Dialogic® PowerMedia™ IP Media Server

Software Quick Start Guide

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Dialogic® PowerMedia™ IP Media Server Documentation Set

The Dialogic provides the following publications:

◆ The *Software Quick Start Guide* describes how to install and configure Red Hat Enterprise Linux and IP Media Server software, configure a softphone, and run a demo.

◆ The *Installation and Operations Guide* provides instructions for configuring, administering, and maintaining the IP Media Server.

◆ The *Application Developer's Guide* provides information for application developers who choose to use the IP Media Server to deploy network announcements, conferences, and Interactive Voice Response (IVR) in a voice over IP (VoIP) environment.

◆ The *Command Line Interface Reference Guide* describes the CLI utility which can be used to configure and troubleshoot the IP Media Server.

◆ *Installing Red Hat Enterprise Linux 5.0* describes how to install and configure Red Hat Enterprise Linux 5 if you are installing the licensed software version of the IP Media Server.

◆ The *License Activation Guide* describes how to activate the license for your Dialogic® IP Media Server .

◆ *Upgrading from Release 2.6.0 to 3.0.0 on Red Hat Enterprise Linux Server Platform* provides information and instructions for upgrading from IP Media Server Release 2.6.0 to IP Media Server Release 3.0.0 on platforms running Red Hat Enterprise Linux. It also includes instructions for downgrading in the event that you need to restore your previous configuration.

Contents

Introduction

This publication provides the instructions to complete the following:

◆ Install and configure the Dialogic® PowerMedia™ IP Media Server (also referred to in this document as the IP Media Server)

◆ Install and configure the Kapanga SIP softphone included in the IP Media Server distribution

◆ Make a test video call from the Kapanga SIP softphone to the IP Media Server

This publication explains the basic operation and is primarily intended for users who do not have extensive experience working with the IP Media Server. For advanced operation, please refer to the *Dialogic® IP Media Server Installation and Operations Guide*.

Note: This document refers to Red Hat Enterprise Linux 5.2 Server; however, these instructions can apply to other Red Hat updates.

Content provided by Dialogic

Dialogic provides the following content for the installation procedures in this document:

◆ Dialogic IP Media Server Release 3.0.0 CD (Burn CD from ISO image - IPMS_3.0_RH_Software_Only.iso).

◆ Key scripts needed in .tgz format (untar via "tar -xvzf filename.tgz" command):
  ◆ Kickstart script for Red Hat Enterprise Linux 5.2 Server OS - ks.cfg (untar from ks.tgz)
  ◆ Bash script to install IPMS - installIPMS.sh (untar from installIPMS.tgz)

◆ *IP Media Server Quick Start Guide*

The above items are available on request from the site below:

https://www.dialogic.com/products/ip_enabled/ip_media_server/default.htm

Content not Provided by Dialogic

Dialogic does not provide the following content. You need to obtain it before starting these installation procedures.

◆ Red Hat Enterprise Linux 5.2 Server - Install CDs or DVD

Preparing the Kickstart Script (ks.cfg) for Installation

The kickstart script provided by Dialogic (ks.cfg) prepares the Red Hat Enterprise Linux 5.2 Server system with all of the necessary packages installed.

It includes a default password, which is encrypted. It is set for DHCP and IP gathering. Follow the steps below to make changes to these defaults.

Changing the Password

By default, the IP Media Server software installs with the root user having the following password:

```
testing
```

You can change it to another password. Edit the ks.cfg file before loading to the web/file server. Modify the following lines:

```
#Root password
rootpw --iscrypted $1$ucvw7VMB$QUzmrXQajziyUDtNayTE//
```

If you want to change the password, the password needs to be in encrypted form already before placing it in ks.cfg.

Refer to Red Hat's procedure for modifications if a password change is requested.

Changing the DHCP/Static IP Address

By default, the kickstart script installs RH OS and sets the system for DHCP on eth0. However, you can modify the script to run with static IP. Edit the ks.cfg file before loading it to the web/file server.

Replace the following lines:

```
#Network information
network --bootproto=dhcp --device=eth0
```

With the following lines:

```
#Network information
network --device=eth0 --bootproto=static  --ip
   146.152.83.170 --netmask 255.255. 255.0 --gateway
   146.152.83.250 --nameserver 146.152.3.1
```

Collecting Key Information Prior to Installing

In order for the system to obtain the kickstart configuration file (ks.cfg) from the remote server, the system needs to have an IP address assigned.

If the system is in a DHCP environment, specifying `ksdevice=eth#` at the `boot:` prompt, the system automatically obtains that information. However, if there is no DHCP server present, the system comes up with a series of menus requesting the IP information. Therefore, you need to have the following information on hand before starting the installation

◆ IP address

◆ subnet address

◆ gateway address

◆ DNS (nameserver) address

Kickstarting the Red Hat OS

Follow the steps below to kickstart the Red Hat OS by copying the kickstart script from the network. Your system must meet IP Media Server hardware requirements and have a blank hard drive.

1 Connect your system to the network using your first logical network interface (eth0).

2 Copy the ks.cfg file to a remote file/web server location on your network.

For example: http://146.152.83.188/snowshore/ks.cfg

In this example, another IP Media Server system is used as the web/file server.

