the script tool *deleteGCEMSVersion* located in:

`/opt/cantata/installs` (Software 10.3.3 to 10.5.0)  
or  
`/opt/dialogic/installs` (Software 10.5.1 +)

The version of software must have already been previously installed for this script to work. This script when run will delete the specified version of GCEMS and ClientView/EventView that is stored in `/opt/cantata/installs` directory or `/opt/dialogic/IMG` (Software 10.5.1+).

## IP Security for IMG and GCEMS

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

To protect against denial of service attacks, the GCEMS (Linux server) and IMG Control IP can be placed behind a firewall for security. Should remote access to the GCEMS server be needed, a NAT, VPN, or other secure solution can be used for access to the server from the public internet.

**Following is a list of ports and protocols used by the IMG and the GCEMS server.**

- **The Ports in red would need to be opened in the firewall based on the recommendation above for remote access.**

### Connections between IMG and GCEMS

Port #	Description	Purpose
TCP: 20 & 21	FTP	<ul style="list-style-type: none"> <li>• Download IMG binary from GCEMS to IMG</li> <li>• Upload of software faults from IMG to GCEMS</li> </ul>
TCP: 23	Telnet	IMG debug access
UDP: 111	PortMap	Portmap is used to request a mount port. Usually for NFS or NIS. The port request is sent from the IMG to the GCEMS server. See <a href="#">PortMap Flow</a> .
UDP: 2049	NFS	<ul style="list-style-type: none"> <li>• Call tracing</li> <li>• Downloading Call treatments</li> <li>• Downloading routing &amp; translation tables</li> </ul>
UDP: 1812	Radius Authentication	Call authentication
UDP: 1813	Radius Accounting	Record Call Detail Records
TCP: 162	SNMP Network	Monitoring
TCP: 12610	GCEMS control	IMG Configuration and Provisioning
UDP: 123	NTP Network	Time Protocol
TCP: 1099	ClientView	ClientView Application (Only required when ClientView is running on a different machine from GCEMS)

### Connections to the GCEMS server

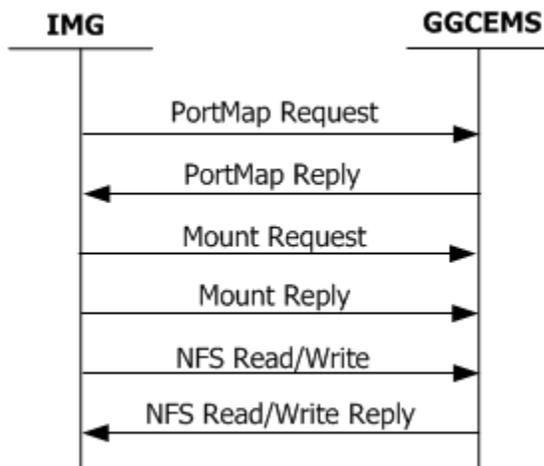
Port #	Description	Purpose	Connection from
<b>TCP: 22</b>	<b>SSH</b>	Remote access to GCEMS server	<ul style="list-style-type: none"> <li>Local support personnel</li> <li><b>Diallogic technical support</b></li> </ul>
<b>TCP: 5901</b>	<b>VNC</b>	Remote access to GCEMS server	<ul style="list-style-type: none"> <li>Local support personnel</li> <li><b>Diallogic technical support</b></li> </ul>
TCP: 80	HTTP	MRTG monitoring	Local support personnel
TCP: 12610	IMG Management	Connection to IMG	IMG
TCP: 2623	Remote ClientView	Connection from Remote Clientview to GCEMS	Remote ClientView
TCP: 2624	ClientView	GUI for Configuration & Provisioning	Local support personel GCEMS server

### Connections between IMG's if running redundant SS7 or SS7 with remote IMG's

Port #	Description	Purpose	Connection from
UDP: 34867	SS7 Management	Internal SS7 communication between IMGs	IMG

### PortMap Request

- PortMap uses Port 111 and is used to request a mount port. Request is sent from IMG
- Mount uses the port returned in the PortMap response
- NFS uses port 2049





## IMG 1010 - SD Card

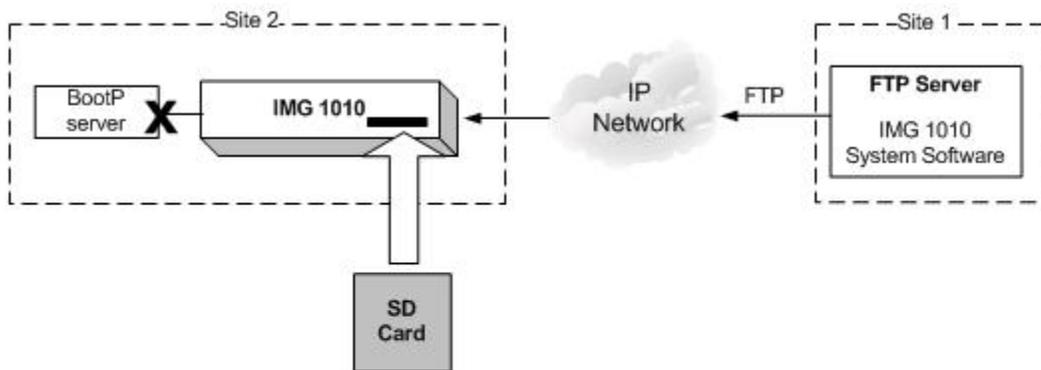
### Downloading System Software Using Boot File on an SD Card - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-SD Card

A BootP server is used to configure the following:

- IMG CTRL IP address
- subnet mask
- gateway address
- FTP server address
- FTP file name of the IMG system software

If a BootP server is not available but a remote FTP Server is available, the SD card can be used to configure the boot parameters so the IMG can retrieve the system software from the remote FTP Server. See Diagram Below.



**Bootup.cfg**  
Host Flag = Retrieve IMG 1010 System Software from FTP server  
Server Address = Your FTP Server address

## Installation and Setup

### STEPS:

1. Insert the SD Card into an SD Writer connected to a PC.
2. On the SD Card is a file named bootup.cfg. Open this file.
3. Below is what the SD Card bootup.cfg information should look like.

```
#####  
#####  
#####  
#####  
# INSTRUCTIONS  
# 1. Edit values as required, as described below.  
# Change IP Address, Subnet Mask, and Gateway IP Address to the actual #values for the  
# IMG.  
# If you change the version of IMG System Software on the FTP Server #or the SD card,  
# make sure you change the System Software Filename #value.  
# Make sure Host Flag is set appropriately for your configuration and #Boot method  
#  
# Calculate boot flag by adding values based on desired system attributes  
# For a T1 system: add 0  
# For an E1 system: add 2  
#  
# To boot from a FTP Server: add 0  
# To boot from a SD Card: add 32  
#  
# For LBR codecs (512 ch/mod): add 0  
# For LBR + ILBC codecs (336 ch/mod): add 16  
# For LBR + ILBC + Wireless codecs (336 ch/mod): add 24  
#  
# An example host flag for a T1 system booting from the SD card with LBR + iLBC codecs  
# would = 48 (0+32+16)  
# Change Server Address to the actual address of the FTP server.  
# The Server Name is not used at this time.  
# 2. After editing this file: save file, remove SD card, insert SD card #in the IMG, power-up  
# the IMG.  
# _____  
# IMG bootup configuration file  
# IP Address  
yiaddr=192.168.3.103  
# Subnet Mask  
subnet mask=255.255.255.0  
# Gateway Address  
giaddr=192.168.3.10  
# System Software Filename  
file=/excelsw/ftpBuilds  
# Host Flag  
host flag=0  
# Server Address for File transfer and SNTP operation.  
siaddr=192.168.1.100  
# Server Name (Optional, not currently used)  
sname=factorydefault  
#####  
#####  
#####  
#####
```

4. Any line beginning with the # symbol is a comment and is not processed by the IMG. Below is the information the user will edit for use in their network
- **yiaddr** --> IP Address of the IMG being loaded
  - **subnetmask** --> Subnet mask of the IMG being loaded
  - **giaddr** --> IP Address of the Gateway connected to the IMG
  - **file** --> If using the SD card to supply boot information but loading the software from the FTP Server; the System Software Filename on the bootup.cfg file should be given a path to the IMG System Software file located on the ftp server. The default path is /excelsw/ftpBuilds or ftpBuilds/ as the IMG 1010 logs into the FTP server using the excelsw account.
  - **Host flag** --> The Host Flag informs the IMG 1010 of configuration details such as T1 or E1, Boot from SD card or Boot from FTP Server, and a few other configuration details. See Setting Host Flags.
  - **siaddr** --> IP Address of FTP server which provides the IMG 1010 System Software and NTP Server information
  - **sname** --> Optional, not currently used. Do not edit this.

5. Change the Host Flag to "Retrieve IMG Build from SD Card".

Host Flag Values

32 = Boot from SD Card, T1 system

34 = Boot from SD Card, E1 system

Example: The following is a T1 system booting from SD Card. Refer to the file Setting Host Flags to follow the example

Boot From SD card = 32

T1 system = add +00

Host Flag Value = 32

The Host Flag for a T1 system booting from SD Card = 32

6. Edit the bootup.cfg file to reflect the new Host Flag value
7. Edit the System Software Filename in the bootup.cfg file to reflect the new software file being loaded. (Ex: file=/excelsw/ftpBuilds)
8. Edit the rest of the bootup.cfg file to reflect your network values.
9. Save the bootup.cfg file.
10. Remove the SD card from the SD Writer.
11. Insert the SD card into the SD slot on the Front Panel of the IMG.
12. Power-up the IMG. The fans on the IMG will run at full speed while diagnostics are running and software is being loaded
13. The LCD screen will show the following:

While software is loading to the IMG 1010 the LCD screen will display the following

**MAC: 00:20:1C:04:03:11 ID:0101**

**SDC Loading**

After the software has loaded to the IMG 1010 the LCD screen will display the following

**MAC: 00:20:1C:04:03:11 ID:0101**

**Load OK/Jumping to Load**

After software is done loading, the LCD screen will display the node info and the fans will slow to normal operation

**Node Name: IMG1010**

**Node ID: 255**

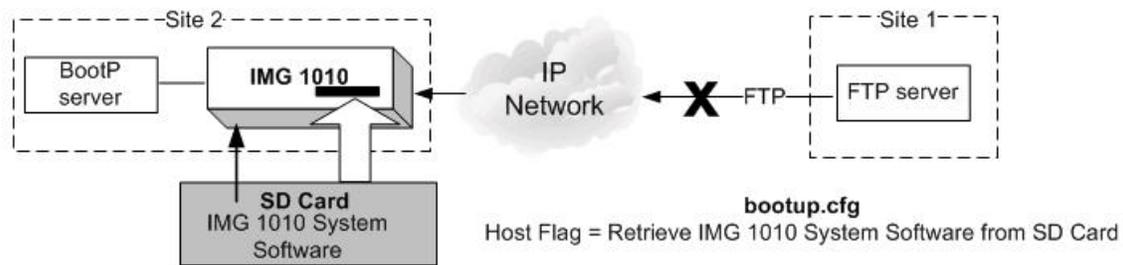
14. The loading of software and configuring of network information is now complete. The IMG 1010 is now ready to be configured.

## Downloading IMG System Software From an SD Card - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-SD Card

### Overview of SD Card

If the IMG 1010 does not have access to an FTP server, then the IMG 1010 System Software and IP information can be loaded through the use of an SD Card. The SD Card is a small memory card much like the memory cards used in digital cameras and other devices. The IMG 1010 has an SD card slot positioned on the right hand side of the front panel just below the USB port. The SD card holds the `bootup.cfg` file and the IMG 1010 System Software file. The procedure below will explain how to load the IMG 1010 System Software and IP addresses using just the SD Card.



### Steps

1. Insert the SD Card into an SD Writer or use [IMG 1010-SD Card Remote Provisioning](#) Feature.
2. Load the System Software File onto the SD Card.
3. On the SD Card provided with the IMG 1010 is a file named `bootup.cfg`.

4. Below is what the SD Card *bootup.cfg* information will look like.

```
#####
#####
# INSTRUCTIONS
# 1. Edit values as required, as described below.
# Change IP Address, Subnet Mask, and Gateway IP Address to the actual #values for the
IMG.
# If you change the version of IMG System Software on the FTP Server #or the SD card,
make sure you change the System Software Filename #value.
# Make sure Host Flag is set appropriately for your configuration and #Boot method
#
# Calculate boot flag by adding values based on desired system attributes
# For a T1 system: add 0
# For an E1 system: add 2
#
# To boot from a FTP Server: add 0
# To boot from a SD Card: add 32
#
# For LBR codecs (512 ch/mod): add 0
# For LBR + ILBC codecs (336 ch/mod): add 16
# For LBR + ILBC + Wireless codecs (336 ch/mod): add 24
#
# An example host flag for a T1 system booting from the SD card with LBR + iLBC codecs
would = 48 (0+32+16)
# Change Server Address to the actual address of the FTP server.
# The Server Name is not used at this time.
# 2. After editing this file: save file, remove SD card, insert SD card #in the IMG, power-up
the IMG.
# _____
# IMG bootup configuration file
# IP Address
yiaddr=192.168.3.103
# Subnet Mask
subnet mask=255.255.255.0
# Gateway Address
giaddr=192.168.3.10
# System Software Filename
file=img1010_ver1033123_id0101.bin
# Host Flag
host flag=0
# Server Address for File transfer and SNTP operation.
siaddr=192.168.1.100
# Server Name (Optional, not currently used)
sname=factorydefault
#####
#####
```

5. Any line beginning with the # symbol is a comment and is not processed by the IMG 1010. Below is the information the user will edit for use in their network

## Installation and Setup

- **yiaddr** --> IP Address of the IMG 1010 being loaded
  - **subnetmask** --> Subnet mask of the IMG 1010 being loaded
  - **giaddr** --> IP Address of the Gateway connected to the IMG 1010
  - **file** --> System Software Filename. If loading software from SD Card then this is the filename of the software being loaded. Load this file onto the SD Card.
  - **Host flag** --> The Host Flag informs the IMG 1010 of configuration details such as T1 or E1, Boot from SD card or Boot from FTP Server, and a few other configuration details. See Setting Host Flags.
  - **siaddr** --> IP Address of FTP server. Also used as an NTP server.
  - **sname** --> Optional, not currently used. Do not edit or problems may occur
6. Change the Host Flag to "Retrieve IMG Build from SD Card".
    - Host Flag Values
    - 32 = Boot from SD Card, T1 system
    - 34 = Boot from SD Card, E1 system

Example: The following is a T1 system booting from SD Card. Refer to the file Setting Host Flags to follow the example

```
Boot From SD card = 32
T1 system = add   +00
Host Flag Value = 32
```

The Host Flag for a T1 system booting from SD Card = 32

7. Edit the `bootup.cfg` file to reflect the new Host Flag value
8. Edit the System Software Filename in the `bootup.cfg` file to reflect the new software file being loaded. (Ex: `img1010_ver1033123_0101.bin`)
9. Edit the rest of the `bootup.cfg` file to reflect your network values.
10. Save the `bootup.cfg` file.
11. Remove the SD card from the SD Writer.
12. Insert the SD card into the SD slot on the Front Panel of the IMG.
13. Power-up the IMG 1010. The fans on the IMG 1010 will run at full speed while diagnostics are running and software is being loaded
14. The LCD screen will show the following:

```
While software is loading to IMG 1010 the LCD screen will display the following
MAC: 00:20:1C:04:03:11 ID:0101
SDC Loading
```

```
After the software has loaded to IMG 1010 the LCD screen will display the following
MAC: 00:20:1C:04:03:11 ID:0101
Load OK/Jumping to Load
```

```
After software is done loading, the LCD screen will display the node info and the fans
will slow to normal operation
Node Name: IMG1010
Node ID: 255
```

15. The loading of software and configuring of network information is now complete. The IMG 1010 is now ready to be configured.

