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## Revision History

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1. Introduction

This publication provides the instructions to complete the following:

- Install and configure the Dialogic® PowerMedia™ Web Media Server (also referred to herein as "PowerMedia WMS").
- Install and configure the Kapanga soft phone included in the PowerMedia WMS distribution.
- Verify the PowerMedia WMS installation.

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

Content Provided by Dialogic

Dialogic provides the following content for these installation procedures:

- ks.cfg and installWMS.tgz scripts in the .tgz format (untar using tar -xvzf filename.tgz command)
- installWMS.sh bash script to install the PowerMedia WMS (untar from installWMS.tgz)
- DIALOGICWMS-2.0.0-31.EL5.0.i386.iso (ISO image of the PowerMedia WMS software)
- DialogWMSDemo.tar.gz (demonstration applications)
- Dialogic® PowerMedia™ Web Media Server Quick Start Guide

This content is available on the Dialogic Web site. If you do not have information about how to access it, please contact your Dialogic sales representative, or register at the following site:


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
3. Installation

Installation Overview
There are two modes in which you can install PowerMedia WMS.

- New Red Hat OS
- Red Hat Installed but requires upgrade

If Red Hat is not installed on your system, refer to Kickstarting the Red Hat OS to install it. If Red Hat is installed on your system, refer to Upgrading Red Hat prior to installing PowerMedia WMS software.

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 PowerMedia WMS 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 PowerMedia WMS 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
```

5. 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.

6. 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 copies the file from the remote server:
7. 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.

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

9. The installation progresses automatically and performs 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.

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

11. 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.

12. 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.
Upgrading Red Hat Enterprise Linux 5.2 Server to Install PowerMedia WMS Release 2.0

Follow the steps below to upgrade Red Hat Enterprise Linux 5.2 Server to eventually install the PowerMedia WMS 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

Modify yum.conf

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

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

Mount the Red Hat Media

1. DVD Media:

   ```bash
   mkdir /media/cdrom
   mount /dev/cdrom /media/cdrom
   ```

2. ISO File:

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

Upgrade Packages

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

1. Type `cd /media/cdrom/Server`

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

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

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

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

6. Type `yum install lm_sensors-2.10.0-3.1.i386.rpm --disablerepo=\* --enablerepo=rh5-media --nogpgcheck`
Copy the PowerMedia WMS `tgz` archive to this system and then follow the steps below:

1. Type `mkdir /tmp/ws`
2. Type `cd /tmp/ws`
3. Type `tar -xvzf <path to WS archive file>`
4. Type `yum install SNOW*rpm --disablerepo=\* --enablerepo=rh5-media --nogpgcheck`
5. Type `./wms_install.sh`

**Modify resolv.conf**
Modify the `/etc/resolv.conf` file to match the following as necessary:

- search `<appropriate DNS domain(s), such as “example.com”>`
- nameserver `<first nameserver>`
- nameserver `<second nameserver>`

**Modify hosts**
Modify the `/etc/hosts` file by adding following line to its end:

- `<WMS IP address> snow-rtp`

**Modify network**
Modify the `/etc/sysconfig/network` file as follows:

- `NETWORKING=yes`
- `NETWORKING_IPV6=no`
- `HOSTNAME=<hostname>`
- `IPADDR=<WMS IP address>`
- `GATEWAY=<IP address of gateway associated with WMS>`
- `NETMASK=255.255.255.0`

**Modify selinux**
Modify the following `/etc/sysconfig/selinux` line from:

- `SELINUX=enforcing`
  to:
- `SELINUX=disabled`

Reboot the WMS server.
You can now configure the PowerMedia WMS software. Refer to Configuring the PowerMedia WMS.
Installing Dell R410 Driver (Broadcom)

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

1. Download the Dell410 driver (Broadcom) from 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 PowerMedia WMS Software

Follow the steps below to install the PowerMedia WMS Release 2.0 CD, which can be created from an ISO image available for download on the Dialogic Web site at http://www.dialogic.com/products/downloads/getdl.htm?regid=41623

1. Boot the Linux system and login as the root user.
2. Insert the PowerMedia WMS Release 2.0 CD into the CD/DVD drive.
3. Copy installWMS.sh onto the system in the /root directory. Run the following commands:
   ```
   cd /root/
   dos2unix installWMS.sh
   chmod 777 installWMS.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 `./installWMS.sh`
   **Caution:** If the CD is NOT in the drive, you will have to uninstall the PowerMedia WMS software and re-install from the beginning.
5. After the installation is complete, compare /tmp/wms_pkg_install.log with the information below to ensure that all the installation steps completed properly.