3 Insert the Red Hat Enterprise Linux 5.2 Server installation CD #1 or DVD into the system's CD/DVD drive and set the system BIOS to boot from CD and restart the system. The following screen appears:

4 At the boot: prompt, enter the location of the remote file/web server that contains the kickstart script in the following method.

linux ks=http://146.152.83.188/snowshore/ks.cfg ksdevice=eth0

Press **Enter** and the process starts. The command above contains the network location on the remote file server where the ks.cfg file is located. The command indicates to the system to use eth0 (first NIC on the system) to initialize the IP address for the system.

5 If the system is on a DHCP network, it automatically searches for an IP address to obtain for the current system so you can skip this step. However, if there is no DHCP server on the network, the system displays the following menu to obtain an IP address before it copy the file from the remote server:

```
Welcome to Red Hat Enterprise Linux Server


                        ┤ Configure TCP/IP ├
        [*] Enable IPv4 support
                (*) Dynamic IP configuration (DHCP)
                ( ) Manual configuration

        [*] Enable IPv6 support
                (*) Automatic neighbor discovery (RFC 2461)
                ( ) Dynamic IP configuration (DHCP)
                ( ) Manual configuration


              OK                        Back




  <Tab>/<Alt-Tab> between elements  ¦ <Space> selects ¦ <F12> next screen
```
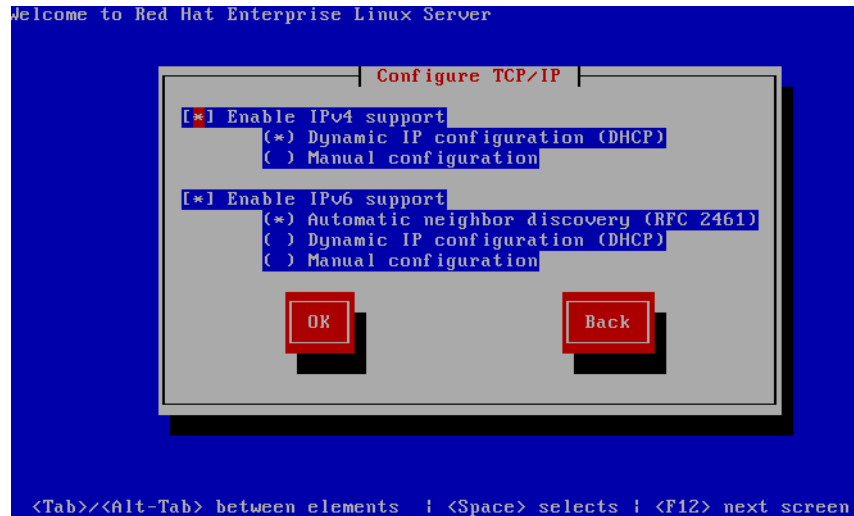
6 Follow the appropriate menus to set up your system with a Static IP address. If you are using IPv4, select **Manual configuration** under **Enable IPv4 support** and deselect **Enable IPv6 support**. Click **OK**.

7 On the next screen, provide the IP address, subnet, gateway IP address, and the nameserver IP address and click **OK**.

8 The installation progresses automatically - performing the following:

- checks for hardware present
- starts up the network connection
- copies the ks.cfg file
- checks for dependencies
- installs the packages from the CDs/DVD

9 If installing from DVD, no other prompts appear. If installing from CDs, provide the proper Red Hat Installation CD number as prompted.

10 When all packages are installed, the rebooting system message appears. If your CD/DVD drive does not automatically eject, manually eject the drive before the system starts to reboot.

11 The following is the status after the system reboot:

- The Red Hat OS is installed
- The network has its IP address configured based on the Static IP/DHCP option selected above.
- The system is restarted and shows the text based on the Red Hat login prompt

---

Installing Dell R410 Driver (Broadcom)

If you are using the Dell R410 server, you must follow the steps below to install the required driver.

1. Download the Dell410 driver (Broadcom) from http://www.support.dell.com/. Burn them to a CD.

2. Copy the netxtreme2-5.0.17.tar.gz file to the hard drive and untar the driver.

3. Go to the `bnx2-1.9.20B` directory and in the `src` directory type `make`.

4. Type `make install` to install the driver.

5. Reboot the server.

Installing IP Media Server Software

Follow the steps below to install the IP Media Server Release 3.0.0 CD provided by Dialogic.

1 Boot the Linux system and login as the root user.

2 Insert the Dialogic IP Media Server Release 3.0.0 CD into the CD/DVD drive.

3 Copy installIPMS.sh onto the system in the /root/directory. Run the following commands:

```
cd /root/
dos2unix installIPMS.sh
chmod 777 installIPMS.sh
```

The `dos2unix` command is a precaution in case the script has been manipulated on a windows machine prior to copying onto the Linux system.

4 Ensure that the CD is in the drive. Run `./installIPMS.sh`

If the CD is NOT in the drive, you will have to uninstall the IP Media Server software and re-install from the beginning