### Next Task

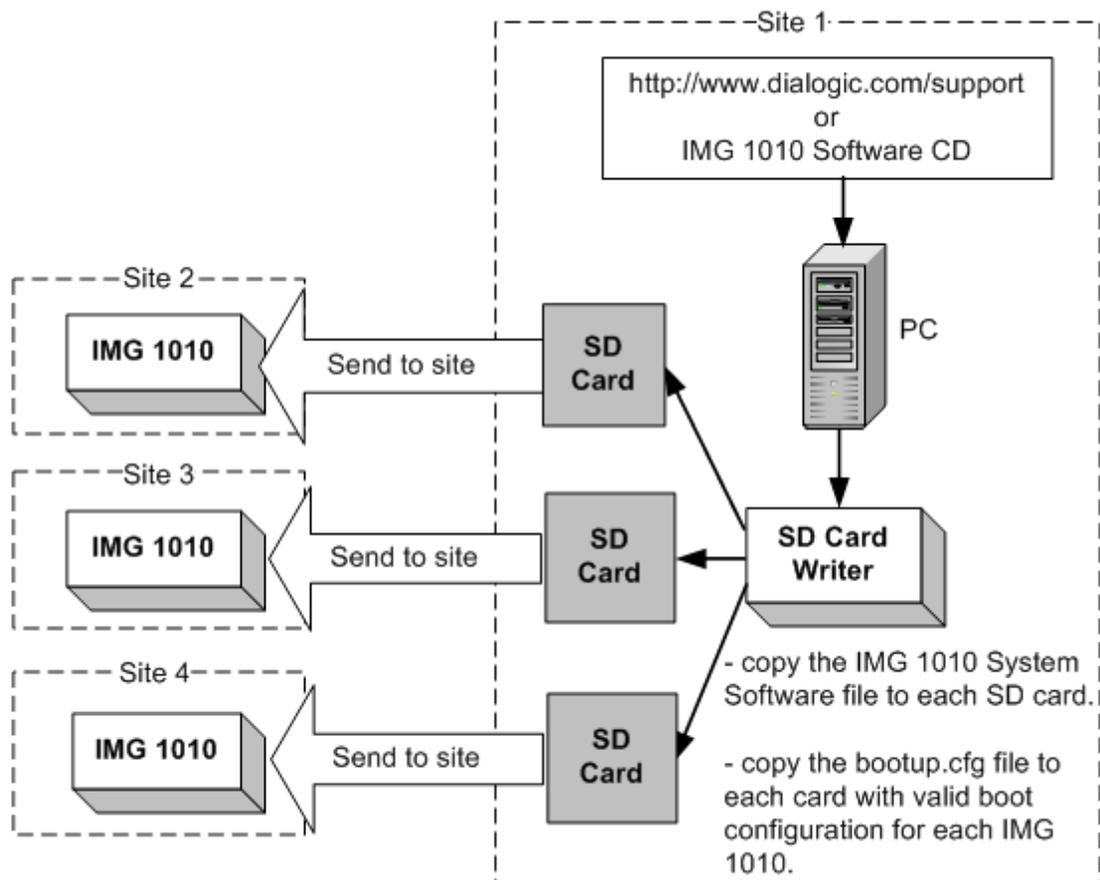
[Starting GateControl EMS](#)

## Distributing System Software Using an SD Card - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-SD Card

If you have remote IMG 1010's that cannot obtain a System Software upgrade using FTP or BootP, you can transfer the file to multiple SD cards and distribute the SD cards to each remote site. The bootup.cfg file on each SD Card can be edited using either an SD card reader or if working with software 10.5.0 + the Remote SD Card provisioning feature can be used.

For more information on remote provisioning of SD Card, see [IMG1010-SD Card Remote SD Card Provisioning](#).



## Default bootup.cfg Configuration File - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-SD Card

### # INSTRUCTIONS

#1. Edit values as required, as described below.

# Change **IP Address**, **Subnet Mask**, and **Gateway IP Address** to the actual values for the IMG 1010.

# If you change the version of System Software on the FTP Server or the SD card,

# make sure you change the **System Software Filename** value.

# Make sure **Host Flag** is set appropriately for your configuration and Boot method

# Calculate **Host Flag** by adding values based on desired system attributes

# For a T1 system: add 0

# For an E1 system: add 2

#

# To boot from a FTP Server: add 0

# To boot from a SD Card: add 32

#

# For LBR codecs (512 ch/mod): add 0

# For LBR + ILBC codecs (336 ch/mod): add 16

# For LBR + ILBC + Wireless codecs (336 ch/mod): add 24

#

# An example host flag for a T1 system booting from the SD card with LBR + iLBC codecs would = 48 (0+32+16)

# Change **Server Address** to the actual address of the FTP server.

# The **Server Name** is not used at this time.

#2. After editing this file: save file, remove SD card, insert SD card in the IMG 1010, power-up the IMG 1010.

---

# 1010 bootup configuration file

# IP Address

yiaddr=192.168.0.101

# Subnet Mask

subnet mask=255.255.255.0

# Gateway Address

giaddr=192.168.0.1

# System Software Filename

file=img1010\_id0101.bin

# Host Flag

host flag=0x20

# Server Address for File transfer and SNTP operation.

siaddr=192.168.0.100

# Server Name (Optional, not currently used)

sname=factorydefault

## SD Card Remote Provisioning - IMG 1010

**Topic Location:** IMG 1010-Installation and Setup Guide > IMG 1010-SD Card

### Overview

This feature provides a means for installing new versions of system software to IMG 1010 located at remote sites with no BOOTP server, by allowing remote access to the SD card on the IMG 1010. The SD Card is a small memory card much like the memory cards used in digital cameras and other devices. The IMG 1010 has an SD card slot positioned on the right hand side of the front panel just below the USB port. Prior to software version 10.3.x the only way to access and edit information on the SD Card would have been to physically go to the remote IMG 1010, pull the card out, insert it into an SD Reader, and edit the information on the SD Card. A new feature which has been implemented in software build 10.5.0 provisions the IMG 1010 as an FTP server instead of just an FTP client. This will give the user the ability to transfer files to and from the SD Card using the FTP utility. The FTP server functionality is disabled by default and would need to be enabled through ClientView in order for the remote provisioning to work.

### Related Topics:

[IMG 1010 - Downloading System Software Using a Boot File on an SD Card](#)

[IMG 1010 - Downloading System Software from an SD Card](#)

[IMG 1010 - Distributing System Software Using an SD Card](#)

[IMG 1010 - Default bootup.cfg File](#)

### Configuring Remote provisioning on SD card

**NOTE: To use the IMG 1010 as an FTP server the SD Card must be inserted into the SD Card socket. The IMG 1010 will have system software running on it which was originally loaded through use of the SD Card**

1. Within ClientView, under the IMG Physical node, right click and select **New FTP Server**. Commit This. Below is a screen capture of the FTP Server Pane

FTP Server Disable		
Property	As-Configured	User-Specified
FTP Server		Disable
FTP Connection Status		
Remote IP Address		

2. In order to enable the IMG as an FTP server, select enable in the drop down menu in the "FTP Server" field.

FTP Server Disable		
Property	As-Configured	User-Specified
FTP Server		Disable
FTP Connection Status		Enable
Remote IP Address		Disable

## Installation and Setup

3. If someone has FTP'd to the IMG 1010 the "FTP Connection Status" field and the "Remote IP Address" field will update. See screen capture below. Notice the Remote IP address field. This is the IP address of the PC that the user is FTP'ing from.

FTP Server Enable		
Property	As-Configured	User-Specified
FTP Server	Enable	Enable
FTP Connection Status	Connected	
Remote IP Address	10.129.39.55	

4. At this point, files can be FTP'd to and from the IMG 1010. Below is an example of using FTP to change the version of software loaded on the SD card

### Procedure:

1. The following procedure will explain how to change the load on an SD Card and upgrade the IMG 1010 software. The procedure will assume that:
  - SD Card was previously used to load IMG 1010 software and the IMG 1010 is running with that software.
  - The FTP Server is configured and enabled in ClientView. See Steps 1-4 above

```
From a DOS or UNIX prompt
ftp <IP address of IMG>
User: excelsw
Password: excelsw
ftp>
```

**NOTE: FTP Applications such as WinSCP that use SFTP (Secure FTP) or SCP (Secure Copy) will not connect to the IMG 1010. Only the FTP Protocol is supported for transferring the files to the IMG 1010 SD Card.**

2. Once logged in you can transfer the new updated IMG software file. Transfer this file as binary.

```
ftp> dir (dir command will show what is loaded on SD Card)
ftp> bin (Set mode to transfer file as binary)
ftp> hash (enable hash printing)
ftp> put img1010_<software version>_id0101.bin
(Transfer times could vary from 2 to 10 minutes depending
on server speed, memory size, etc.)
```

3. Verify the software file was successfully transferred by using the dir or ls command.

```
ftp> dir
```

4. Transfer the bootup.cfg file from the IMG 1010 with the SD Card to the PC.

```
ftp> dir (dir command will show what is loaded on SD Card)
ftp> ascii (Set mode to transfer file as ascii)
ftp> get bootup.cfg (Get copy of bootup.cfg from SD Card)
```

5. Modify the "file=" line on the bootup.cfg file just transferred. Verify the changes to this file are correct. Below is the line in the bootup.cfg file that will need to be edited.

```
# System Software Filename
file=img1010_ver1050137_id0101.bin (Change ver1050137
to new software build. Ex: ver1050140)
```

6. Before transferring the new bootup.cfg file to the SD rename the existing file on the SD card. This can be accomplished using the rename command in ftp. See Below

```
ftp> rename bootup.cfg bootup_old.cfg
```

7. Transfer the new bootup.cfg file to the IMG 1010. Transfer this file as Ascii text.

```
ftp> ascii (Set to transfer an ascii text file)
ftp> put bootup.cfg (Transfer will take a few seconds)
```

8. Once the software is transferred, verify both files were transferred successfully to the SD Card.
9. In order to load latest software into the IMG 1010 the IMG 1010 must be rebooted. Go to ClientView and under the IMG 1010 Physical Node right click and select **Clear Software**.
10. A box will pop up informing you that "This option could have significant effects on the system. Are you sure you want to clear software" Select YES button.
11. The IMG 1010 will now reboot. If you are near the IMG 1010 the LCD on front of IMG 1010 should display the following.

While software is loading to the IMG 1010, the LCD screen will display the following

```
MAC: 00:20:1C:04:03:11 ID:0101
SDC Loading
```

After the software has loaded to the IMG 1010, the LCD screen will display the following

```
MAC: 00:20:1C:04:03:11 ID:0101
Load OK/Jumping to Load
```

After software is done loading, the LCD screen will display the node info and the fans will slow to normal operation

```
Node Name: IMG1010
Node ID: 255
```

12. The loading of software through the SD Card will take approximately 4 minutes. Once the software is loaded then GCEMS will configure the IMG 1010.



## IMG 1004 - Introduction

### Overview of Installation and Setup - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Introduction

This Installation and Setup Guide will discuss the procedures for unpacking your Dialogic® IMG 1004 Integrated Media Gateway and Dialogic® GateControl Element Management System Server from the box to the point at which you can begin to configure the IMG 1004 using the ClientView GUI.

#### Assumptions

It is assumed that personnel performing these installation and setup procedures are familiar with telecommunications equipment and have a working knowledge of Linux.

#### Task Summary

1. [Install Hardware](#)
2. Install Software (if required)
3. Setup the GateControl EMS server
4. [Start ClientView](#)

## Items Required for Installation - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Introduction

This topic describes the items required for the IMG 1004 and GCEMS Server installation. Certain models of the GCEMS Server purchased through your IMG 1004 supplier have software installed as indicated below.

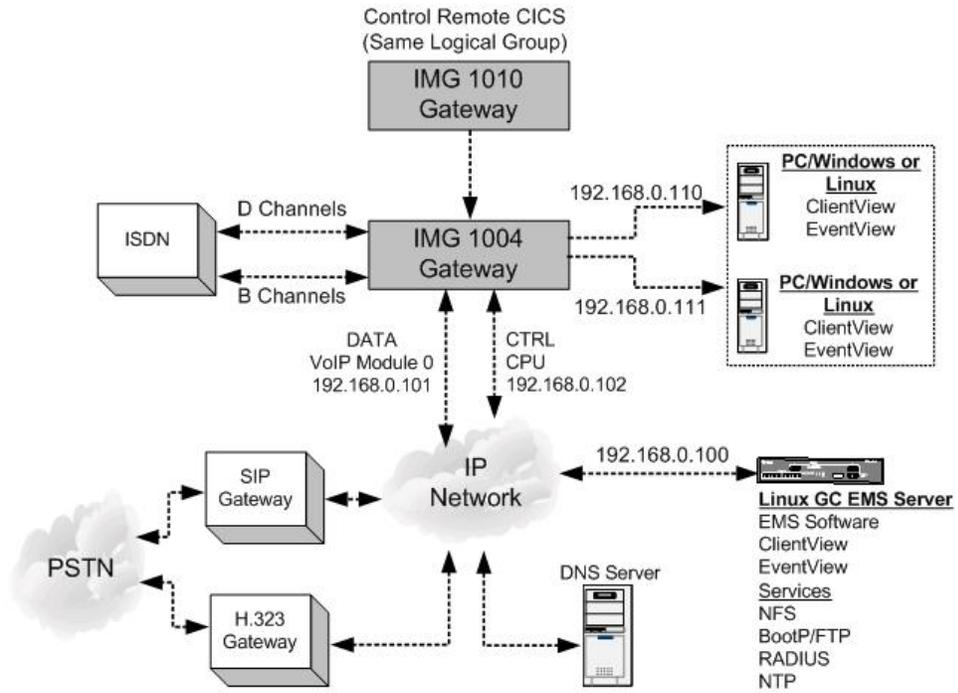
Item		Dialogic Supplied Server	
<b>Server with Linux Red Hat Enterprise installed</b>	Dell 860 Pentium D, Dell 1950 Dell CR100	IMG-EMS-0860R (Linux Software Installed)  IMG-EMS-0861R (Linux Software not Installed)  IMG-EMS-1950R (Linux Software Installed)  IMG-EMS-1951R (Linux Software not Installed)	Third party servers must meet the following minimum requirements for a single IMG 1004 configuration:  See <a href="#">Dell Server Configuration Details</a>
<b>Hardware</b>	Keyboard Mouse Monitor	Not Supplied by Dialogic	Not Supplied by Dialogic
<b>IMG System Software</b>	IMG 1004 = img1004_ver1004xxx_id0106.bin (xxx = build number of software)	Factory-Installed	On software CD included with shipment.
<b>GCEMS Software</b>	IMG_<software_version>.bin (Ex: IMG_10.5.0.152)  IMGUserInterface_<software_version>.bin	Factory-Installed	On software CD included with shipment.
<b>Remote Monitoring</b>	VNC Monitor Software	Factory Installed.	Installed with Linux Red Hat but not enabled. <a href="http://www.realvnc.com">www.realvnc.com</a>
<b>Install Scripts</b>	- xldhcp - xlntp - lnimg	Factory Installed	Automatically installed into directory:  /opt/cantata/common/osconfig (Software 10.3.x - 10.5.0) or /opt/dialogic/common/osconfig (Software 10.5.1 +)
<b>Operating System</b>	Red Hat Linux 3.0 ES, (Kernal 2.4) Red Hat Linux 4.0 ES, Nahant Update 6.0 (Kernal 2.6) Red Hat Linux 5.0 ES, Tikanga Update 1.0 (Kernal 2.6)	Factory-Installed: RedHat 4.0 Nahant Update 6	Obtain Linux Software via RedHat web site. Obtain updates via RedHat web site.
<b>IMG License</b>	<Chas Ser. Number>_<Date/Time>.cfg	Sent separately by your supplier.	Sent separately by your supplier.

## Sample Network Scenario - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Introduction

The following is an example of a basic network scenario that you can use to get started with your IMG 1004.

For other options, see Network Interface Scenarios in the On-line Help.



## Licensing - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Introduction

### Overview

The IMG 1004 and various components require a license to be operated or enabled. The licenses are generated at Dialogic and are distributed with the software supplied with IMG 1004. Each license will unlock different functionality and the licenses are sold in different increments to address to different customer needs. The license will need to be transferred to one of the following directories located on the GCEMS server.

/opt/cantata/common/licenses (Software 10.3.x - 10.5.0)

-or-

/opt/dialogic/common/licenses (Software 10.5.1 and above)

### File Format

The license file supplied contains a unique name which is derived from the serial number of the IMG 1004. The format of the file includes the eight digit serial number first (NNNNNNNN) followed by a timestamp (YYYYMMDDHHSS).

NNNNNNNN\_YYYYMMDDHHSS.cfg

If the license is renamed or altered, it will become unusable.

### Downloading a new License

1. FTP the license file into one of the directories shown above.
2. Right-click the Physical IMG and select **IMG Licensing Info**.
3. Right-click **IMG License Info** and select **Commit**.
4. The License Info pane appears. Click the **Download Node License** button.
5. The license will now get sent to the IMG 1004. The license Info pane now displays the new license specifications.

**NOTE: The license is downloaded to the IMG 1004 based on the serial number. If a license other than the license intended for this machine is sent to the IMG 1004 the license will not download. It has to be specifically created for this machine's serial number.**

**NOTE: Do not rename or alter the license file in any way; it will become unusable if altered.**

### Viewing License Info

You can view the current license status on a Physical IMG using the License Info pane.

### Evaluation License

Evaluation licenses expire after a specified number of days. If you are using an Evaluation License, the **License Expiration Info** field indicates the date/time that the license will expire, as shown below. If you are not using an Evaluation License, the field will say "Does not expire".

You will get an EventView alarm and a warning pop-up in ClientView when there is 72 hours remaining on the license and when has expired.

IMG License Info	
Property	As-Configured
System Software License Info	IMG10003
License Expiration Info	Expires on Wed Nov 29 05:16:25 2006

## License Validation Failure

If for some reason the license isn't valid for your IMG 1004 the icon shown below will appear in the ClientView tree after creating a Physical Node.



## Licensed Components

Below are the licenses that can be created for the IMG 1004. Information on each is provided. Table 1 below shows the increments that each license can be purchased

### NOTE:

If licensing remote CIC's, each remote node must have an SS7\_ISUP port license that equals the number of CIC's you want to configure on that remote node.

#### **System Software**

System Software License is needed on all IMG's and is specific to the software build (10.5.x, 10.3.x) A basic System Software License includes as a default 1024 DSP Resources

#### **Switchkit<sup>®</sup>\_Node**

The Switchkit<sup>®</sup> Node license will allow GCEMS to communicate with the IMG 1004

#### **TDM\_Port**

There are a total of 128 TDM ports on the IMG 1004. (4 E1 and 4 T1) Table 1 below displays the increments that the licenses are created.