Installing Dialogic PowerMedia WMS software...
Preparing...
################################################
version == 1.0.0
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 configuration file...
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 PowerMedia WMS Release 2.0 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 there are no errors in the following files:
   - /var/snowshore/log/restfulwslog.txt
   - /var/snowshore/log/lighttpderror.log
   - /var/snowshore/log/loghttpdaccess.log

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

```
localhost.localdomain > rpm -qa | grep DIALOGIC
DIALOGICWMS-xxxx
DIALOGICWMSDEMO-xxxx
```
Demonstration Applications

PowerMedia WMS Release 2.0 includes the following two demonstration applications:

- WebServicesDemo.war - conferencing demonstration
- InteractiveWebServicesTool.jar - Java application used for playing the video demonstration and interacting with the PowerMedia WMS to create media streams, play a file and other functionality.

The applications are installed in the following directory:

/opt/snowshore/web_service/demo

Uninstalling PowerMedia WMS Software

To uninstall the PowerMedia WMS software run the following:

./wms_uninstall.sh from the /opt/snowshore/web_service/bin directory
4. Configuration

Configuring the PowerMedia WMS

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

1. Connect to the Web UI using the following URL:
   
   https://WMS_IP_Address

2. Connect to the Web UI. The login page appears.
3. Log in with admin for the username. Leave the password field blank. The Version Information page appears.
4. Select **Network->Configure->Interfaces**. The Interfaces page appears.
5. Click the button of the IP address associated with the Web UI (for example, 146.152.83.170). The Configure Network Interfaces page appears.
6. If your PowerMedia WMS was previously set up for DHCP, select **Statically set IP address** and provide the IP address and subnet mask. Select **Enable RTP on IP Address**. Click **OK**. A message similar to the following 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.
7. Select **Network->Configure->Routes**. The Routes page appears.
8. Click **ADD ROUTE** to create a new route. Enter the values associated with the route. Add as many routes as needed.
9. Click **OK**. A message is displayed indicating the route or routes that have been added.
10. When you are done adding routes, select **System->Reboot** Host. The Reboot Host page 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 PowerMedia WMS is ready to take calls at the IP address configured.
5. Verifying Licenses

Verifying Licenses

Follow the steps below to verify that the correct licenses are installed in order to start using the PowerMedia WMS.

1. Log into the PowerMedia WMS web console.
2. Navigate to System-> License-> Features to view the licensed features currently enabled on the PowerMedia WMS.

The following are the licensing requirements:

- The PowerMedia WMS 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.
6. Installing and Configuring the Client Softphone

Installing the Client Softphone

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

The PowerMedia WMS 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:


   "192.168.12.168" is the IP address of the PowerMedia WMS.

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.


   ![Setup Wizard]

   Welcome to the Kapanga Client Setup Wizard
   
   This will install Kapanga Client Version 1.0.6.2180_setup on your computer.
   
   It is recommended that you close all other applications before continuing.
   
   Click Next to continue, or Cancel to exit Setup.

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 PowerMedia WMS using Common Intermediate Format (CIF) or Quarter Common Intermediate Format (QCIF) resolutions.

**Note**: Before you can make SIP calls to the PowerMedia WMS, 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 PowerMedia WMS.
1. From the Kapanga softphone, click the **K** icon on the upper-left corner.

![Kapanga Softphone Icon](image)

2. Select **Configuration, Call Control Settings**. The following screen appears.

![Call Control Settings](image)

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. Be sure to include H.264 (video). In this example, the AMR and H.264 are used. The codecs that you select must be available in the PowerMedia WMS. Refer to **Verifying Licenses** to find the codecs currently enabled in the target PowerMedia WMS.
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 PowerMedia WMS, 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 PowerMedia WMS. The PowerMedia WMS 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 PowerMedia WMS will answer with H263-1998 (H.263/RFC2429). The media session established between the PowerMedia WMS and Kapanga should stream H.263 (RFC2429) but the Kapanga streams H.263 (RFC2190) instead.
7. Verifying the Installation

Verifying PowerMedia WMS Installation

To verify the installation, run the InteractiveWebServicesTool demonstration included in the installation. The demonstration and readme file are installed in the following directory:

/opt/snowshore/web_service/demo

Refer to the readme file for instructions to run the demonstration.