5 After the installation is complete, compare /tmp/snowshore_pkg_install.log with the information below such that all the installation steps completed properly.

```
Started RHEL5_U2 Installation -
Thu Jan  7 19:25:44 EST 2010
Preparing...
   ################################################
 version == 3.0.0
Stopping nscd: [FAILED]
The snow group already exists (that's okay)
The snow_operator group already exists (that's okay)
Removing password for user admin.
passwd: Success
Starting nscd: [  OK  ]
Creating 15 minute log rotation directory
Creating 30 minute log rotation directory
Adding 15 minute job to crontab
Adding 30 minute job to crontab
SNOWG2SYS
   ################################################
Modifying /etc/security/ ...
Modification complete
Modifying /etc/pam.d/ ...
Modification complete
Modifying /etc/inittab ...
Modification complete
Disabling unneeded services...
```

```
Enabling needed services...
Modification complete
Modifying squid init configuration...
Modifying squid configuration file...
Enabling SNMP...
SNOWG2MS
    #####################################################
Enabling needed services...
Modifying /etc/inittab ...
Modification complete
Using Dialogic SNMP config file
net-snmp version 5.3.1
Installing Licensing...
Licensing Installation complete
No additional SuSE libraries needed
Installing additional net-snmp libraries
Didn't find dialogic and cantata on search line,
    updating resolv.conf
Stopping nscd: [  OK  ]
Starting nscd: [  OK  ]
SNOWG2CLI
    #####################################################
SNOWG2MPS
    #####################################################
SNOWG2MSGUI
    #####################################################
Adding Dialogic syslog config
Increasing Apache MaxClients to 310
Setting php.ini's post_max_size to 200M
Setting php.ini's memory_limit to 200M
Setting php.ini's upload_max_filesize to 200M
Completed RHEL5_U2 Installation -
Thu Jan  7 19:27:03 EST 2010
```

6   Verify that the /tmp/postinstall.log file is empty which indicates that there were no errors in the installation.

7   Enter **eject** at the prompt and remove the Dialogic Quickstart CD.

8   Enter **reboot** to finalize the installation.

9   After the reboot, log in as the root user and check the following log file to ensure that it contains the information below:

```
/var/snowshore/log/snowshore_additional_install.log


Installing Additional Snowshore software...
Thu Jan 7 19:30:18 EST 2010
DIR: /opt/snowshore/vg_install
Found.../opt/snowshore/vg_install/sdk_linux*.rp
Installing: BRKTBOSsetup-5
Preparing...
    #####################################################
```

```
BRKTBOSsetup
    ####################################################
Thu Jan 7 19:30:24 EST 2010
DIR: /opt/snowshore/vg_install
Found.../opt/snowshore/vg_install/fw_linux*.rp
Installing: BRKTBOSsetup-fw
Preparing...
    ####################################################
BRKTBOSsetup-fw
    ####################################################
Thu Jan 7 19:30:25 EST 2010
DIR: /opt/snowshore/vg_install
Found.../opt/snowshore/vg_install/SNOWG2SR140-*.rp
Installing: SNOWG2SR140-
Preparing...
    ####################################################
Backing up /etc/mail/sendmail.mc to
    /etc/mail/sendmail.mc.backup
Backing up /etc/mail/sendmail.cf to
    /etc/mail/sendmail.cf.backup
SNOWG2SR140
    ####################################################
Thu Jan 7 19:30:34 EST 2010
DIR: /opt/snowshore/vg_install
Found.../opt/snowshore/vg_install/SNOWG2SR140GUI-*.rp
Installing: SNOWG2SR140GUI-
Preparing...
    ####################################################
SNOWG2SR140GUI
    ####################################################
Removing inittab Entry
Restarting httpd
```

10 Run the following command to verify that seven packages are installed,
indicating that the installation completed properly.

```
localhost.localdomain  > rpm -qa | grep SNOW
SNOWG2MPS-3.0.0-091219A.EL5.0
SNOWG2SR140-3.0.0-091219A.EL5.0
SNOWG2SYS-3.0.0-091219A.EL5.0
SNOWG2CLI-3.0.0-091219A.EL5.0
SNOWG2MSGUI-3.0.0-091219A.EL5.0
SNOWG2MS-3.0.0-091219A.EL5.0
SNOWG2SR140GUI-3.0.0-091219A.EL5.0
localhost.localdomain  >
```
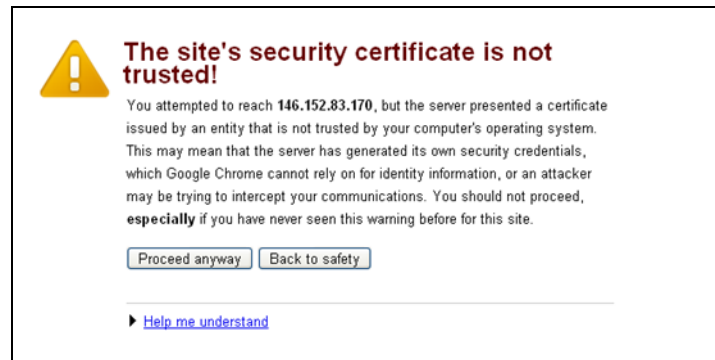
Configuring the IP Media Server

Once the system is fully booted up, use another system that is accessible through the network to IP Media Server to complete the basic configuration steps below.