#### **SS7\_Base**

The SS7 base license will need to be loaded if SS7 is going to be used.

#### **SS7\_ISUP (CICS)**

Up to 128 Ports can be licensed on the IMG 1004. See Table 1 Below.

#### **SS7\_LINK**

Up to 4 links can be licensed.

#### **CAS**

Up to 128 ports can be licensed for CAS channels. By default when ordering TDM port licenses you are automatically given the same number of CAS licenses with no extra charge. See Table 1 below

#### **VoIP\_Ports**

There are a total of 128 VoIP Ports. See Table 1 below.

#### **ISDN\_Ports**

Up to 128 ports can be licensed for ISDN B/D channels. See Table 1 below.

**Wireless Codecs**

Up to 128 ports can be licensed for AMR AND EVRC. See Table 1 below.

**Table 1**

SS7 ISUP	CAS	VOIP	ISDN	EVRC CODEC	*AMR CODEC
32	32	32	32	32	32
64	64	64	64	64	64
96	96	96	96	96	96
128	128	128	128	128	128

**DSP\_Resource Points**

The IMG 1004 initially comes licensed with 1024 Resource Points. Licenses are then created in 1024 port increments.

**SS7 Links (Software 10.5.1 + only)**

The IMG 1004 supports up to 4 links. The links are licensed in 2 link increments.

\* Using the AMR-NB resource in connection with a Dialogic® product does not grant the right to practice the AMR-NB standard. To seek a patent license agreement to practice the standard, contact the VoiceAge Corporation at <http://www.voiceage.com/licensing.php>.

## IMG 1004 - Hardware Installation

### Hardware Installation Task Summary - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

Perform the following steps to install the IMG 1004.

1. Prepare the site that IMG 1004 will be installed.  
[IMG 1004 - Site Preparation](#)
2. Unpack IMG 1004 from shipping box.  
[IMG 1004-Unpacking](#)
3. Mount the IMG 1004 in one of the two scenarios listed below.  
[IMG 1004 - Rack Mounting](#)  
[IMG 1004 - Surface Mounting](#)
4. Connect Power  
[IMG 1004 - Connecting AC Power](#)
5. Connect IMG 1004 to Network  
[IMG 1004 - Connect Ethernet and TDM Cables](#)

**Related Topics:**

IMG 1004 - RJ48Connector Pinouts (in the On-line Help)

## Site Preparation - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

Ensure that the following requirements are met before you begin installation.

**Important:** Any variances from the mutually agreed upon site preparation details (such as power cabling, network cabling, equipment room readiness) may affect installation scheduling.

### Site Preparation Checklist

Requirements	Completed
Location	<input type="checkbox"/>
Spacing	<input type="checkbox"/>
Mounting	<input type="checkbox"/>
Power	<input type="checkbox"/>
Electromagnetic Interference	<input type="checkbox"/>
Channel Service Units	<input type="checkbox"/>
Electrostatic Discharge Protection	<input type="checkbox"/>

### Location

The 120/240 V AC unit does not have to be located in a restricted area. It can be located in a clean and well ventilated office space.

### Spacing

There are no spacing requirements.

### Mounting

The IMG 1004 can be mounted in a 19-inch rack. The mounting brackets can be mounted at either the front or the rear of the IMG 1004 chassis.

 <b>CAUTION</b>	<ul style="list-style-type: none"><li>• If mounting multiple IMG 1004's in a rack, ensure that a hazardous condition does not exist due to uneven mechanical loading.</li><li>• Avoid mounting inside a cabinet with closed doors unless you can provide sufficient ventilation inside the cabinet. Elevated operating ambient conditions may occur in an enclosed equipment rack. The operating ambient temperature may be greater than the room temperature.</li><li>• Do not block the front of the chassis doing so can cause the unit to overheat.</li></ul>
--	---

## Power

See [Connecting AC Power](#)

## Electromagnetic Interference

Electromagnetic Interference (EMI) is a type of radiation that can hinder your system. Keep the following in mind when selecting cables:

- Dialogic requires that all cabling with the exception of the power cord be shielded. Shielded cable will prevent outside electrical interference and will drain off any induced current.
- Twisted wire reduces induction, and thus interference, from one wire to the other. Varying the length of twists reduces the potential for signal interference between pairs.
- Twisted pair wiring is available in various thicknesses. Thicker cable covers longer distances and provides better sound quality but it is more expensive.

## Channel Service Units

A Channel Service Unit (CSU) connects a digital phone line (T1, E1) from the phone company to a digital communications device. CSUs are required between all telecommunication ports and the network to provide necessary linking capabilities such as:

- Line conditioning for long haul transmissions
- Remote loopback
- Equalization
- Regeneration and monitoring of digital signals
- Digital circuit testing
- Protection from outside lines

## Electrostatic Discharge Protection

Electrostatic Discharge Protection (EDP) must always be used. Electrostatic Discharge (ESD) protective straps, shoes, or mats must be used when working with electronic components.



Electrostatic discharge from your body can damage integrated circuits during installation.

## Unpacking - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

Retain all shipping materials in case you need to either relocate or re-ship the unit in the future. Use the packing materials to return the unit to the supplier; otherwise you may be charged for any damage that may occur during shipment.

### Procedure

The IMG 1004 and supplied items are shipped in a single container. Carefully unpack the unit as described below.

1. Open the container and remove the packing list.
2. Remove the protective cover and remove the IMG 1004 from the container.
3. Carefully remove the static protective bag.
4. Carefully inspect the IMG 1004. Should any discrepancies exist, contact your supplier representative immediately.

### Supplied items

Review the packing list to ensure that all items on packing list have been sent. Should any discrepancies exist, contact your supplier representative immediately.

### AC Power Chassis

- AC power cord
- Software CD ROM's

### Next Task

[IMG 1004 - Rack Mounting](#) -or-  
[IMG 1004 - Surface Mounting](#)

## Rack Mounting the IMG 1004

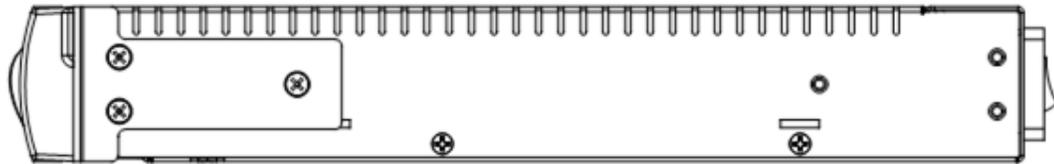
**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

### Overview

The IMG 1004 is shipped ready to be mounted in a 19" rack. Use instructions below when installing into rack.

### Factory Installed 19" Bracket Position

The IMG 1004 ships with brackets for a 19" rack. They are installed in the front mount position. See diagram below



### Mounting Options

Brackets can be positioned and rotated to align ears as required. The mounting brackets can be positioned on either the front or the rear of the IMG 1004.

### Mounting Guidelines

When mounting the chassis, follow these guidelines:

- Do not obstruct air flow to the front or the side vent holes.
- Mount in a clean well ventilated area

## 19" Rack Mounting

### Required Tools and Hardware

The following customer-supplied tools and hardware are needed to mount the unit.

- Phillips head screwdriver
- Rack mounting hardware

### Procedure

1. Position the mounting brackets on the side of the IMG 1004 in either the front or rear of chassis and secure with supplied screws.
2. Align the holes on the mounting bracket ears to the mounting holes on the rack.
3. Secure IMG 1004 into 19" rack with correct thread and size screws.

### Next Task

[IMG 1004 - Connecting AC Power](#)

## Surface Mounting - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

### Mounting Guidelines

When mounting the chassis, follow these guidelines:

- Do not obstruct air flow to the front or rear vent holes on the unit.
- Mount in a clean well ventilated area.

### Procedure

1. Set the unit on a clean, secure and level surface. Unit is now ready for cabling.

### Next Task

[IMG 1004 - Connecting AC Power](#)

## AC Power Specifications

**Topic Location:** *Hardware Reference > Power*

The AC input power must conform to the following specifications:

**IMG 1004**

AC Power	120-240 V AC, 60-50 Hz, 1A-.5A
Range	90 to 240 V AC

## Connecting AC Power - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

### Related Topic

[IMG 1004 - AC Power Information](#) (in On-line Help)

### Overview

The IMG 1004 supports an AC power option to support domestic and international customers. The AC power module is located in the rear of the chassis. Internally the output of the AC power module connects to a power supply board mounted to the inside of the IMG 1004. This board converts an AC voltage to a DC voltage and then feeds the DC voltage to the main board through a 6 wire cable assembly.

### Warnings/Cautions

- Ensure the AC power module switch is set to O (Off) prior to connecting the IMG 1004 to the AC power source.

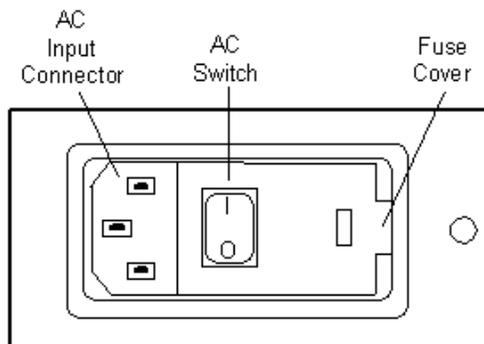
### Procedure

Complete the following steps to connect AC power to the chassis.

1. Toggle power module switch to O position (Off)
2. Plug AC cable into the receptacle on the AC power module
3. Insert other end into a grounded wall outlet, uninterruptible power supply (UPS), or surge protector.
4. Press switch on the AC power module to I (On).

### AC Power Module

The AC power is provided through a standard three position male AC input power module that has an integrated fuse and power switch built in. This power module will allow for all variations of AC power outlets by simply using a standard power cable with a compatible outlet plug for your application. The figure below shows the AC Power Module.



### Other Considerations

#### Uninterruptible Power Supply Option

If your site has frequent power interruptions, consider using an Uninterruptible Power Supply (UPS) for your IMG 1004. You can avoid downtime by running your system that receives its AC power from batteries during a power failure.

#### Surge Protection

It is advisable to install a surge protector between your call processing system and the power outlet. If a high voltage surge occurs on the power line, this device can protect your system by sending the overload to ground.

## Connecting Ethernet and TDM Cables - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

**Caution:** Routers or switches connected to the IMG 1004 should be configured for 100 Mb/sec and Auto-negotiation. Disabling Auto-negotiation may result in packet loss.

**Caution:** Broadcast propagation between ports must be enabled to allow for BootP to be successful.

### Network Interface Ports

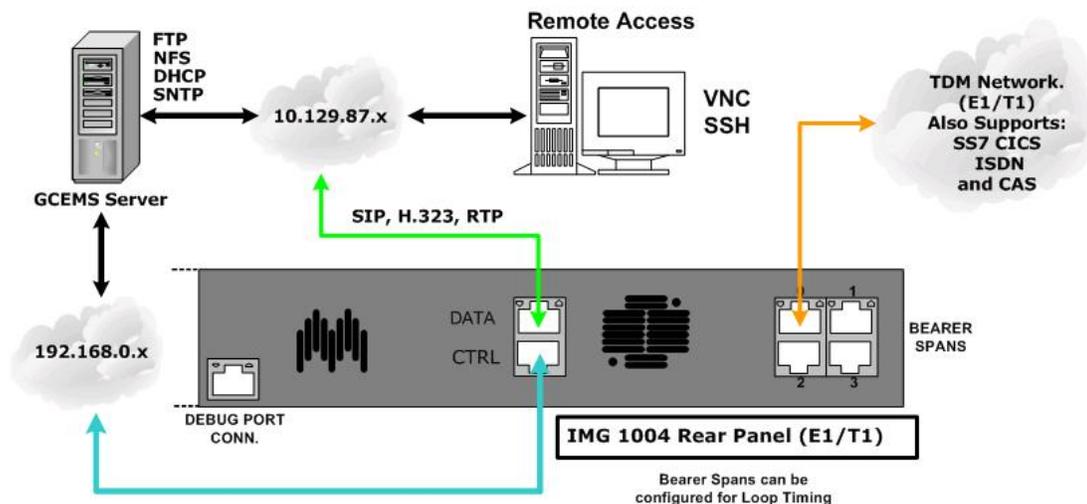
There are two types of Network Interface ports on the IMG 1004:

- Control (Network Management)
- Data (RTP for SIP and H.323)

The IMG 1004 supports a variety of scenarios for designing your IP network. In the example below the Network Management is connected to the CTRL port and the media stream will interface with the DATA Port. The connections can be on the same subnet or separated into two separate subnets.

### TDM Bearer Channels

The Bearer ports are used as bearer spans only (T1/E1).



### Related Topic

RJ 48 Connector Pinouts

## Timing - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-Hardware Installation

### Timing

By default Primary Loop and Secondary Loop Timing (Not external reference clock) can be configured only on Bearer Span Ports 0 and 1. For Timing pinouts see IMG 1004-RJ48 Connector Pinouts

**NOTE: The IMG 1004 cannot time off an atomic clock or similar. The TDM inputs on the rear of the unit will only accept a loop timing clock source from T1 or E1.**

# IMG 1004 - Software Installation and Setup

## Software Installation Overview - IMG 1004

**Topic Location:** IMG1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Overview on Downloading Software to IMG 1004

The IMG 1004 can get its software load in one of a three different ways.

1. Software is loaded through use of an FTP server. The Linux Server that is setup for use with GCEMS can also be setup to use as an FTP server. See the procedure in this topic below
2. Software is loaded through use of an SD Card, which can be inserted into the front panel of the IMG 1004  
[IMG 1004 - Downloading System Software from an SD Card](#)
3. A combination of using the SD Card and FTP Server. The SD Card is used to assign IP and FTP addresses and the FTP server holds the files needed for the download.  
[IMG 1004 - Downloading System Software Using a Boot File on an SD Card](#)

### Items Required for Installation

For a list of items required click on the link: [Items Required for Installation](#).

### Minimum Server Specifications

For a detailed explanation on minimum requirements click on link: [Dell Server Configuration Details](#)

This section documents the installation of software on your GCEMS server if it is not factory installed. If you purchased your server through Dialogic or IMG 1004 supplier the software is already installed unless specifically ordered without software. If software is installed proceed to Setting Up the GateControl EMS Server.

If you purchased your server from Dialogic without software installed, or purchased from a 3rd party, you must install software.

### Items Required for Installation

For a list of items required click on the link: [IMG 1004 - Items Required for Installation](#).

### Minimum Server Specifications

For a detailed explanation on minimum requirements click on link: [Dell Server Configuration Details](#).

## Before You Begin

- Verify you have unpacked, mounted, and connected power to the GCEMS server (Linux Server) and IMG 1004. See the manufacturer's instructions for installation procedures.
- Verify that you have acquired IP Addresses for the IMG 1004 and the GCEMS server.
- Verify that you have the correct MAC address from the IMG 1004. The MAC address is displayed on a label located on the rear of IMG 1004 chassis.
- Verify the latest IMG 1004 system software file has been acquired. This file is on the software discs supplied or can be downloaded after logging in to the Dialogic Technical Support website. <http://www.dialogic.com/support> and selecting Software Downloads BBS. (You must have login access to both the support site and the BBS site in order to be able to download software)
- Verify the latest GCEMS software files (IMG\_10.x.xxx and IMGUserInterface\_10.5.x.xxx) have been acquired. The files are located on the software discs supplied or can be downloaded after logging in to the Dialogic Technical Support Website. <http://www.dialogic.com/support> and selecting Software Downloads

## Linux Services Needed

The services such as DHCP and SNTP can either be run on the Linux Server that the GCEMS is loaded on or can be set up to run on a separate machine. For ease of configuration, Dialogic the services should run from the same machine. The services below are installed on the GCEMS server when Linux Red Hat Enterprise is installed. These services can be used to work with the IMG 1004

- **DHCP (Dynamic Host Configuration Protocol)**  
Required to perform BootP function for the IMG 1004. The BootP server and the IMG 1004's must be on the same subnet.
- **FTP Server (Daemon)**  
Required to download the system software to the IMG 1004.
- **SNTP (Simple Network Time Protocol) Server**  
Required to synchronize the time on the IMG 1004. Must co-locate with the FTP server.
- **NFS (Network File System)**  
Used to download packaged treatments to the IMG 1004.
- **VNC**  
Used for remote monitoring and configuration. Installing the VNC application is beneficial because Dialogic Technical Support Personnel will use this application to diagnose any issues that may arise.

## Miscellaneous Information

NOTE: If you purchased your server through Dialogic or IMG 1004 supplier the software should already be installed along with all services. If this is the case then setting IP addresses and retrieving the latest version of software is needed and most steps below can be avoided. If software is already installed proceed to [IMG 1004-Downloading System Software](#). If GCEMS server was purchased without software or the customer will provide its own server then follow instructions below.