1 Connect to the Web UI using the following URL:

```
https://IPMS_IP_ADDRESS
```

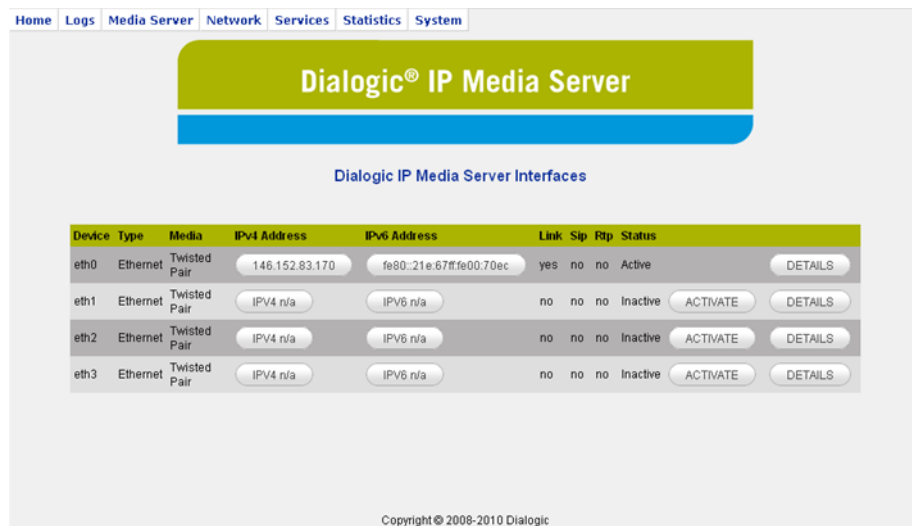The following page appears:

2 Click **Proceed anyway**. The following page appears:

3 Log in with **admin** for the username. Leave the password field blank. The following page appears:

4 Select **Network→Configure→Interfaces**. The following page appears.

5 Click the button of the IP address associated with the Web UI (in this example, 146.152.83.170). The following page appears.

Dialogic® IP Media Server

Dialogic IP Media Server Configure Network Interfaces

Configure Device eth0

- ○ Automatically obtain IP address settings with [dhcp ▾] ⓘ
  - ☑ Automatically obtain DNS information from the provider
- ⊙ Statically set IP address:
  - Address: 146.152.83.170
  - Subnet Mask/Prefix Length: 255.255.255.0
  - Hostname:
- ☑ Enable SIP on IP address
- ☑ Enable RTP on IP address
  - ☐ Enable Sip Late Media on address
- ☐ Enable MRCP on address
- ☐ Enable QOS on interface
- ☐ Enable Traffic Control on interface

(OK)   (DELETE)   (CANCEL)

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6 If your IP Media Server was previously set up for DHCP, select **Statically set IP address** and provide the IP address and subnet mask. Select **Enable SIP on IP Address** and **Enable RTP on IP address**. Click **OK**. The following page appears.

The device configuration for eth0 has been updated

Note: If you change the IP address on which SIP or RTP is enabled, the host must be rebooted.

CONTINUE

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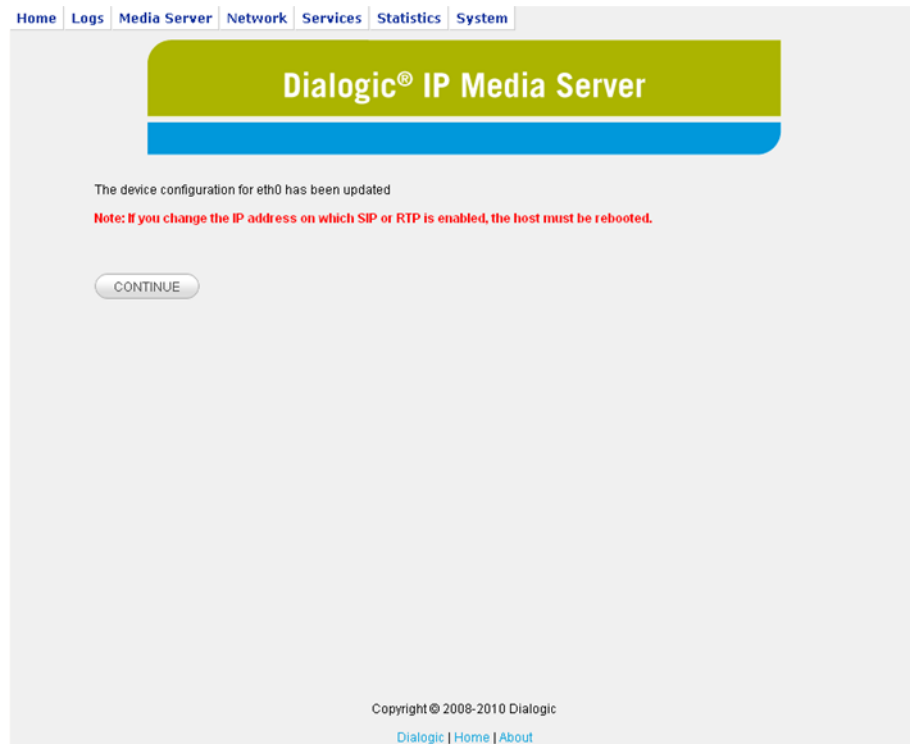
7 Select **Network→Configure→Routes**.

Dialogic IP Media Server Routes

ADD ROUTE

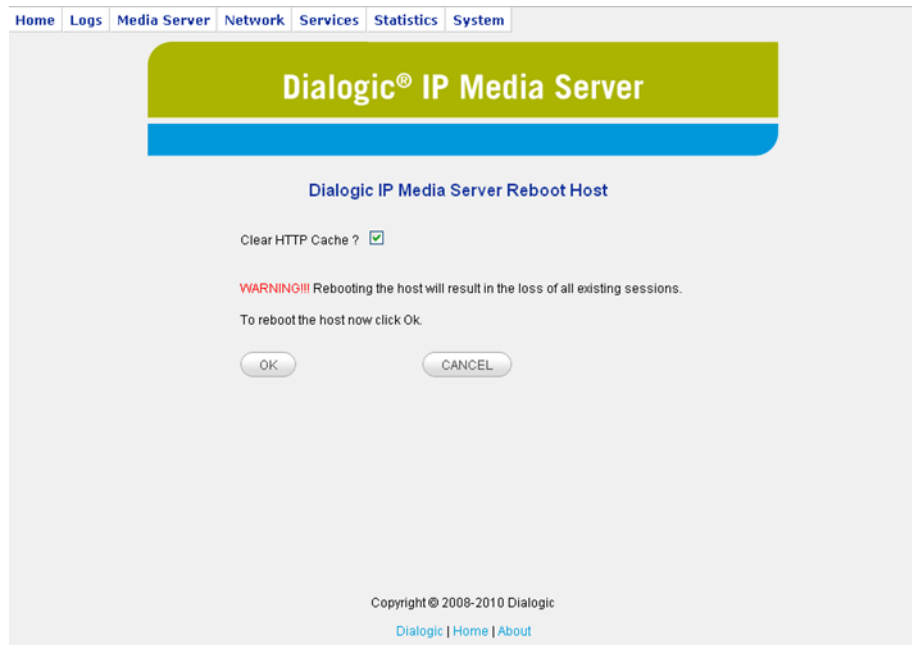| Interface | Network Address | Subnet Mask/Prefix Length | Gateway |

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8 Click **ADD ROUTE** to create a new route. Enter the values associated with the route. Add as many routes as needed. Below is an example of a route.
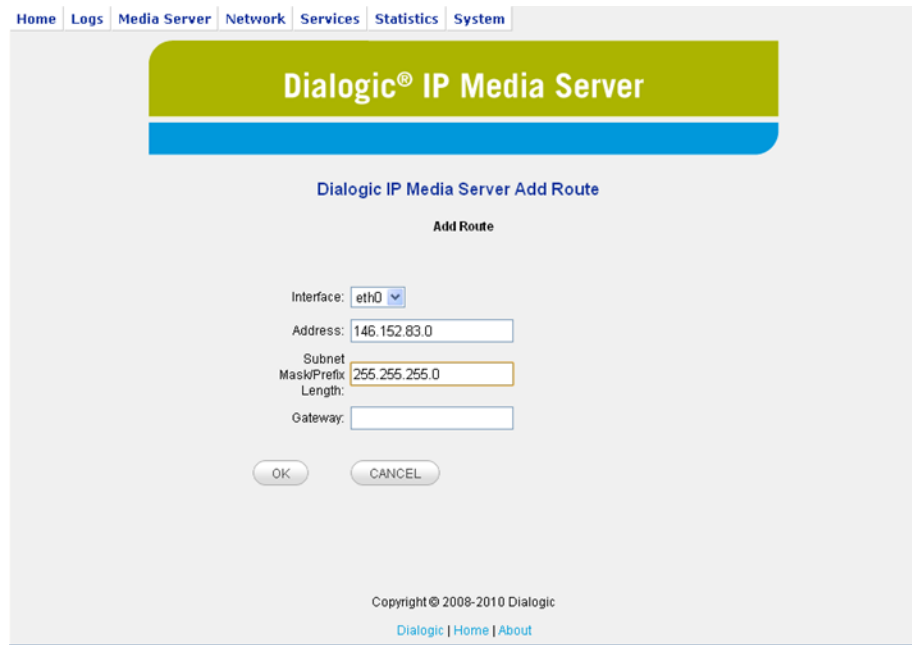
9 Click **OK** and the following page appears.

10 When you are done adding routes, select **System→Reboot Host**. The following screen appears.

11 Select **Clear HTTP Cache** and click **OK** to reboot the system. It takes three to five minutes for the system to boot up and have the Web UI accessible again.

The IP Media Server is ready to take calls at the IP address configured.

Upgrading Red Hat Enterprise Linux 5.2 Server to Install IP Media Server Release 3.0.0

Follow the steps below to upgrade Red Hat Enterprise Linux 5.2 Server to eventually install IP Media Server software.

There are three high level steps required to perform this upgrade:

◆ Modify the yum.conf file to install from the Red Hat DVD

◆ Mount the DVD/ISO

◆ Upgrade packages

Modifying the yum.conf File

1 Modify the /etc/yum.conf file by adding following section to it:

```
[rh5-media]
name=RedHat 5.2
baseurl=file:///media/cdrom/Server
gpgcheck=0
```

Mount the Red Hat Media

1 DVD Media

  ◆ mkdir /media/cdrom
  ◆ mount /dev/cdrom /media/cdrom

2 ISO File:

  ◆ mkdir /media/cdrom
  ◆ mount -t iso9660 -o loop <iso file> /media/cdrom

Upgrading Packages

Follow the steps below to install packages not installed by the auto-dependency method.

1 `cd /media/cdrom/Server`

2 `yum install lcms-1.15-1.2.2.i386.rpm --disablerepo=\* --enablerepo=rh5-media --nogpgcheck`

3 `yum install lcms-devel-1.15-1.2.2.i386.rpm --disablerepo=\* --enablerepo=rh5-media --nogpgcheck`

4 `yum install compat-libstdc++-33 --disablerepo=\* --enablerepo=rh5-media --nogpgcheck`

5 `yum install compat-libstdc++-296-2.96-138.i386.rpm --disablerepo=\* --enablerepo=rh5-media --nogpgcheck`

6 `yum install lm_sensors-2.10.0-3.1.i386.rpm --`
   `disablerepo=\* --enablerepo=rh5-media --nogpgcheck`

Copy the IP Media Server tgz archive to this system and then follow the steps below:

1 `mkdir /tmp/install_1`

2 `cd /tmp/install_1`

3 `tar -xvzf <path to IPMS archive file>`

4 `yum install *rpm --disablerepo=\* --enablerepo=rh5-media--`
   `nogpgcheck`

5 `./ms_install`

6 `reboot`

You can now configure the IP Media Server software. Refer to "Configuring the IP Media Server" (page 15).