## Procedure:

1. If not already configured when Linux Red Hat Enterprise OS was installed then a Linux user must be configured. This user will be given the name excelsw and is the user configured to run the GCEMS software etc. See the [Configuring the Linux User \(excelsw\)](#) to configure the excelsw user.
2. Once the Linux user is created the next step is to install the GCEMS software onto the GCEMS server. See [Installing GCEMS Software](#) for information on accomplishing this.
3. After the GCEMS software is installed then the GCEMS software must be configured and the nfs, dhcpd, vsftpd, and ntp services need to be configured and started. See [IMG 1004-Configure GCEMS and Start Linux Services](#) link for more information on how to accomplish this.
4. The software is loaded, the GCEMS is configured and the Linux Services are configured and running. The next step is to download the system software from the GCEMS server to the IMG 1004. See IMG 1004-Downloading System Software
5. Once software is downloaded and GCEMS software has been installed the GCEMS will need to be started. See [Starting GateControl EMS](#) topic on how to start the GCEMS application.
6. Once GCEMS is started the ClientView will need to be started. See [Starting ClientView](#) on how to start the ClientView application.
7. Once ClientView is started and you can configure the IMG 1004 the next step is to configure the GCEMS so that you can get remote access. See [Configuring Remote Desktop](#) for information on configuring and running RealVNC remote access.

## Summary of Software Installation and Setup Tasks - IMG 1004

**Topic Location:** IMG1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

1. Install Linux on the GateControl EMS Server
2. Configure System Services
3. Install Linux Patches (if required)
4. Configure the Linux User
5. Install GateControl EMS Software (GCEMS, ClientView, EventView)
6. Install ClientView for Windows® (Optional)
7. Start GateControl EMS
8. Start ClientView

### **Related Topic**

[Changing or Deleting GCEMS](#)

## Configuring the Linux User - (excelsw)

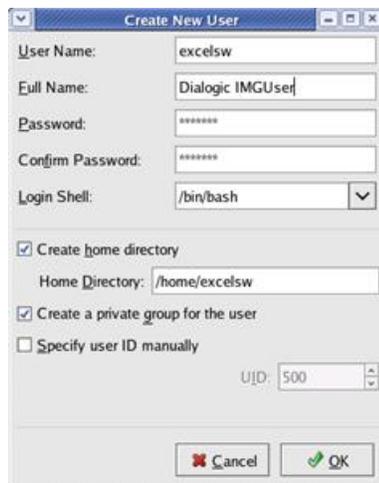
### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup

or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

1. To create a new user named **excelsw** follow instructions below.
  - a. Go to Red Hat Applications Main Menu >> System Settings >> Users and Groups
  - b. Enter root password **excel2** when prompted
  - c. The User Manager screen will appear. Select to **Add User** and a screen like below will appear.
  - d. Enter User Name: *excelsw*
  - e. Enter Password: *excelsw* (Password must be **excelsw** to download software)
  - f. Enter a name in the Full Name Box. Any name can be entered.
  - g. Verify the rest of the boxes are configured as shown in the screen capture below
  - h. Click OK



2. From the User Manager screen, assign the user **excelsw** permissions to use FTP and SSHD.
  - a. Select excelsw user and select properties. The Group Properties screen appears.
  - b. Select Group Users Tab and enable FTP and SSH by checking them.
  - c. Click **OK** to exit to the Users screen.



3. Restart VSFTP service.
  - a. Go to the Main Menu>>System Settings >>Server Settings >> Services.
  - b. Scroll down to the process vsftpd and check the box.
  - c. Right click and select 'Restart' to restart the service.
  - d. Exit back to the desktop, saving changes.

## Installing GCEMS Software

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or  
IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

Follow procedure below to install the IMG software on to the GCEMS Server. The IMG User Interfaces, ClientView, EventView, and AdminView can be installed either on the same PC or on a separate PC from which the GCEMS software is located. This procedure includes steps for installing them on the same Linux machine as the GCEMS.

To install the IMG User Interfaces on a machine with the Windows® Operating System see following link [Installing ClientView for Windows®](#).

### Before you Begin:

1. Obtain the software builds from the IMG Software CD or get the latest version from the Customer Support BBS.
2. Obtain the license sent to you before the IMG was shipped or use the license that is included on CD shipped with the unit.

### Steps:

1. Open a terminal window and go to /home/excelsw. Create a directory named ftpBuilds. See below

```
$ mkdir ftpBuilds
```

2. Transfer the following files to /home/excelsw/ftpBuilds on the GCEMS server:
  - IMG\_10.x.x.xx.bin (GCEMS)
  - IMGUserInterface\_10.x.x.xx.bin (ClientView, EventView, AdminView)
3. Once the files are transferred they need to become executable. Change the mode of the .bin files to executable by performing a chmod +x to each .bin file. This will give execute abilities to all users.

```
$ chmod +x IMG_10.x.x.xx.bin  
$ chmod +x IMGUserInterface_10.x.x.xx.bin
```

4. Become a **Super User** and install GCEMS software by entering following command:

```
# ./IMG_10.x.x.xx.bin
```

- Follow the instructions as prompted.
- See [GCEMS Installation Script](#) for sample script.

5. As **Super User**, install IMG User Interface (ClientView) software by entering following command:

```
#./IMGUserInterface_10.x.x.xx.bin
```

- Follow the instructions as prompted.
- See [GCEMS Installation Script](#) for sample script.

6. Once finished an icon for ClientView, AdminView, StopGCEMS, and StartGCEMS is automatically created and placed on the Linux Red Hat desktop.
7. Log out of the Super User mode by entering the **quit** command and become excelsw user again. This will create an entry in the /etc/profile to set the SK\_LIB\_DIR directory.
8. To verify that the SK\_LIB\_DIR path is correct, go to the /etc directory and enter the more command to the profile file. See Command Below.

```
[excelsw@img1010 etc]$ more profile
```

Verify the following depending on the software version being used:

```
SK_LIB_DIR=/opt/cantata/IMG/GateControlEMS and  
LD_LIBRARY_PATH:/opt/cantata/IMG/GateControlEMS/lib (Software 10.3.3 - 10.5.0)
```

or

```
SK_LIB_DIR=/opt/dialogic/IMG/GateControlEMS and  
LD_LIBRARY_PATH:/opt/dialogic/IMG/GateControlEMS/lib (Software 10.5.1 +)
```

9. Use FTP to transfer your IMG license to the license folder. Login as user excelsw and put the license file *<chassis serial number>-<date>.cfg* into one the following directory:

```
/opt/cantata/common/license (Software 10.3.x to 10.5.0)
```

or

```
/opt/dialogic/common/license (Software 10.5.1 +)
```

10. See the link "Folders and Files Created During Installation" This will explain the directory structure and explain what each folder is created for.
11. Once software is installed then the services such as ftp, dhcpd, nfs, and ntpd will need to be configured and started. See Configuring Linux Services for information on how to accomplish this

## GCEMS Installation Script

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup

or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Script (Installing IMG GCEMS Software)

```
[root@img2-dtran ftpBuilds]# ./IMG_10.3.3.229.bin
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...
Launching installer...
Preparing CONSOLE Mode Installation...
=====
IMG                                     (created with InstallAnywhere by Macrovision)
=====
Introduction
-----
InstallAnywhere will guide you through the installation of Dialogic IMG 1010
Integrated Media & Signaling Gateway 10.3.3.229.
It is strongly recommended that you quit all programs before continuing with
this installation.
Respond to each prompt to proceed to the next step in the installation.  If you
want to change something on a previous step, type 'back'.
You may cancel this installation at any time by typing 'quit'.
PRESS <ENTER> TO CONTINUE:
=====
Pre-Installation Summary
-----
Please Review the Following Before Continuing:
Java VM Installation Folder:
    /jre
Product
    GateControleMS
Install Folder
    /opt/cantata/IMG
PRESS <ENTER> TO CONTINUE:
=====
Installing...
[=====|=====|=====|=====]
[-----|-----|-----|-----]
=====
Installation Complete
-----
Congratulations! IMG 10.3.3.229 has been successfully installed to:
/opt/cantata
*****
*****
To properly run this product, you must
LOG OUT AND BACK IN
to set up your environment.
*****
*****
The following directories have been configured as NFS mountable:
/opt/cantata/common/calltracing
/opt/cantata/common/treatments/datafiles
/opt/cantata/common/routing/sending
* NOTE: The NFS service should be restarted after this installation completes
*****
*****
Press "Enter" to continue.
PRESS <ENTER> TO EXIT THE INSTALLER:
[root@img2-dtran ftpBuilds]#
```

## Installing IMG ClientView Software

```
[excelsw@img2-dtran ftpBuilds]$ su
Password:
[root@img2-dtran ftpBuilds]# ./IMGUserInterface_10.3.3.229.bin
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...
Launching installer...
Preparing CONSOLE Mode Installation...
=====
ClientView                (created with InstallAnywhere by Macrovision)
-----
=====
Introduction
-----
InstallAnywhere will guide you through the installation of Dialogic ClientView
10.3.3.229.
It is strongly recommended that you quit all programs before continuing with
this installation.
Respond to each prompt to proceed to the next step in the installation.  If you
want to change something on a previous step, type 'back'.
You may cancel this installation at any time by typing 'quit'.
PRESS <ENTER> TO CONTINUE:
=====
Pre-Installation Summary
-----
Please Review the Following Before Continuing:
Product Name:
  ClientView
Install Folder:
  /opt/cantata
Link Folder:
  /tmp/install.dir.7368/Do_Not_Install
Product Components:
  ClientView
Disk Space Information (for Installation Target):
  Required: 178,030,774 bytes
  Available: 1,418,543,104 bytes
PRESS <ENTER> TO CONTINUE:
=====
Installing...
-----
[=====|=====|=====|=====]
[-----|-----|-----|-----]
=====
Please Review
-----
Congratulations. ClientView has been successfully installed to:
/opt/cantata
*****
This installation has set some environment variables in /etc/profile. These
variables are not set in this window or any other windows opened prior to
installing the User Interfaces. For this installation to work properly, these
variables must be set.
These variables include the following:
SK_PRODUCT - to determine which Cantata product is running
```

## Installation and Setup

SK\_PRODUCT\_HELP - to determine which Cantata help should be used

PATH - to find the correct version of JAVA

\*\*\*\*\*  
\*\*\*\*\*

To properly run this product, you must

LOG OUT AND BACK IN

to set up your environment.

\*\*\*\*\*  
\*\*\*\*\*

Press "Enter" to quit the installer.

PRESS <ENTER> TO CONTINUE:

[root@img2-dtran ftpBuilds]#

## Folders and Files Created During Installation

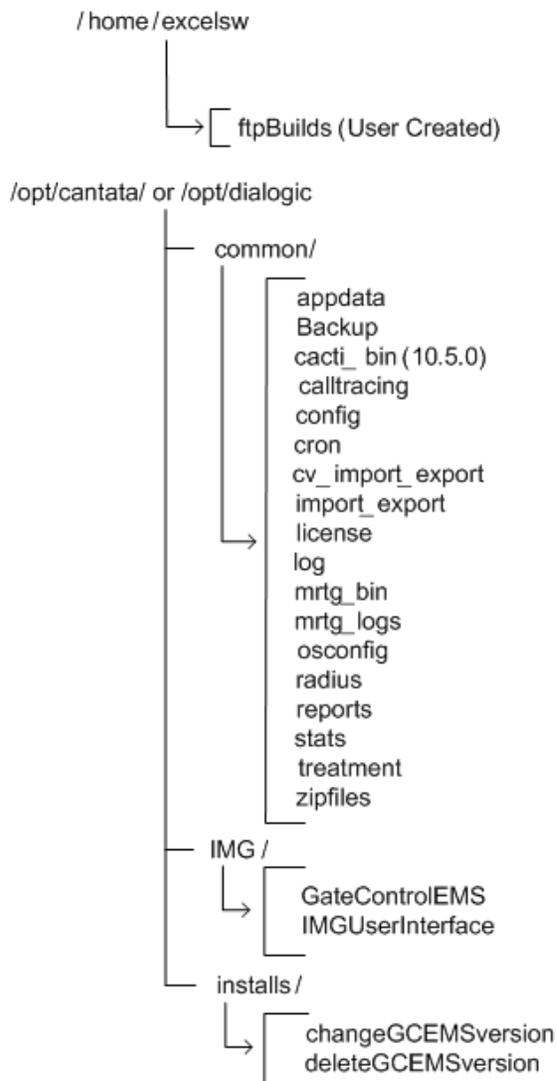
### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Directory Structure

After installation of IMG and IMGUserInterface software onto the GCEMS server, the following folders are created. Below is a diagram on what folders are created and where they are located. Below the diagram is information on some of the notable folders.



### **/opt/cantata (dialogic)/common directory**

#### **backup**

During each day, files are generated in the IMG under multiple folders that show the status of the IMG. Files such as log files, stat files, and configuration change files just to name a few are stored in the backup folder. Each day at approximately 12:30 am, the backup folder directory is zipped up and sent to the zipfiles folder. At this point, the files in the backup folder are wiped out and a new set of files will begin to accumulate in this folder.

#### **Cacti\_bin (10.5.0 +)**

This folder contains the perl scripts that will retrieve the data from the stats folder. The stats will then get plotted as a graph for the user to gather. Cacti is a graphing application that is similar to MRTG.

#### **calltracing**

In Clientview under the physical node, the user can configure the IMG to run a Call Trace of a specific IMG. Once this is configured all call trace logs are stored in this folder. The filename is of the following format

```
sysLog_<serial#IMG>_<Date>_<Time>.log
```

#### **config**

Holds all configuration files needed to configure the system. The system.cfg and the default.csa files are stored in this folder. Below is a list of configuration files stored in this folder.

- system.cfg --> File used by GCEMS to configure the IMG
- default.csa --> File used by Clientview to configure the IMG
- Imports --> CAS Variants stored in XML format
- Routing --> IMG resource and route tables used for routing
- Variant --> Used to store SS7 Variants
- Working --> Each time the configuration is changed in ClientView a configuration file is saved here.

**NOTE:** During the installation, if a system.cfg file already exists, it will be renamed system\_<DATE\_OF\_INSTALL>.cfg.

#### **license**

This folder holds the license files that the IMG accesses during configuration. The license files naming convention is as follows:

```
<serial#IMG>_<DateTime>.cfg
```

#### **log**

Contains all current log files that are generated. Support Personnel may request specific log files from this folder when troubleshooting a problem. See Log Files.

#### **reports**

Stores report output files.

#### **stats**

This folder contains the files that are used by MRTG and Cacti (10.5.0). The files are also used to send call data to display the Channel Group Stats in ClientView. Data such as Temperature, Fan Speed, CPU Usage, Incoming and Outgoing Calls are among just a few of the statistics being logged in this folder. All files are stored as .csv files.

### treatment

Contains vocabulary index files, vif.csv, and img\_vocab.dat files which are all used when playing treatments or announcements

### Radius

This folder stores the dictionary and dictionary.cantata files. These file are needed when configuring a Radius Server for use in Authentication and Accounting of Calls coming into the IMG. The dictionary.cantata file contains Dialogic-specific VSA's for Accounting and Authentication.

### mrtg\_bin

This folder contains the perl scripts that will retrieve the data from the stats folder. The stats will then get plotted as a graph for the user to gather

### cron

This folder is used to store different crontasks needed by the user.

## /opt/cantata (dialogic)/IMG directory

### GateControl EMS

The GateControlEMS in this folder is a link to the version of software being used. This is the current version of IMG software running on the GCEMS server. See Below when user enters ls -la command. This link points to the correct version of software being used since there can be multiple versions and builds of software loaded on the GCEMS server.

```
GateControlEMS --> /opt/cantata/installs/IMG_10.3.3.195/GateControlEMS
                    or
GateControlEMS --> /opt/dialogic/installs/IMG_10.5.1.10/GateControlEMS
```

### IMGUserInterface

The IMGUserInterface file in this folder is a link to the version of software being used. This is the current version of ClientView running on the GCEMS server. See Below when user enters ls -la command.

```
IMGUserInterface --> /opt/cantata/installs/IMGUserInterface_10.3.3.195/IMGUserInterface
                    or
IMGUserInterface --> /opt/dialogic/installs/IMGUserInterface_10.5.1.10/IMGUserInterface
```

## opt/cantata (dialogic)/installs directory

This folder contains a subfolder for each version of GCEMS and ClientView software you have downloaded. It also contains the following utilities that allow you to change or delete the running version of GCEMS:

**ChangeGCEMSVersion** --> Running this script allows the user to change the software version being run. For Example: During troubleshooting a particular problem a Support Personnel needs to resort back to a previous build, the support personnel would run this script which makes it very easy to switch between versions of software.

**DeleteGCEMSVersion** --> Running this script will completely delete all aspects of a particular software build. Once this script has been executed, the version of software being removed will no longer be accessible.