Verifying Licenses

Follow the steps below to verify that the correct licenses are installed in order to start using the IP Media Server.

1   Log into the IP Media Server web console.

2   Navigate to System➔ License➔ Features to view the licensed features currently enabled on the IP Media Server.

The following are the licensing requirements:

◆   The IP Media Server comes with a two-port video license so no additional license is required to get started.

◆   For text overlay functionality, vxcode must be non-zero.

Refer to the *Dialogic® IP Media Server License Activation Guide* for more information.

Installing and Configuring the Client Softphone

Follow the procedures below to install and configure a client softphone to call the IP Media Server. These instructions use the Kapanga softphone as an example.

Installing the Client Softphone

The IP Media Server includes a trial version of the Kapanga softphone; the trial version lasts for 90 days (Windows® and Linux clients).

1 Locate the kapanga_client.zip at the following address:

`https://192.168.12.168/snowshore/apps/`

"192.168.12.168" is the IP address of the IP Media Server.

2 Click the `kapanga.zip` file and choose to **save** or **open** the file.

3 If you saved the zip file, double-click the file to unzip it. If you selected **open**, the file automatically unzips.

4 Double-click the `kapanga_client_setup.exe` file. The Setup Wizard appears.

5 Follow the wizard to complete the installation. When complete, you can select to launch Kapanga Client Softphone.

Configuring the Client Softphone

This procedure provides an example of configuring a SIP client to call the IP Media Server using Common Intermediate Format (CIF) or Quarter Common Intermediate Format (QCIF) resolutions.

Note: Before you can make SIP calls to the IP Media Server, you must configure the SIP User Agent (UA) on the client softphone to use the appropriate Audio and Video codecs. The codecs must be available in the SIP UA and the IP Media Server.

---

1   From the Kapanga softphone, click the **K** icon on the upper-left corner.


2   Select **Configuration**, **Call Control Settings.** The following screen appears.
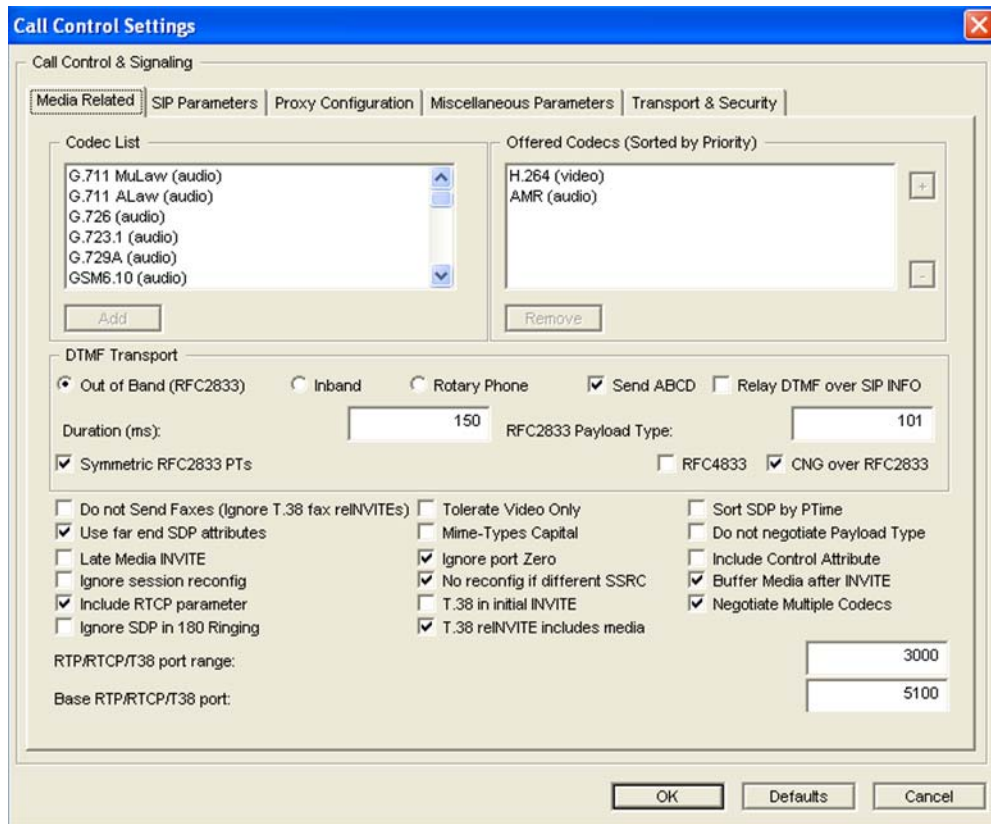
The available codecs appear in the left list. The list on the right is the codecs used for SIP calls.

3   Select one video codec and one audio at a time. In this example, the AMR and H.264 are used. The codecs that you select must be available in the IP Media Server. Refer to "Verifying Licenses" (page 23) to find the codecs currently enabled in the target IP Media Server.

4   Select **Configuration**, **Codec Settings**. The following screen appears.
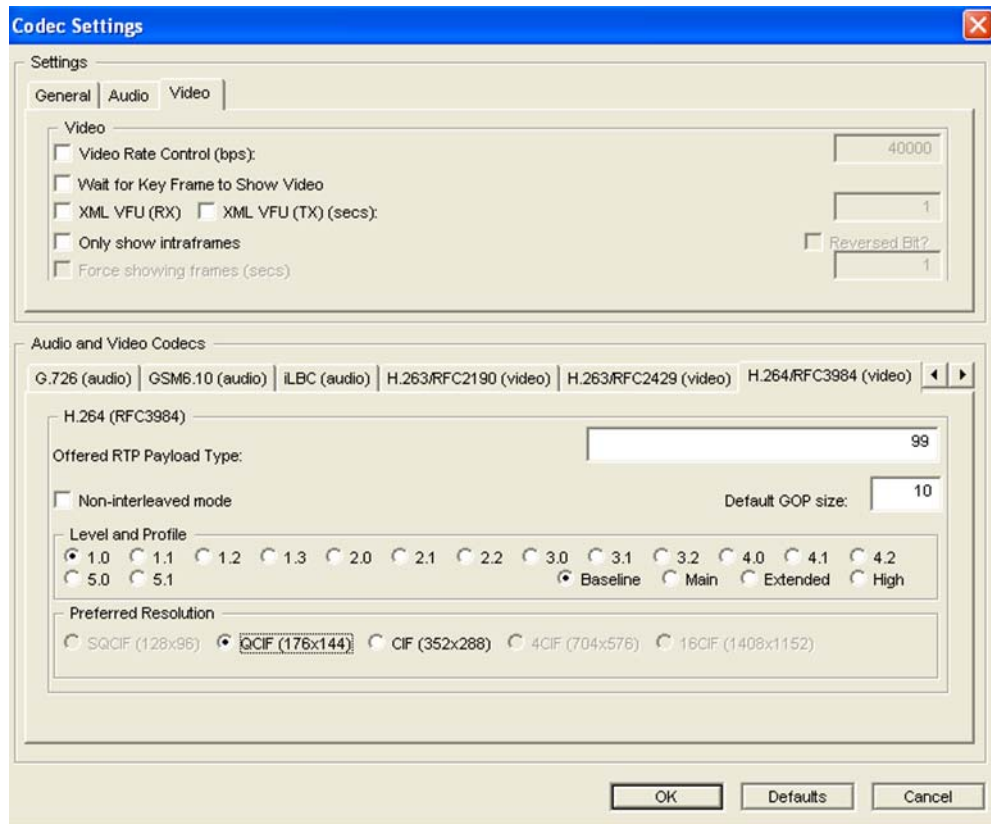
5 Select **1.2** for the Level and Profile.

6 Select **CIF** for the **Preferred Resolution.**

7 Click the **K** icon and select **File**, **Save or Save as**

8 To enable the new configuration parameter, click the **K** icon and select **Configuration**, **Restart Softphone**.

9 To test the bitrate control capabilities of the IP Media Server, select **Video Rate Control** above and enter the bitrate that you plan to use. (The default is 384 kbps.) The SIP UA sends a **"b=AS:<XXX>** bandwidth limiter line in the SDP to the IP Media Server. The IP Media Server will use this setting for the output bitrate of the video stream to the SIP UA.

10 Select **Configure**, **General Settings**. The following screen appears.
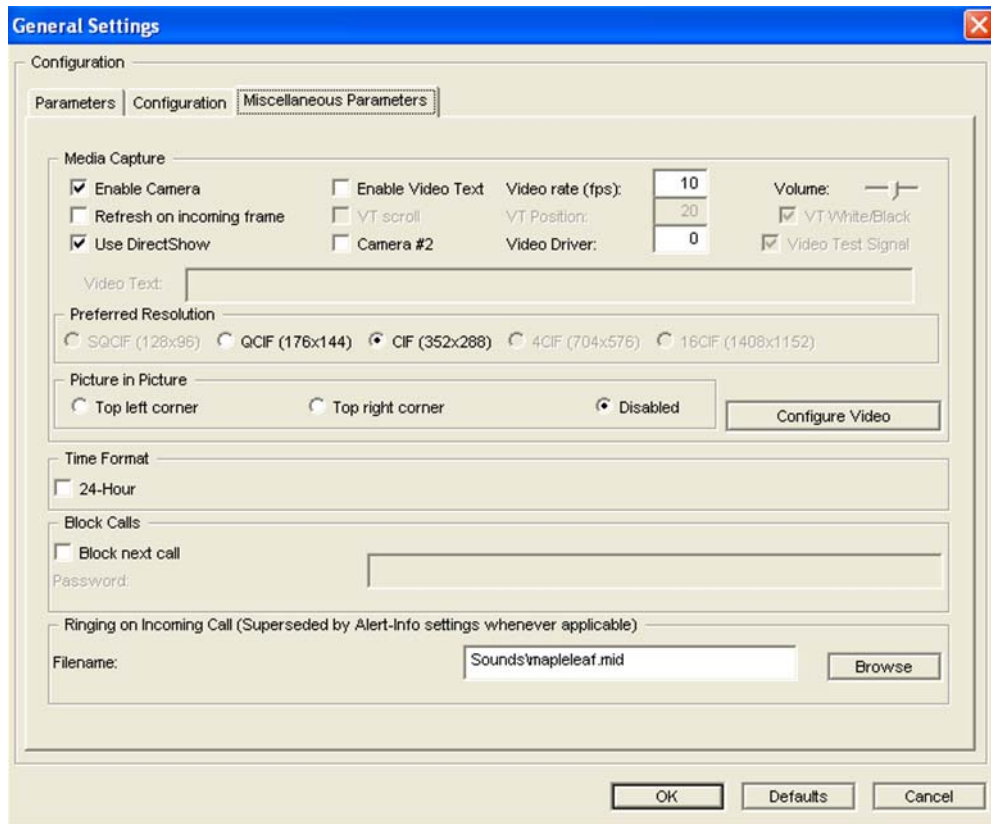
11 Select the **Miscellaneous Parameters** tab to set the camera and frame rate settings. In this example, the Video rate (fps) is set to **10**. The camera is enabled and the resolution is set to **CIF**.