## Configure GCEMS and Start Linux Services - IMG 1004

### Topic Location:

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

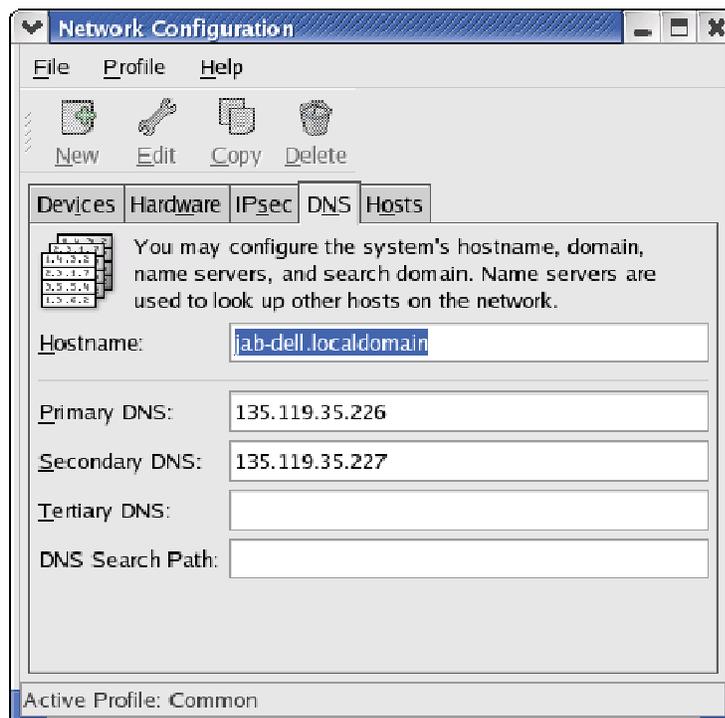
### Before You Begin:

- The IMG 1004 should be unpacked, mounted, and connected power to the GCEMS server. See the manufacturer's instructions for installation procedures.
- The GateControl EMS software must be installed. See [Installing GCEMS Software](#).
- Acquire IP Addresses for the IMG 1004.
- Acquire the MAC address of the IMG 1004 from tag on rear of unit.

### Procedure:

Follow these steps to setup the GCEMS Server.

1. Connect to the GCEMS Server.
2. Login as:  
user: **excelsw**  
password: **excelsw**
3. If a DNS server will be needed in your network you will need to configure a DNS server. To configure DNS server on GCEMS server follow next few steps.
4. In the RedHat GUI select System Settings > Network and the following screen below will appear.
5. Select the **DNS** tab and enter a hostname for the DNS server in the *Hostname* field.
6. Enter Primary and Secondary IP addresses for the primary and secondary DNS servers.
7. Close the network configuration screen.



7. The first step is to create a link for the dhcpd.conf file in /etc. There are two ways to create this link. There is a manual way where the command is entered manually into a terminal, and there is a script written to make the process easier. The next few steps below explain both processes.

## Create link using Inimg script

1. Go to one of the following directories depending on the software version being used. See Below.

```
/opt/cantata/common/osconfig (Software 10.3.x to 10.5.0)
or
/opt/dialogic/common/osconfig (Software 10.5.1 +)
```

2. Transfer the script Inimg to /home/excelsw/ftpBuilds.
3. From the /home/excelsw/ftpBuilds directory, run the Inimg script

```
$/Inimg
```

4. Follow the prompts and enter the version of software to be loaded.
5. Script will create a link between a common name img1004\_id0106.bin and the name of the software you would like to load.
6. Execute an ls -la command to verify the link gets created. See Link below

To confirm the link has been created, type:

```
$ls -la
```

Response:

```
lrwxrwxrwx 1 root root 27 Jun 21 09:27 img1004_id0106.bin ->
img1004_ver1050123_id0106.bin
```

## Create link using ln -sf command. (Manually)

1. From the /home/excelsw/ftpBuilds directory, enter the command below:

```
ln -sf img1004_ver1050123_id0106.bin img1004_id0106.bin
```

To confirm the link has been created, type:

```
ls -la
```

Response:

```
lrwxrwxrwx 1 root root 27 Jun 21 09:27 img1004_id0106.bin ->
img1004_ver1050123_id0106.bin
```

Verify that the link created points to the correct bin file.

## Create dhcpd.conf file

1. As Super User, create the dhcpd.conf file. Run the dhcpd file creation script located in one of the following directories:

/opt/cantata/common/osconfig (Software 10.3.x to 10.5.0)  
or  
/opt/dialogic/common/osconfig (Software 10.5.1 +)

**#!/xldhcp**

NOTE: You can also create the Linux default dhcpd.conf file manually. See [Sample dhcpd.conf File](#).

2. Enter values when prompted as appropriate for your configuration. You will be prompted for the following information: [factory defaults shown in **bold**]

Router/Default Gateway IP Address: [**192.168.0.1**]  
Router/Default Gateway Subnet Mask: [**255.255.255.0**]  
Subnet IP Address: (Router/Default Gateway IP Address - 1)  
[**192.168.0.0**]  
FTP Server IP Address: (This PC IP Address) [**192.168.0.100**]  
How many IMG systems are being configured? [**1**]  
T1 or E1 IMG (t/e)? [**t**]  
CODEC Profile Selection  
1 = LBR  
2 = LBR + iLBC  
3 = LBR + iLBC + wireless  
**[NOTE: You must have a license for wireless codecs. You must also set host flags accordingly (see Vocoder Information)]**  
Enter CODEC profile? [**2**]  
IMG(CTRL0)[1] IP Address: [**192.168.0.102**]  
IMG(CTRL0)[1] MAC Address: (MAC shown on IMG Label)  
[**00:20:1C:xx:xx:xx**]  
IMG(CTRL1)[1] MAC Address: (MAC shown on IMG Label +1)  
[**00:20:1C:xx:xx:xx+1**]

**NOTE:** Assign an IP address to the IMG that is on the same subnet as the GCEMS server. Once this IP address is set, the GCEMS will be able to connect to and configure the IMG

3. The following is the response after all prompts are complete:

```
dhcpd.conf created with 1 IMG's configured...
```

4. The file will be created in the /opt/cantata (dialogic)/common/osconfig directory.
5. Move the file to the /etc directory (mv dhcpd.conf /etc)

## Create the ntp.conf file.

1. As a Super User Create the ntp.conf file. Go to

```
/opt/cantata/common/osconfig (Software 10.3.x to 10.5.0)
or
/opt/dialogic/common/osconfig (Software 10.5.1 +)
```

2. Run the ntp configuration script:

```
#!/xlnntp
```

3. Enter IP Address and Subnet mask when prompted as appropriate for your configuration.
4. Move the ntp file to the /etc directory. (`mv ntp.conf /etc`). See Sample ntp.conf File.

## Start the services nfs, vsftpd, dhcpd, and ntp

1. As a Super User, start all the services and configure them to restart when GCEMS server is rebooted. Enter the following commands to start the nfs server

```
#!/sbin/service nfs start (Start the nfs service)
#!/sbin/service nfs status (Verify whether nfs is running or not)
#!/sbin/chkconfig nfs on (Configure nfs service to restart after a reboot of GCEMS)
#!/sbin/chkconfig nfs --list (Verify that runlevels 3,4 and 5 are all on.)
```

```
Example: nfs          0:off  1:off  2:on   3:on   4:on   5:on   6:off
```

2. Enter the following commands to start vsftpd service

```
#!/sbin/service vsftpd start (Start the vsftpd service)
#!/sbin/service vsftpd status (Verify whether vsftpd is running or not)
#!/sbin/chkconfig vsftpd on (Configure vsftpd service to restart after a reboot of GCEMS)
#!/sbin/chkconfig vsftpd --list (Verify that runlevels 3,4, and 5 are all on.)
```

3. Enter the following commands to start dhcpd service

```
#!/sbin/service dhcpd start (Start the dhcpd service)
#!/sbin/service dhcpd status (Verify whether dhcpd is running or not)
#!/sbin/chkconfig dhcpd on (Configure dhcpd service to restart after a reboot of GCEMS)
#!/sbin/chkconfig dhcpd --list (Verify that runlevels 3,4, and 5 are all on.)
```

4. Enter the following commands to start ntp service

```
#!/sbin/service ntp start (Start the ntp service)
#!/sbin/service ntp status (Verify whether ntp is running or not)
#!/sbin/chkconfig ntp on (Configure ntp service to restart after a reboot of GCEMS)
#!/sbin/chkconfig ntp --list (Verify that runlevels 3,4, and 5 are all on.)
```

5. Once these services are running and the IMG software build is available the software can be downloaded. See [IMG 1004-Downloading System Software](#)

### CRON Jobs

The IMG includes a crontab that manages GCEMS processes. This crontab runs automatically when the GCEMS is started (StartGCEMS), and stopped when the GCEMS is stopped (StopGCEMS). This file should not be edited.

There is a user crontab where you can add your own cron jobs for such tasks as file management or CDR management.

The file is located at:

`/opt/cantata/common/cron/usercron` (Software 10.3.x to 10.5.0)

or

`/opt/dialogic/common/cron/usercron` (Software 10.5.1 +)

This crontab runs automatically when the GCEMS is started, and stopped when the GCEMS is stopped. To stop a service, comment it out or delete it from the file and then start the GCEMS again (StartGCEMS).

## IMG 1004 - Downloading System Software - IMG1004

### Topic Location:

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Procedure:

1. Once all services are running and the IMG 1004 software build is available and installed on GCEMS server, power on the unit by toggling the power switch on the rear Power Module to 1(ON).
2. The IMG 1004 will now get the software load from the GCEMS server. The IMG 1004 utilizes the LED's on the front panel to display different aspects of the boot sequence. As the IMG 1004 goes through its boot process the LED's will indicate what part of the boot process the IMG 1004 is checking and if any problems occurred. When the LED's go through the **Download Complete** state shown in the table below, then software has completed its download. Once the download is complete the LED's will change to the status of each respective aspect and is ready for configuration. See the Front Panel Status LED's link for more information on LED status during the booting process

IMG 1004 Display	Power	Alarm	Timing	ENET 0	ENET1	Span 0	Span 1	Span 2	Span 3
Download Complete	Status	Solid Green	Status	Status	Status	Solid Green	Solid Green	Solid Green	Solid Green
System Software Complete	Status	Status	Status	Status	Status	Status	Status	Status	Status

3. If the above steps do not happen and the IMG 1004 will not load software see the Troubleshooting section below.

### Troubleshooting

If the software load does not transfer to the IMG 1004, check the following:

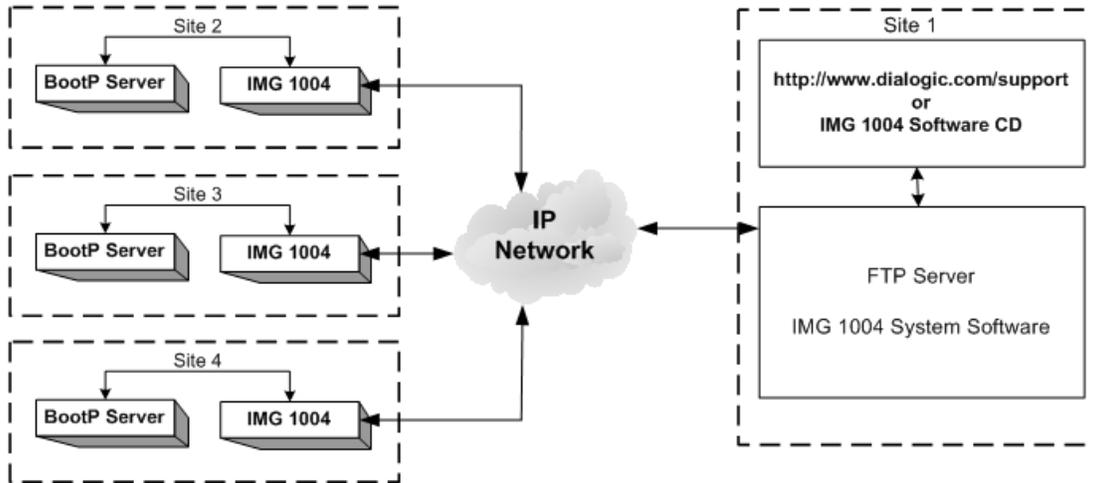
- Verify that the Linux firewall is disabled.
- Verify that DHCP and VSFTP services are running.
- Verify that the etc/dhcpd.conf file is correct
- Verify that the switch bin file is in the correct location (*/home/excelsw/ftpBuilds*).
- Verify that the link to the switch bin created in */home/excelsw/ftpBuilds* is correct.

Example: `img1004_id0106.bin -> img1004_ver1050xxx_id0106.bin`

**Note:** Script Tool `Inimg` can be used to create this link.

## Diagram

The following illustration shows the transfer of IMG 1004 System Software using FTP from an FTP server to each IMG with a local BootP Server.



### Next Task:

[Starting GateControl EMS](#)

## Starting GateControl EMS

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
-or-

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### Overview:

The procedure below will explain how to start the GCEMS application. At this point, the files IMG\_10.5.x.xxx.bin and IMGUserInterface\_10.5.x.xxx.bin files have been transferred to the GCEMS server and have been installed. There are two ways to start the GCEMS and ClientView processes on the GCEMS server. The first way is by using the icons on the desktop if access to the Linux server is allowed through VNC or some other remote desktop application. The second method is used if remote access to the desktop is not allowed and access to the server is accomplished through something like an SSH telnet session.

### Related Topics

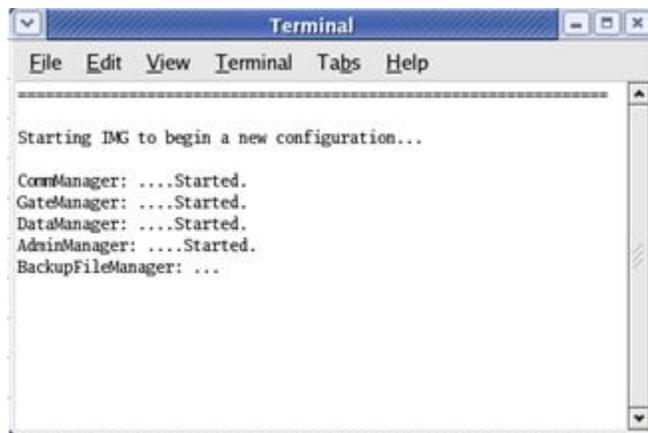
[GCEMS Installation Script](#)

### Using ICONS on Desktop.

1. Login to the GCEMS server as user excelsw.

```
username: excelsw  
password: excelsw
```

Once logged into the server, doubleclick on the StartGCEMS icon on the desktop. A screen like below will appear and all the processes will start automatically. To configure the IMG open ClientView and start a new configuration by either using the Configuration Wizard or load an existing .csa file and allow ClientView to configure the IMG. See [Starting ClientView](#)



```
Terminal  
File Edit View Terminal Tabs Help  
-----  
Starting IMG to begin a new configuration...  
ComManager: ...Started.  
GateManager: ...Started.  
DataManager: ...Started.  
AdminManager: ...Started.  
BackupFileManager: ...
```

## Installation and Setup

2. If however the GCEMS had already been controlling the IMG(s) there will be a system.cfg file located in

/opt/cantata/common/config (Software 10.3.x - 10.5.0)

or

/opt/dialogic/common/config (Software 10.5.1 +)

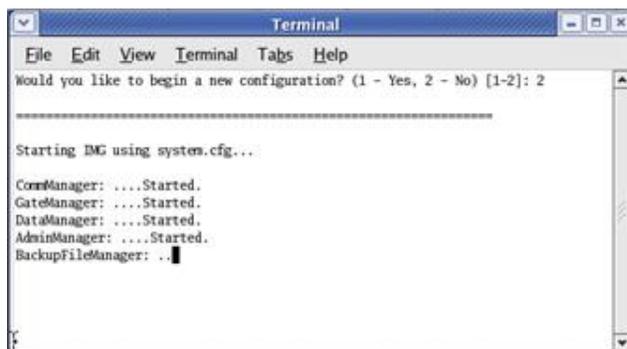
and the start script will ask "**Would you like to begin a new configuration?**" See screen capture below.



3. If you select Yes (1), the GCEMS will start its processes without creating a connection to any IMG(s). After starting ClientView, you will have the option to either start a new configuration with the Configuration Wizard or load an existing .csa file and allow ClientView to configure the IMG.

**NOTE: When loading a configuration from the .csa file, the IMG(s) in the configuration will be reset by the GCEMS to apply the configuration fully from startup. This method is executed when the GCEMS software is being upgraded since the IMG software is typically upgraded at the same time.**

4. If you select No (2), GCEMS will inform you that it is starting using the system.cfg file. The GCEMS will query the IMG(s) in the configuration and check the status of their configuration tags. If any Tags are cleared the GCEMS will automatically configure the IMG with the settings in the existing system.cfg file. This is the method to use when restarting the GCEMS and you do not want to impact Call Processing on the IMG(s). See Below.



5. GCEMS is now started. Verify that all processes are running by entering the following command:

```
$ ps -ef |grep Man
```

You should see the following output showing all the processes running for GCEMS

```
[excelsw@img2-dtran ~]$ ps -ef|grep Man
excelsw 24862      1  0 15:58 ?        00:00:00 ./ComManager
excelsw 24872      1  0 15:59 ?        00:00:00 ./GateManager -q
excelsw 24882      1  0 15:59 ?        00:00:03 ./DataManager
excelsw 24929      1  0 15:59 ?        00:00:01 /opt/cantata/installs/IMG_10.3.3
.229/jre/bin/java com.zerog.lax.LAX /opt/cantata/IMG/GateControlEMS/bin/.AdminM
anager.lax /tmp/env.properties.24929
excelsw 25039      1  0 15:59 ?        00:00:00 ./BackupFileManager
excelsw 25460 21886  0 16:08 pts/3    00:00:00 grep Man
[excelsw@img2-dtran ~]$
```

## Starting GCEMS through Telnet Session or using Terminal

1. Login to the GCEMS server as user excelsw.

username: **excelsw**  
password: **excelsw**

2. To start the GCEMS processes through Telnet or Terminal, go to:

/opt/cantata/IMG/GateControlEMS/bin (Software 10.3.3 to 10.5.0)  
or  
/opt/dialogic/IMG/GateControlEMS/bin (Software 10.5.1 +)

folder. In each you can find the StartGCEMS file. Execute the following command.

```
$ ./StartGCEMS
```

3. At this point GCEMS will begin the starting process. All the screen captures above apply when starting GCEMS through telnet or terminal program. The screen capture you will see will depend on whether the system has been configured previously or not.
4. Once GCEMS has been started, verify all the processes have started also by executing **ps -ef|grep Man** command shown above.