12 Click the **K** icon and select **File**, **Save or Save as.**

13 To enable the new configuration parameter, click the **K** icon and select **Configuration**, **Restart Softphone**.

Note: If Kapanga is configured to offer only H.263/RFC2429 and H.263/RFC2190 video (in this order) in the SDP Offer, the IP Media Server will answer with H263-1998 (H.263/RFC2429). The media session established between the IP Media Server and Kapanga should stream H.263 (RFC2429) but the Kapanga streams H.263 (RFC2190) instead.

Making a Test Video Call

To verify that your Kapanga SIP softphone and IP Media Server are configured correctly, make a test video call from the Kapanga SIP softphone to the IP Media Server multimedia portal demo. (See VoiceXML-Based Multimedia Mail and Portal Demo below for more information.)

Make the call using the SIP addresses below depending on your configuration: QCIF or CIF. Substitute the IP Address in the example below with the IP address of your IP Media Server.

Once the SIP UA makes the call using one of the addresses below, the main.vxml script begins executing.

QCIF Configuration

```
dialog@111.222.33.44;voicexml=http://localhost/snowshore/vxml/demos/tovl/qcif/main.vxml
```

CIF Configuration

```
dialog@111.222.33.44;voicexml=http://localhost/snowshore/vxml/demos/tovl/cif/main.vxml
```

VoiceXML-Based Multimedia Mail and Portal Demo

The IP Media Server Release 3.0.0 ships with a VoiceXML based- multimedia mail and portal demo that demonstrates the following technologies.

◆ Transcoding

◆ RTSP Client

◆ Text Overlay

◆ Multimedia play/record

The demo takes inbound calls and domesticates IVVR application use cases. The demo also includes video mail application use cases.

The following call flow shows how the user navigates various demo menus with DTMF input.
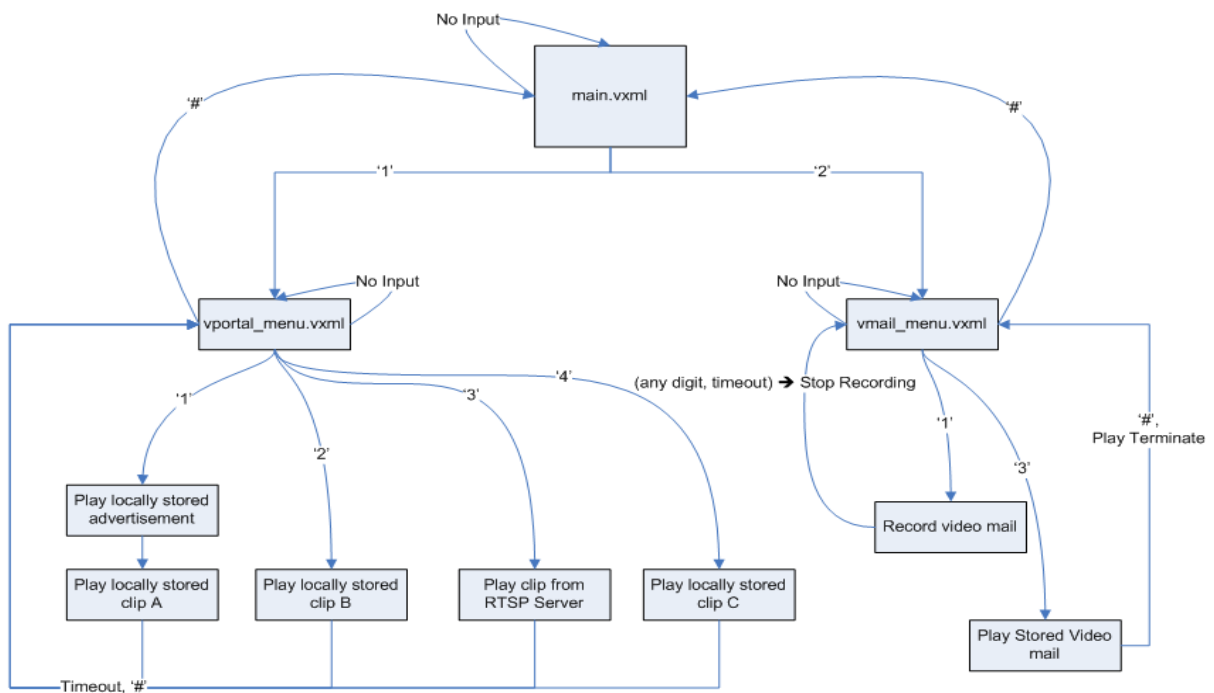
Readme File

Refer to the Readme file for the demo located at the following path.

http://192.168.12.168/snowshore/vxml/demos/readme