## Next Task

[Starting ClientView](#)

## Starting ClientView

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or  
IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

**NOTE:** EventView will start automatically when you start ClientView.

### To start ClientView and connect to the IMG and perform the following steps:

1. Launch ClientView one of two ways shown below:

#### From Linux:

Double Click on the "IMG ClientView" icon on the desktop **-or-** from a terminal window enter `./ClientView` command. This command can be entered from either of the directories shown below, depending on software version being used.

`opt/cantata/IMG/IMGUserInterface/ClientView` (Software 10.3.X to 10.5.0)  
or  
`opt/dialogic/IMG/IMGUserInterface/ClientView` (Software 10.5.1 +)

`$./ClientView`

#### From Windows®

1. Click the ClientView icon on your Desktop **-or-** Click on the ClientView exe file located at either

`C:\Program Files\Cantata\IMGUserInterface\ClientView` (Software 10.3.x to 10.5.0)  
or  
`C:\Program Files\dialogic\IMGUserInterface\ClientView` (Software 10.5.1 +)

2. When the About ClientView window appears, click **CLOSE**.
3. When the Client Socket window appears, enter the following:

**Username:** admin  
**Password:** admin (or new password if you changed)

#### Host Name or IP Address:

This is the IP Address of the GCEMS Server to which you are connected. If ClientView is running on the EMS server, leave the default (localhost).



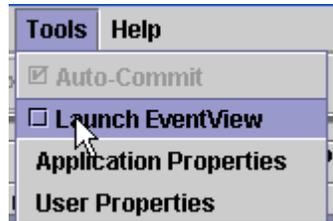
Client Socket	
Username:	admin
Password:	*****
Host Name or IP Address:	localhost
Port:	2624
OK Cancel	

4. Click OK button. EventView will automatically be started.

5. You are now connected to the GCEMS Server and are ready to use ClientView. To access the On-line Help for detailed configuration information go to the Help Menu within ClientView and select Open Help.

### Restarting EventView

If EventView is closed and you would like to restart it, you can do so from the menu-bar in ClientView select *Tools > Launch EventView*.



## Configuring Remote Desktop

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

Dialogic Technical Support uses VNC to allow its support engineers the ability to work on customer issues. Not being able to access ClientView to see what the customer is seeing can limit the ability of Dialogic Technical Support to provide input or even diagnose issues.

### VNC (Virtual Network Computing) Access:

- VNC is currently part of the Red Hat 3.0, 4.0, and 5.0 ES Operating System.
- VNC allows the user and Dialogic Technical Support personnel to work together as the connection is shared.
- VNC uses known ports so firewalls can be configured to only allow VNC connections from Dialogic's IP address, providing for security but still allowing for remote help. Please these ports open for access.

### Overview of VNC on GCEMS server

To acquire access to the GCEMS server, there are two applications that need to be installed and enabled. The first is the VNC server. This server is installed with the Linux Red Hat installation and once installed needs to be enabled or started when VNC access is warranted. The second application is the VNC viewer. The VNC viewer is a client of the VNC server and allows support personnel to log into the server. The VNC viewer is normally installed on a Windows®-based machine. The viewer allows access to ClientView from a Windows® remote client. For more information on VNC, see <http://www.realvnc.com>

### Linux (VNC server)

If the GCEMS server has been purchased from Dialogic, you can allow remote access to your GateControl EMS Server by performing the following procedure. If you have installed Linux on your own server, then install VNC and perform this procedure.

1. The VNC server is loaded on the GCEMS server but is not started unless the next few steps are accomplished
2. On the GCEMS server go to /home/.vnc
3. Within .vnc folder is a file named xstartup. Edit the file xstartup using vi editing or gedit. Un-comment the following lines

```
#unset SESSION_MANAGER  
#exec /etc/X11/xinit/xinitrc
```

4. To start VNC server, enter the following command below. If this is the first time you are starting VNC you will be asked for a password. Enter **excelsw** for password. Below is the command to start VNC server

```
$ vncserver :1
```

5. To verify the server is running enter one of the following commands below.

```
$ /sbin/service vncserver status  
or  
$ ps -ef|grep vnc
```

6. Once VNC server is started you can log into VNC server through a VNC viewer. Follow steps below to load the VNC viewer on a PC running Windows®-based Operating system.

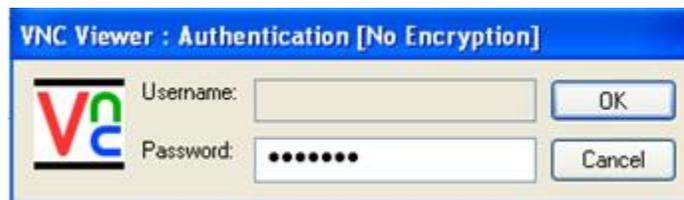
## Loading/Running VNC on PC running Windows® Operating System

The VNC Client is installed on a separate PC. Below is how to install on a PC running Windows® operating system

1. Download a copy of the VNC client viewer to your PC from the site:  
<http://www.realvnc.com/download.html>
2. Run VNC Viewer by double clicking on the VNC icon.
3. In the window that appears, enter the IP Address of GCEMS server followed by :1



4. Select OK and if the VNC Viewer connects then a password will be prompted. Enter the password **excelsw**.



5. At this point the VNC Viewer will connect to the server and a view of the GCEMS desktop will appear. You can now work in the Linux Environment as an excelsw user

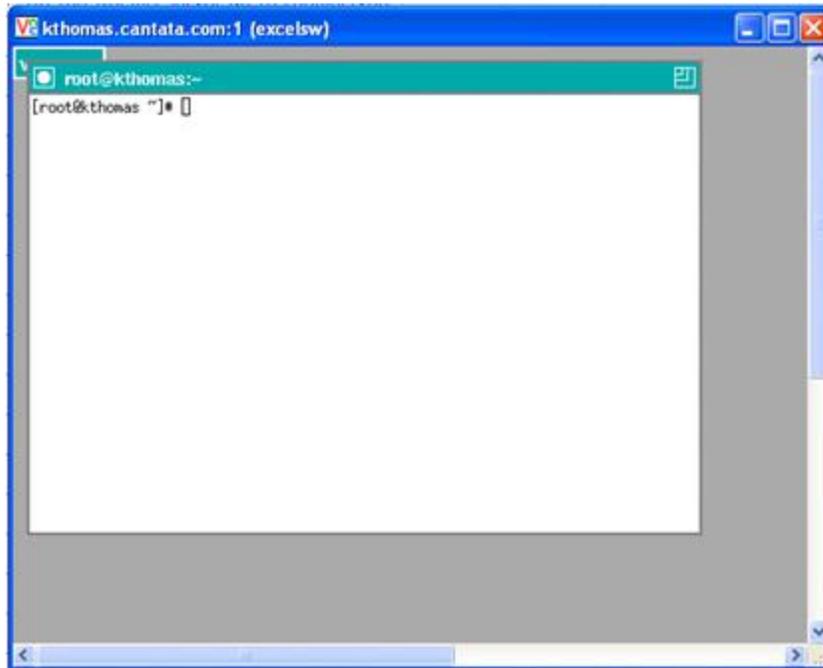
## Troubleshooting:

Use this troubleshooting section to try and diagnose any problems that could arise

### Scenario 1:

#### **PROBLEM:**

1. When Connecting to VNC server through VNC Viewer the following screen appears:



#### **SOLUTION:**

This is an indication that the VNC Server was initially started as a root or super user and you are trying to connect using the excelsw password. To fix the problem execute the following steps:

- A. Login to the GCEMS server as excelsw user.
- B. Become a Super User by entering the **su** command and entering the root password **excel2**
- C. Verify the vncserver is running as root by entering the **ps -ef|grep vnc** command. This will show the vncserver running as root in the response.
- D. If the vncserver is running as root you will need to kill the process. Enter the command **vncserver -kill :1** to kill the vncserver process as root user
- E. Logout of Super User mode by entering the **exit** command
- F. As excelsw user start the vncserver process by entering the **vncserver :1** command
- G. Verify the vncserver is now running as excelsw user by entering the **ps -ef|grep vnc** command.
- H. Retry logging into vncserver through the VNC Viewer

## Scenario 2:

### **PROBLEM:**

2. Cannot logon to VNC server through VNC Viewer. Get **unable to connect to host** error message

### **SOLUTION:1**

- A. Is vncserver :1 running?
  - i. Logon to GCEMS and as an excelsw user enter the following command and verify vncserver is running  
**\$ps -ef|grep vnc**
  - ii. If vncserver is not running, enter following command to start vncserver  
**\$vncserver :1**

### **SOLUTION:2**

- A. Is vncserver running as :1 or something other than :1
  - i. Logon to GCEMS and as an excelsw user enter the following command and verify vncserver :1 is running  
**\$ps -ef|grep vnc**
  - ii. If vncserver is running on something other than :1 then kill the other process and start :1 process  
**\$vncserver -kill :2**  
**\$vncserver :1**

## Scenario 3:

### **PROBLEM:**

3. On a reboot of GCEMS server the vncserver process does not restart automatically.

### **SOLUTION:**

- A. For security reasons VNCserver does not restart on a reboot of the GCEMS server. However if your network is secure you can follow the next few steps and configure vncserver to restart after a reboot of GCEMS server.
- B. Open a terminal on GCEMS and go to /etc/sysconfig
- C. Using a text editor, edit the vncservers file as shown below:
  - i. Uncomment the line VNCSERVERS="1:myusername"
  - ii. Change the line in previous step to VNCSERVERS="1:**excelsw**"
  - iii. Save and close
  - iv. Enter the following command to edit the runlevel  
**\$/sbin/chkconfig vncserver on**
  - v. Verify that runlevels 3 4 and 5 are all on by entering the following command  
**\$/sbin/chkconfig vncserver --list**  
  
vncserver 0:off 1:off 2:on 3:on 4:on 5:on 6:off
  - vi. vncserver will now start on a reboot of GCEMS

## Miscellaneous Information

### Shared Connection

With RealVNC, two people can connect to the same GCEMS and both can have monitor/configure access. This gives the support personnel the ability to configure a system while the customer watches on their PC. To be able to accomplish this **both** users must enable this option on the VNC Viewer application. To allow another person to connect and view the same Xwindow, you must enable the Shared Connection option. See Below.

1. Open VNC Viewer application
2. Select the **Options** button
3. Select the **Misc** tab.
4. Enable the **Shared Connection (do not disconnect other viewers)** option.
5. Save the new configuration so when the VNC Viewer is opened it will always open with the Shared connection enabled

### Configuring Display:

Starting the VNC Server without the geometry setting will default the window size to 1024x768. Use the geometry command (-geometry) to set the size of the VNC window. The setting will need to be the same size or smaller than the resolution of the Windows®-based PC on which are running the client. Below are some example settings.

```
#####
# Geometry settings
# Windows®: 1024x768 Linux: 1000x710
# Windows®: 1280x1024 Linux: 1260x960
#####
```

**Example:** `vncserver -geometry 1260x960 :1`

### Helpful Commands:

The following commands can be accomplished as an excelsw user

Command:	Description:
<code>\$ vncserver :1</code>	Start vncserver as :1
<code>\$ vncserver -kill :1</code>	Kill the vncserver instance :1
<code>\$ ps -ef grep vnc</code>	Search for all processes running with "vnc" in them
<code>\$ /sbin/service vncserver status</code>	Check to see whether vncserver is running
<code>\$ /sbin/chkconfig vncserver --list</code>	Display the runlevel of vncserver

The following commands can be accomplished as a root user

Command:	Description:
<code># /sbin/service vncserver restart</code>	Restarts vnc service through terminal
<code># /sbin/service vncserver stop</code>	Stops vnc service through terminal
<code># /sbin/service vncserver start</code>	Starts vnc service through terminal
<code># /sbin/service vncserver restart</code>	Stops and then restarts vncserver
<code># /sbin/service vncserver status</code>	Check to see whether vncserver is running
<code># /sbin/chkconfig vncserver on</code>	Set runlevel on vncserver
<code># /sbin/chkconfig vncserver --list</code>	Display the runlevel of vncserver

NOTE: vncserver is located at `/etc/init.d/vncserver`

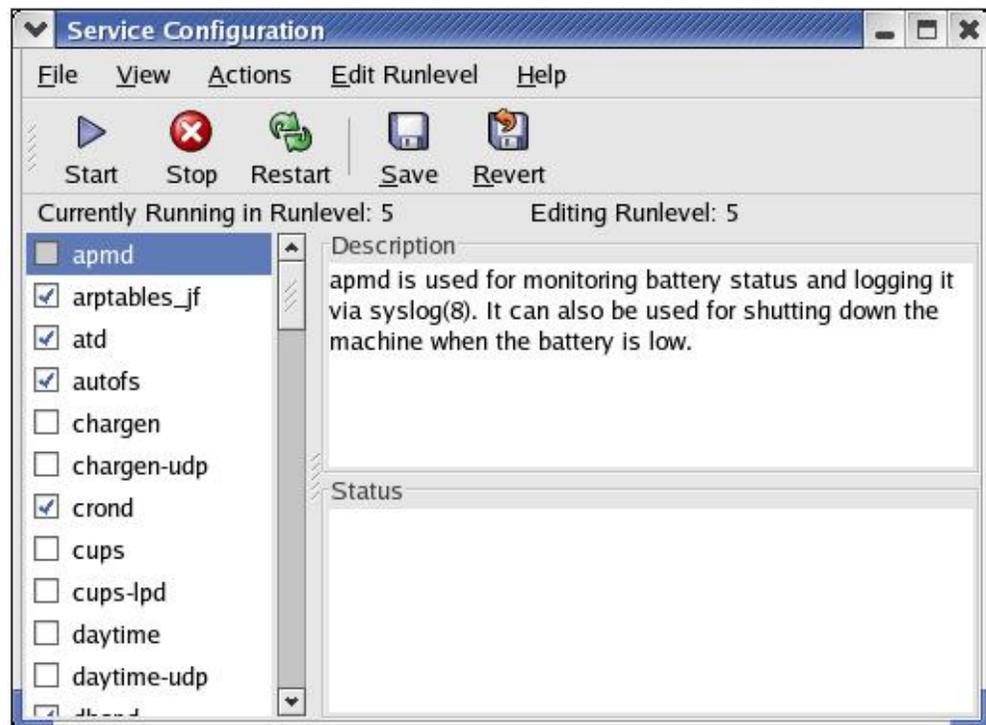
## Selecting/De-selecting Linux Services

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

1. A service such as dhcpd can be started or stopped using the Service Configuration screen. To stop or start a service, login as Super User.
2. Go to Main Menu >> Server Settings >> Services
3. Check or un-check the desired services for each run level (specify run levels 3, 4, and 5).
4. Start, stop, or re-start the desired services.
5. Store the settings by pressing the **SAVE** button.
6. Logout as Super User and Login as user excelsw.



## Installing ClientView for Windows®

### **Topic Location:**

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### **Note on Re-installation**

If you are re-installing ClientView, make sure that you close ClientView and stop any IMG processes that are running.

### **Steps**

To install ClientView on a PC running Windows®, perform the following steps.

1. Transfer the IMG User Interface software file to the PC.
2. Go to the location where you stored the file and Double Click the IMGUserInterface.exe file. This will launch the Install-Anywhere installation wizard.
3. Accept the defaults as each screen appears.

**NOTE:** EventView and AdminView are automatically installed with ClientView.

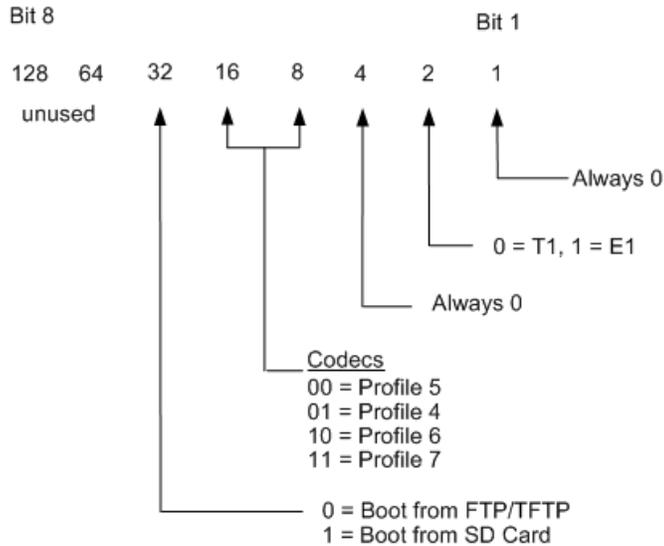
## Setting Host Flags

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

The following diagram shows the Host flag settings in the *dhcpd.conf* file located in /etc and the *bootup.cfg* located on the SD card.



Codec	Profile 4	Profile 5	Profile 6	Profile 7
G.711 alaw	Not Supported	Yes	Yes	Yes
G.711 ulaw	Not Supported	Yes	Yes	Yes
G.723 5.3 kbps	Not Supported	Yes	Yes	Yes
G.723 6.3 kbps	Not Supported	Yes	Yes	Yes
G.729	Not Supported	Yes	Yes	Yes
G.729E	Not Supported	Yes	Yes	Yes
iLBC 20 ms	Not Supported	Not Supported	Yes	Yes
iLBC 30 ms	Not Supported	Not Supported	Yes	Yes
AMR	Not Supported	Not Supported	Not Supported	Yes
EVRC	Not Supported	Not Supported	Not Supported	Yes
GSM - FR Static	Not Supported	Not Supported	Yes	Yes
GSM - FR Dynamic	Not Supported	Not Supported	Yes	Yes
G.726-32/G.721 Static	Not Supported	Yes	Yes	Yes
G.726-32/G.721 Dynamic	Not Supported	Yes	Yes	Yes

## Installation and Setup

### **Calculating the BootFlag:**

The boot flag is calculated by adding values above based on desired system attributes.

#### TDM

If system is used for T1 only --> Add 0

If system is used for E1 only --> Add 2

#### Boot

If booting from an FTP Server --> Add 0

If booting from an SD Card --> Add 32

#### Example: Booting from SD Card + E1 system

Booting from SDCard = 32

Configuring E1 System = 2

Using Profile 6 = 16

BootFlag for this system is  $32 + 2 + 16 = 50$

For a complete List of codecs that are currently supported and a short description of each codec, click on the Supported Codecs link

## Sample dhcpd.conf File - IMG 1004

**Topic Location:** IMG1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

The following is a sample dhcpd.conf file. If you do not have access to the xldhcp script, you must modify this file manually. Modify the lines in **bold** according to your particular network settings.

```
#####
# File: dhcpd.conf
# Generated by: xldhcp Revision: 1.2
# Dialogic Corporation, Inc. 05/16/06_16:21:23
# Cantata Support @ 508-862-3366 techsupport@Cantata.com
#####
ddns-update-style ad-hoc;
# which logfile group... log to /var/log/messages
LogFile = messages;
allow bootp;
# declare global vender options
option Host_1004_Flag code 134 = signed integer 32;
# 0 = FTP, T1, AB Polls disabled, CODEC Profile 5 LBR
# 2 = FTP, E1, AB Polls disabled, CODEC Profile 5 LBR
# 16 = FTP, T1, AB Polls disabled, CODEC Profile 6 LBR+iLBC
# 24 = FTP, T1, AB Polls disabled, CODEC Profile 7 LBR+iLBC+wireless
# Configured Host_1010_Flag = 0
# option routers is the same as the default gateway
option routers 192.168.1.1;
option subnet-mask 255.255.255.224;
# subnet IP address usually default gateway address minus 1
subnet 192.168.1.0 netmask 255.255.255.224
{
  host IMG_CPU1_0
  {
    hardware ethernet 00:20:1c:00:00:00;
    fixed-address 192.168.1.5;
    # ftp server name (IP Address of the LINUX PC running FTP)
    next-server 192.168.1.100;
    # IMG bin file (software load)
    filename "ftpBuilds/img1004_id0106.bin";
    option Host_1004_Flag 0;
  }
}
```

## Assigning ClientView Users

**Topic Location:** Administration > User Management

Unless you specifically assign user privileges, anyone can access the GCEMS with full Administrative Privileges using:

UserName: *admin*

Password: *admin*

### Procedure

Passwords and roles can be assigned to individual users who may have access to the EMS. Below is procedure on how to do this.

1. Login to AdminView.
  - a. Either double click on the AdminView icon on Linux Server desktop or if using a terminal go to one of the following directories.  
  
opt/cantata/IMG/GateControlEMS/bin (Software 10.3.3 to 10.5.0)  
or  
opt/dialogic/IMG/GateControlEMS/bin (Software 10.5.1 +)
  - b. Execute the following command to start AdminView from Terminal Window  
  
**\$. /AdminView**
  - c. Login as an Administrator by using the UserID and Password shown below.  
  
User ID: **admin**  
Password: **admin**
2. To limit access to Admin functions, change the Admin Password. See below.
  - a. Type **chpwd** and press <ENTER> key.
  - b. Enter the Administrator User ID = *admin* Hit <ENTER> key
  - c. Enter a new password and press <ENTER> key.
  - d. Re-enter the new password and press <ENTER> key.
3. To see a list of commands, enter "help" into the AdminView terminal.
4. To Add a User and assign roles:
  - a. Type *adusr* and press <ENTER> key.
  - b. Enter User ID and press <ENTER> key.
  - c. Enter a password for the user and press <ENTER> key.
  - d. Confirm the password and press <ENTER> key.
  - e. Enter values for the roles to assign to the user.
    - 1 - Administrator
    - 2 - Basic
    - 3 - Configuration
    - 4 - Provisioning
    - 5 - Monitoring
  - f. Repeat steps a-e for each user.
  - g. Quit

**Help**

For a list of commands, type `help`

**More Information**

For more detailed information on Administering User Privileges, see Administering User Privileges in the On-line Help.

## Changing or Deleting GCEMS and User Interface

### **Topic Location:**

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
or

IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

### **Changing GCEMS and User Interface Version**

To change to a different version of GCEMS and ClientView/EventView, use the script tool *changeGCEMSVersion* located in one of the following directories below depending on software version:

```
/opt/cantata/installs (Software 10.3.3 to 10.5.0)  
or  
/opt/dialogic/installs (Software 10.5.1 +)
```

The version of software must have already been previously installed for this script to work. The script changes the links to the executables in the `/opt/cantata/IMG` directory or `/opt/dialogic/IMG` (Software 10.5.1+).

### **Deleting GCEMS Version**

To change to a different version of GCEMS, ClientView and EventView, use the script tool *deleteGCEMSVersion* located in:

```
/opt/cantata/installs (Software 10.3.3 to 10.5.0)  
or  
/opt/dialogic/installs (Software 10.5.1 +)
```

The version of software must have already been previously installed for this script to work. This script when run will delete the specified version of GCEMS and ClientView/EventView that is stored in `/opt/cantata/installs` directory or `/opt/dialogic/IMG` (Software 10.5.1+).

## Recommended Linux Configuration and OS Settings

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG1010-Linux Red Hat Installation  
 -or-  
 IMG 1004-Installation and Setup Guide > IMG1004-Linux Red Hat Installation

### Partitioning

The tables below display the partitioning configured on the Dell Servers that can be purchased as an option when purchasing the IMG. There are two tables shown below. The first is for customers using Linux Red Hat Enterprise 3.0 or 4.0 The second table is for customers using Linux Red Hat 5.0 (Software 10.5.0 ER2 +)

**NOTE: GCEMS does not support 64 bit versions of Red Hat Linux**

Linux Red Hat Enterprise 3.0 and 4.0	
Partition	Recommended Size (MB) Hard Drive = 80 GB
/	(remaining balance)
boot	1024 MB
swap	4096 MB
usr	10240 MB
home	12301 MB
opt	23234 MB
var	10240 MB

Linux Red Hat Enterprise 5.0	
Partition	Recommended Size (MB) Hard Drive = 160 GB
/	200 MB
boot	2 GB
swap	4.2 GB
usr	28.8 GB
home	32 GB
opt	64 GB
var	28.8 GB

### Settings

- Select default boot loader
- Enter Network Configuration Parameters
- Disable Linux Firewall
- Select your Additional Language Support
- Set the Time Zone selection
- Set System Root Password (Super User is root)
- Dialogic Defaults are:
  - user: root
  - password: excel2

### Linux Packages

At the very least install the packages in the table below. It is recommended that when installing Linux that the choice to select all packages be chosen. This will install all Linux Packages and will use approximately 7 Gigabytes of Hard Drive space

Desktops	X Windows SYSTEMS GNOME DESKTOP ENVIRONMENT KDE DESKTOP ENVIRONMENT
Applications	EDITORS ENGINEERING AND SCIENTIFIC GRAPHICAL INTERNET
Servers	Server Configuration Tools Windows® File Server FTP Server Network Servers (including freeradius) Legacy Network Server
Development	Development Tools
System	Administration Tools System Tools (including ethereal-gnome, and net-snmp-utils)

### Services

#### Required

The following Linux Services are required. Ensure that the corresponding boxes are checked for all run levels (3, 4, and 5). For help configuring services see [Selecting/De-selecting Linux Services](#).

- arptables if
- atd
- auth (installed at factory but not selected)
- autofs
- crond
- dhcpd
- dkms autoinstaller
- gpm
- irqbalance
- keytable
- mdmonitor
- microcode-ctl
- netfs
- network
- nfs
- nfslock
- ntpd
- portmap
- random
- rawdevices
- rhnsd
- sgi-fam
- sshd
- syslog
- vnc server (RealVNC installed at factory but not set to run)
- vsftpd
- xinetd

**Not Required**

The following Linux Services are not required. For superior IMG performance, it is advisable not to run them. During Linux Configuration, uncheck the corresponding boxes if they are checked. Set for all run levels (3, 4, and 5)

- apmd
- audit
- cups
- hpoj
- iptables
- iptables6
- irda
- isdn
- kudzu
- PCMCIA
- sendmail

## IP Security for IMG and GCEMS

### Topic Location:

IMG 1010-Installation and Setup Guide > IMG 1010-Software Installation and Setup  
 or  
 IMG 1004-Installation and Setup Guide > IMG 1004-Software Installation and Setup

To protect against denial of service attacks, the GCEMS (Linux server) and IMG Control IP can be placed behind a firewall for security. Should remote access to the GCEMS server be needed, a NAT, VPN, or other secure solution can be used for access to the server from the public internet.

**Following is a list of ports and protocols used by the IMG and the GCEMS server.**

- **The Ports in red would need to be opened in the firewall based on the recommendation above for remote access.**

### Connections between IMG and GCEMS

Port #	Description	Purpose
TCP: 20 & 21	FTP	<ul style="list-style-type: none"> <li>• Download IMG binary from GCEMS to IMG</li> <li>• Upload of software faults from IMG to GCEMS</li> </ul>
TCP: 23	Telnet	IMG debug access
UDP: 111	PortMap	Portmap is used to request a mount port. Usually for NFS or NIS. The port request is sent from the IMG to the GCEMS server. See <a href="#">PortMap Flow</a> .
UDP: 2049	NFS	<ul style="list-style-type: none"> <li>• Call tracing</li> <li>• Downloading Call treatments</li> <li>• Downloading routing &amp; translation tables</li> </ul>
UDP: 1812	Radius Authentication	Call authentication
UDP: 1813	Radius Accounting	Record Call Detail Records
TCP: 162	SNMP Network	Monitoring
TCP: 12610	GCEMS control	IMG Configuration and Provisioning
UDP: 123	NTP Network	Time Protocol
TCP: 1099	ClientView	ClientView Application (Only required when ClientView is running on a different machine from GCEMS)

### Connections to the GCEMS server

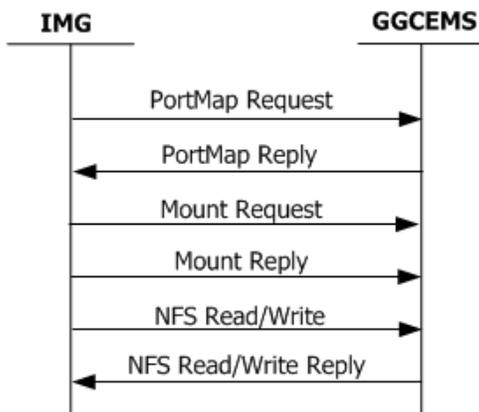
Port #	Description	Purpose	Connection from
<b>TCP: 22</b>	<b>SSH</b>	Remote access to GCEMS server	<ul style="list-style-type: none"> <li>Local support personnel</li> <li><b>Dialogic technical support</b></li> </ul>
<b>TCP: 5901</b>	<b>VNC</b>	Remote access to GCEMS server	<ul style="list-style-type: none"> <li>Local support personnel</li> <li><b>Dialogic technical support</b></li> </ul>
TCP: 80	HTTP	MRTG monitoring	Local support personnel
TCP: 12610	IMG Management	Connection to IMG	IMG
TCP: 2623	Remote ClientView	Connection from Remote Clientview to GCEMS	Remote ClientView
TCP: 2624	ClientView	GUI for Configuration & Provisioning	Local support personnel GCEMS server

### Connections between IMG's if running redundant SS7 or SS7 with remote IMG's

Port #	Description	Purpose	Connection from
UDP: 34867	SS7 Management	Internal SS7 communication between IMGs	IMG

### PortMap Request

- PortMap uses Port 111 and is used to request a mount port. Request is sent from IMG
- Mount uses the port returned in the PortMap response
- NFS uses port 2049





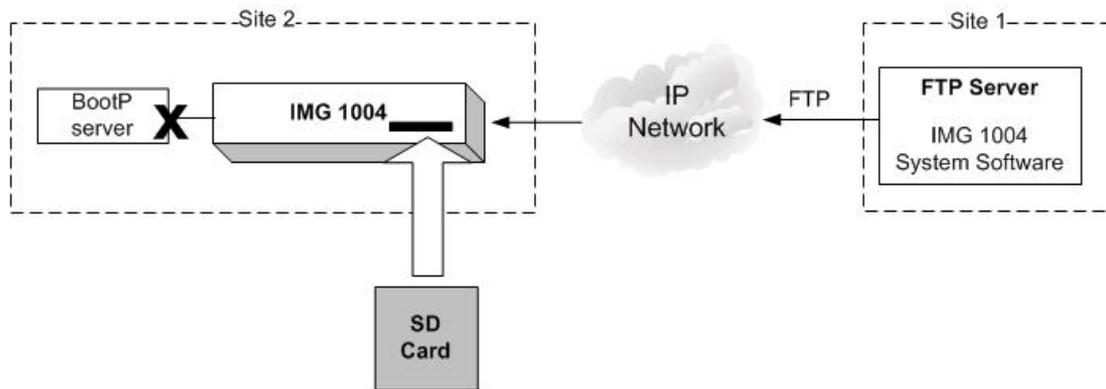
## Downloading System Software Using Boot File on an SD Card - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-SD Card

A BootP server is used to configure the following:

- IMG CTRL IP address
- subnet mask
- gateway address
- FTP server address
- FTP file name of the IMG system software

If a BootP server is not available but a remote FTP Server is available, the SD card can be used to configure the boot parameters so the IMG 1004 can retrieve the system software from the remote FTP Server. See Diagram Below.



### Bootup.cfg

Host Flag = Retrieve IMG 1004 System Software from FTP server  
Server Address = Your FTP Server address

## Steps

1. Insert the SD Card into an SD Writer connected to a PC.
2. On the SD Card is a file named bootup.cfg. Open this file.
3. Below is what the SD Card bootup.cfg information should look like.

```
#####  
#####  
# INSTRUCTIONS  
# 1. Edit values as required, as described below.  
# Change IP Address, Subnet Mask, and Gateway IP Address to the actual #values for the  
# IMG.  
# If you change the version of IMG System Software on the FTP Server #or the SD card,  
# make sure you change the System Software Filename #value.  
# Make sure Host Flag is set appropriately for your configuration and #Boot method  
#  
# Calculate boot flag by adding values based on desired system attributes  
# For a T1 system: add 0  
# For an E1 system: add 2  
#  
# To boot from a FTP Server: add 0  
# To boot from a SD Card: add 32  
#  
# For LBR codecs (512 ch/mod): add 0  
# For LBR + ILBC codecs (336 ch/mod): add 16  
# For LBR + ILBC + Wireless codecs (336 ch/mod): add 24  
#  
# An example host flag for a T1 system booting from the SD card with LBR + iLBC codecs  
# would = 48 (0+32+16)  
# Change Server Address to the actual address of the FTP server.  
# The Server Name is not used at this time.  
# 2. After editing this file: save file, remove SD card, insert SD card #in the IMG, power-up  
# the IMG.  
#  
# _____  
# IMG bootup configuration file  
# IP Address  
yiaddr=192.168.3.103  
# Subnet Mask  
subnet mask=255.255.255.0  
# Gateway Address  
giaddr=192.168.3.10  
# System Software Filename  
file=/excelsw/ftpBuilds  
# Host Flag  
host flag=0  
# Server Address for File transfer and SNTP operation.  
siaddr=192.168.1.100  
# Server Name (Optional, not currently used)  
sname=factorydefault  
#####  
#####
```

4. Any line beginning with the # symbol is a comment and is not processed by the IMG 1004. Below is the information the user will edit for use in its network
  - **yiaddr** --> IP Address of the IMG 1004 being loaded
  - **subnetmask** --> Subnet mask of the IMG 1004 being loaded
  - **giaddr** --> IP Address of the Gateway connected to the IMG 1004
  - **file** --> If using the SD card to supply boot information but loading the software from the FTP Server, the System Software Filename on the bootup.cfg file should be given a path to the IMG System Software file located on the ftp server. The default path is /excelsw/ftpBuilds or ftpBuilds/ as the IMG 1004 logs into the FTP server using the excelsw account.
  - **Host flag** --> The Host Flag informs the IMG of configuration details such as T1 or E1, Boot from SD card or Boot from FTP Server, and a few other configuration details. See Setting Host Flags.
  - **siaddr** --> IP Address of FTP server which provides the IMG 1004 System Software and NTP Server information
  - **sname** --> Optional, not currently used. Do not edit this
5. Change the Host Flag to "Retrieve IMG Build from SD Card".

Host Flag Values

32 = Boot from SD Card, T1 system

34 = Boot from SD Card, E1 system

**Example: The following is a T1 system booting from SD Card. Refer to the file Setting Host Flags to follow the example**

Boot From SD card = 32

T1 system = add +00

Host Flag Value = 32

The Host Flag for a T1 system booting from SD Card = 32

6. Edit the bootup.cfg file to reflect the new Host Flag value
7. Edit the System Software Filename in the bootup.cfg file to reflect the new software file being loaded. (Ex: file=/excelsw/ftpBuilds)
8. Edit the rest of the bootup.cfg file to reflect your network values.
9. Save the bootup.cfg file
10. Remove the SD card from the SD Writer.
11. Insert the SD card into the SD slot on the Front Panel of the IMG.
12. Power-up the IMG.
13. The IMG 1004 will go through a diagnostic check and then load software. See IMG 1004 - Front Panel Status LEDs for more information on the boot process.
14. Once the loading of software and configuring of network information is complete, the IMG 1004 will be ready to get configured

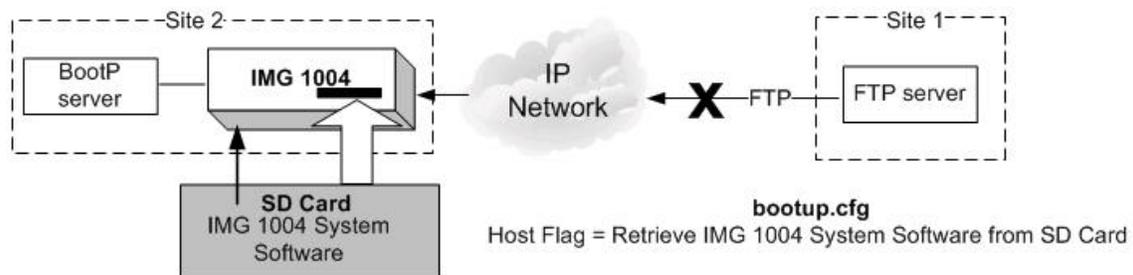
**Next Task**

[Starting GateControl EMS](#)

## Downloading System Software From an SD Card - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-SD Card

If the IMG 1004 does not have access to an FTP server, then the IMG 1004 System Software and IP information can be loaded through the use of an SD Card. The SD Card is a small memory card much like the memory cards used in digital cameras and other devices. The IMG 1004 has an SD card slot positioned on the right hand side of the front panel just below the USB port. The SD card holds the `bootup.cfg` file and the IMG 1004 System Software file. The procedure below will explain how to load the IMG 1004 System Software and IP addresses using just the SD Card.



### Steps

1. Insert the SD Card into an SD Writer.
2. Load the System Software File onto the SD Card or use [IMG 1004 - SD Card Remote Provisioning](#) Feature..
3. On the SD Card provided with the IMG 1004 is a file named `bootup.cfg`.

4. Below is what the SD Card *bootup.cfg* information will look like.

```
#####
#####
# INSTRUCTIONS
#1. Edit values as required, as described below.
# Change IP Address, Subnet Mask, and Gateway IP Address to the actual #values for the
IMG.
# If you change the version of IMG System Software on the FTP Server #or the SD card,
make sure you change the System Software Filename #value.
# Make sure Host Flag is set appropriately for your configuration and #Boot method
#
# Calculate boot flag by adding values based on desired system attributes
# For a T1 system: add 0
# For an E1 system: add 2
#
# To boot from a FTP Server: add 0
# To boot from a SD Card: add 32
#
# For LBR codecs (512 ch/mod): add 0
# For LBR + ILBC codecs (336 ch/mod): add 16
# For LBR + ILBC + Wireless codecs (336 ch/mod): add 24
#
# An example host flag for a T1 system booting from the SD card with LBR + iLBC codecs
would = 48 (0+32+16)
# Change Server Address to the actual address of the FTP server.
# The Server Name is not used at this time.
#2. After editing this file: save file, remove SD card, insert SD card #in the IMG, power-up
the IMG.
# _____
# IMG bootup configuration file
# IP Address
yiaddr=192.168.3.103
# Subnet Mask
subnet mask=255.255.255.0
# Gateway Address
giaddr=192.168.3.10
# System Software Filename
file=img1004_ver1050123_id0106.bin
# Host Flag
host flag=0
# Server Address for File transfer and SNTP operation.
siaddr=192.168.1.100
# Server Name (Optional, not currently used)
sname=factorydefault
#####
#####
```

## Installation and Setup

5. Any line beginning with the # symbol is a comment and is not processed by the IMG 1004. Below is the information the user will edit for use in their network
  - **yiaddr** --> IP Address of the IMG 1004 being loaded
  - **subnetmask** --> Subnet mask of the IMG 1004 being loaded
  - **giaddr** --> IP Address of the Gateway connected to the IMG 1004
  - **file** --> System Software Filename. If loading software from SD Card then this is the filename of the software being loaded. Load this file onto the SD Card.
  - **Host flag** --> The Host Flag informs the IMG 1004 of configuration details such as T1 or E1, Boot from SD card or Boot from FTP Server, and a few other configuration details. See Setting Host Flags.
  - **siaddr** --> IP Address of FTP server. Also used as an NTP server.
  - **sname** --> Optional, not currently used. Do not edit or problems may occur
6. Change the Host Flag to "Retrieve IMG Build from SD Card".

### Host Flag Values

32 = Boot from SD Card, T1 system

34 = Boot from SD Card, E1 system

Example: The following is a T1 system booting from SD Card. Refer to the file Setting Host Flags to follow the example

Boot From SD card = 32

T1 system = add +00

Host Flag Value = 32

The Host Flag for a T1 system booting from SD Card = 32

7. Edit the bootup.cfg file to reflect the new Host Flag value
8. Edit the System Software Filename in the *bootup.cfg* file to reflect the new software file being loaded. (Ex: img1004\_ver1050123\_0106.bin)
9. Edit the rest of the bootup.cfg file to reflect your network values.
10. Save the bootup.cfg file.
11. Remove the SD card from the SD Writer.
12. Insert the SD card into the SD slot on the Front Panel of the IMG 1004.
13. Power-up the IMG 1004.
14. The IMG 1004 will go through a diagnostic check and then load software. See Front Panel Status LEDs 1004 for more information on the boot process.
15. Once the loading of software and configuring of network information is complete, the IMG 1004 will be ready to get configured.

### Next Task

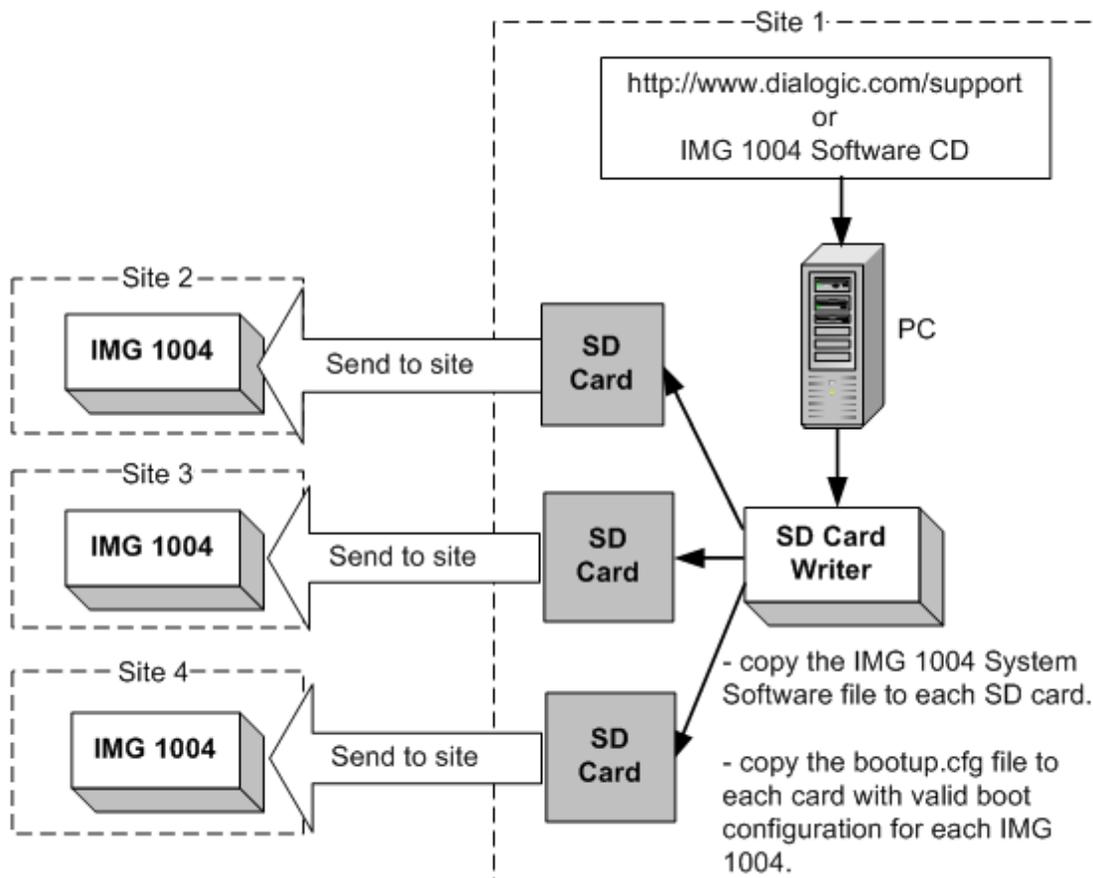
[Starting GateControl EMS](#)

## Distributing System Software Using an SD Card - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-SD Card

If you have remote IMG 1004's that cannot obtain a System Software upgrade using FTP or BootP, you can transfer the file to multiple SD cards and distribute the SD cards to each remote site. The bootup.cfg file on each SD Card can be edited using either an SD card reader or if working with software 10.5.0 + the Remote SD Card provisioning feature can be used.

For more information on remote provisioning of SD Card, see [IMG1004-SD Card Remote Provisioning](#).



## Default bootup.cfg Configuration File - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-SD Card

### # INSTRUCTIONS

#1. Edit values as required, as described below.

# Change **IP Address**, **Subnet Mask**, and **Gateway IP Address** to the actual values for the IMG 1004.

# If you change the version of IMG System Software on the FTP Server or the SD card,

#make sure you change the **System Software Filename** value.

# Make sure **Host Flag** is set appropriately for your configuration and Boot method

    # Calculate **Host Flag** by adding values based on desired system attributes

    # For a T1 system: add 0

    # For an E1 system: add 2

    #

    # To boot from a FTP Server: add 0

    # To boot from a SD Card: add 32

    #

    # For LBR codecs (512 ch/mod): add 0

    # For LBR + ILBC codecs (336 ch/mod): add 16

    # For LBR + ILBC + Wireless codecs (336 ch/mod): add 24

    #

    # An example host flag for a T1 system booting from the SD card with LBR + iLBC  
    codecs would = 48 (0+32+16)

# Change **Server Address** to the actual address of the FTP server.

# The **Server Name** is not used at this time.

#2. After editing this file: save file, remove SD card, insert SD card in the IMG, power-#up  
the IMG.

---

# IMG 1004 bootup configuration file

# IP Address

yiaddr=192.168.0.101

# Subnet Mask

subnet mask=255.255.255.0

# Gateway Address

giaddr=192.168.0.1

# System Software Filename

file=img1004\_id0106.bin

# Host Flag

host flag=0x20

# Server Address for File transfer and SNTP operation.

siaddr=192.168.0.100

# Server Name (Optional, not currently used)

sname=factorydefault

## SD Card Remote Provisioning - IMG 1004

**Topic Location:** IMG 1004-Installation and Setup Guide > IMG 1004-SD Card

### Overview

This feature provides a means for installing new versions of system software to IMG 1004 located at remote sites with no BOOTP server, by allowing remote access to the SD card on the IMG 1004. The SD Card is a small memory card much like the memory cards used in digital cameras and other devices. The IMG 1004 has an SD card slot positioned on the right hand side of the front panel just below the USB port. Prior to software version 10.3.x the only way to access and edit information on the SD Card would have been to physically go to the remote IMG 1004, pull the card out, insert it into an SD Reader, and edit the information on the SD Card. A new feature which has been implemented in software build 10.5.0 provisions the IMG 1004 as an FTP server instead of just an FTP client. This will give the user the ability to transfer files to and from the SD Card using the FTP utility. The FTP server functionality is disabled by default and would need to be enabled through ClientView in order for the remote provisioning to work.

### Related Topics:

[IMG 1004 - Downloading System Software Using a Boot File on an SD Card](#)

[IMG 1004 - Downloading System Software from an SD Card](#)

[IMG 1004 - Distributing System Software Using an SD Card](#)

[IMG 1004 - Default bootup.cfg File](#)

### Configuring Remote provisioning on SD card

**NOTE: To use the IMG 1004 as an FTP server the SD Card must be inserted into the SD Card socket. The IMG 1004 will have system software running on it which was originally loaded through use of the SD Card**

1. Within ClientView, under the IMG 1004 Physical node, right click and select **New FTP Server**. Commit This. Below is a screen capture of the FTP Server Pane

FTP Server Disable		
Property	As-Configured	User-Specified
FTP Server		Disable
FTP Connection Status		
Remote IP Address		

2. In order to enable the IMG 1004 as an FTP server, select enable in the drop down menu in the "FTP Server" field.

FTP Server Disable		
Property	As-Configured	User-Specified
FTP Server		Disable ▾
FTP Connection Status		Enable
Remote IP Address		Disable

## Installation and Setup

3. If someone has FTP'd to the IMG 1004 the "FTP Connection Status" field and the "Remote IP Address" field will update. See screen capture below. Notice the Remote IP address field. This is the IP address of the PC that the user is FTP'ing from.

FTP Server Enable		
Property	As-Configured	User-Specified
FTP Server	Enable	Enable
FTP Connection Status	Connected	
Remote IP Address	10.129.39.55	

4. At this point, files can be FTP'd to and from the IMG 1004. Below is an example of using FTP to change the version of software loaded on the SD card

### Procedure:

1. The following procedure will explain how to change the load on an SD Card and upgrade the IMG 1004 software. The procedure will assume that:
  - SD Card was previously used to load IMG 1004 software and the IMG 1004 is running with that software.
  - The FTP Server is configured and enabled in ClientView. See Steps 1-4 above

```
From a DOS or UNIX prompt
ftp <IP address of IMG1004>
User: excelsw
Password: excelsw
ftp>
```

**NOTE: FTP Applications such as WinSCP that use SFTP (Secure FTP) or SCP (Secure Copy) will not connect to the IMG 1004. Only the FTP Protocol is supported for transferring the files to the IMG 1004 SD Card.**

2. Once logged in, you can transfer the new updated IMG 1004 software file. Transfer this file as binary.

```
ftp> dir (dir command will show what is loaded on SD Card)
ftp> bin (Set mode to transfer file as binary)
ftp> hash (enable hash printing)
ftp> put img1004_<software version>_id0106.bin
(Transfer times could vary from 2 to 10 minutes depending
on server speed, memory size, etc.)
```

3. Verify the software file was successfully transferred by using the dir or ls command.

```
ftp> dir
```

3. Transfer the bootup.cfg file from the IMG 1004 with the SD Card to the PC.

```
ftp> dir (dir command will show what is loaded on SD Card)
ftp> ascii (Set mode to transfer file as ascii)
ftp> get bootup.cfg (Get copy of bootup.cfg from SD Card)
```

4. Modify the "file=" line on the bootup.cfg file just transferred. Verify the changes to this file are correct. Below is the line in the bootup.cfg file that will need to be edited.

```
# System Software Filename
file=img1004_ver1050137_id0106.bin (Change ver1050137 to new
software build. Ex: ver1050140)
```

5. Before transferring the new bootup.cfg file to the SD rename the existing file on the SD card. This can be accomplished using the rename command in ftp. See Below

```
ftp> rename bootup.cfg bootup_old.cfg
```

6. Transfer the new bootup.cfg file to the IMG 1004. Transfer this file as Ascii text.

```
ftp> ascii (Set to transfer an ascii text file)
ftp> put bootup.cfg (Transfer will take a few seconds)
```

7. Once the software is transferred, verify both files were transferred successfully to the SD Card.
8. In order to load latest software the IMG 1004 must be rebooted. Go to ClientView and under the IMG 1004 Physical Node right click and select **Clear Software**.
9. A box will pop up informing you that "This option could have significant effects on the system. Are you sure you want to clear software" Select YES button.
10. The IMG 1004 will now reboot and eventually Software will start loading. Refer to the topic IMG 1004-Hardware Reference > IMG 1004-Front Panel > IMG 1004 - Front Panel Status LEDs in the online documentation for information on LED sequencing and error codes that might occur during the bootup process.
11. The loading of software through the SD Card will take approximately 4 minutes. Once software is loaded then GCEMS will configure the IMG 1004.