Installing or Upgrading the ISSIG

Cisco IPICS supports voice interoperability between radio frequency subsystems that support the Inter-RF Subsystem Interface (ISSI). To enable this support, you install and configure the Cisco IPICS ISSI Gateway (ISSIG).

The ISSIG installs and operates in a dedicated VM. For a list of supported VMs, see *Cisco IPICS Compatibility Matrix*.

The ISSIG installation process consists of two general procedures: First you deploy the VM OVA file that contains the Cisco IPICS operating system, then you install and configure the ISSIG software. After the ISSIG is installed, you provision it from the Cisco IPICS Administration Console.

This chapter includes these topics:

- ISSIG Overview, page 5-1
- Installing or Upgrading the ISSIG Software, page 5-2
- Provisioning the ISSIG on the Cisco IPICS Server, page 5-6

ISSIG Overview

The ISSIG is an optional software package for Cisco IPICS. It runs in a VM and provides the connectivity between Cisco IPICS and the ISSI-compatible Inter-RF Subsystems with which you will interoperate.

The ISSIG includes the following components:

- P25 Gateway—Handles the transcoding between the G.711 codec of a multicast stream and the Improved Multi-Band Exitation (IMBE) codec

- RFSS Gateway—Handles the ISSI between the ISSI Gateway and a remote radio frequency subsystem (RFSS)

The ISSIG provides these interoperability modes:

- Proxy mode—Enables any Cisco IPICS endpoint to interoperate with a P25 device and provides transcoding between G.711 and the IMBE codecs.

- Native mode—Enables the IDC to communicate directly to a P25 endpoint. Transcoding is not performed. Allows optional end-to-end encryption for this communication.

Installing or Upgrading the ISSIG Software

This section describes how to install or upgrade the ISSIG software.

Before You Begin

Deploy the VM OVA image for Cisco IPICS as described in the "Obtaining and Deploying the VM OVA Image for the Cisco IPICS Operating System" section on page 2-6. In Step 1c of this procedure in that section, make sure to download the issig-4.8.1-2cpu.ova. After you deploy the VM OVA for your environment, you are ready to install or upgrade the ISSIG software on the server.

To install the ISSIG software, perform the following steps.

Procedure

Step 1   If you are upgrading the ISSIG, take the following actions, otherwise, skip to Step 2.

    a.   From a client PC, take these actions to obtain the ISSIG installation file:

        1.   Go to this URL (you must have a valid Cisco.com user ID and password to access this URL):

        http://www.cisco.com/cisco/software/navigator.html?mdfid=280723930&flowid=7120

        2.   Click the **Cisco IPICS Release 4.8** link.

        3.   Click **Download** next to **issig-4.8.1.bin**.

        Follow the onscreen instructions to download the ISSIG installation file to your local drive.

   b. Copy the ISSIG installation file from your local drive to the following folder
   on the VM that you deployed for the ISSIG:

   /root/installer

   c. Log in as the root user to the VM that you deployed for the ISSIG and enter
   the following commands to modify the permissions on the ISSIG installation
   file, where *installerfilename* is the name of the ISSIG installation file that you
   put on the server:

   [root]# **cd /root/installer**

   [root]# **chmod 755** *installerfilename***.bin**

Step 2   Log in as the root user to the VM that you deployed for the ISSIG if you are not
logged in already and enter the following commands, where *installerfilename*.bin
specifies the name of the installer file:

[root]# **cd /root/installer**

[root]# **./*installerfilename*.bin**

After a short time, a Welcome message appears.

If you are upgrading the ISSIG software on this server, continue to Step 3.

If you are performing a fresh install of the ISSIG, skip to Step 4.

Step 3   If you are upgrading the ISSIG software, take either of these actions:

   • Press 1 and **Enter** to install the ISSIG software. This process installs the
     ISSIG software and completely removes the older version of the software and
     its configuration information.

   • Press 2 and **Enter** to upgrade to the ISSIG software. This process installs the
     ISSIG and retains the earlier ISSIG configuration information.

⚠

Caution   If you choose option 1, you loose all of your existing ISSIG configuration
information.

Step 4   When you are prompted to continue, press **Y** then press **Enter**.

   Text displays to inform you that you must read and accept the terms of the End
   User License Agreement (EULA) before you can proceed.

Step 5   Take these actions:

   a. Press **Enter** to display the EULA.

      b. Press the **Spacebar** to scroll through and view the EULA, then type **y** and press **Enter** to continue with the installation.

      You must accept the terms of the EULA to proceed.

Step 6   When you are prompted to continue, type **y** then press **Enter**.

Step 7   When you are prompted for an ISSIG Administration Console user name, enter a user name that you will use is you need to access the ISSIG Administration Console, then press **Enter**.

    The user name can include letters and numbers only. It cannot be blank.

Step 8   When you are prompted for an ISSIG Administration Console password, enter a password that you will use to access the ISSIG Administration Console, then press **Enter**.

    The password must follow these guidelines:

- Must contain at least 6 characters
- Cannot contain any variation of cisco or ocsic (for example, abCiSCo12 is not valid)
- Cannot contain three or more same consecutive characters (for example, a password that contains AAA or 888 is not valid)
- Must contain at least one uppercase letter, one lowercase letter, one number, and one special character (special characters include !, @, and #)

Step 9   Reenter the ISSIG administration console password when you are prompted to do so, then press **Enter**.

Step 10   When you see the "Password accepted" message, press **Enter**.

Step 11   When you are prompted to begin the installation, type **y** then press **Enter**.

    The ISSIG software installs. A progress bar indicates how the installation is proceeding.

Step 12   When you are prompted whether you want to reboot the server, type **y** then press **Enter**.

    The server reboots.

Step 13   When you see the log in prompt, log in as the Linux root user and press **Enter**.

    If you are using this procedure to upgrade the ISSIG software, the upgrade procedure is complete. Do not perform the following two steps.

Step 14   Take these actions to run the network configuration script and configure eth1:

   a.   Enter this command:

   [root]# **network_config**

   b.   At the **Enter option** prompt, press **3** then press **Enter**.

   c.   Enter an IP address for eth1, then press **Enter**.

   d.   Press **A** to apply the configuration that you entered an exit the configuration script.

   e.   When you are prompted whether you want to apply the configuration now, press **Y** then press **Enter**.

Step 15   Take these actions to run the ISSIG configuration script and configure required options:

   a.   Enter this command:

   [root]# **issig_config**

   b.   Choose the following options from the ISSI Gateway Configuration menu and configure each option as appropriate for your deployment:

   –   **IPICS/P25 Gateway Site ID**—6 hex value of the proxy unit ID for multicast communications. Valid values are 000001 through FFFFFC.

   –   **RFSS ID**— 2 hex value that identifies the RF subsystem in a P25 network. Valid entries are 01 through FE.

   –   **System ID**— 3 hex value that identifies the home system. Valid values are 001 through FFF.

   –   **WACN ID**—Wide Area Communication Network Identifier. A 5 hex value that sets the home network identity, which is hard-coded into the radio SU by a data interface. This option identifies the home network in which the radio can work. Valid entries are 00001 through FFFFE.

   c.   Press **A** to apply the configuration that you entered an exit the configuration script.

   d.   When you are prompted whether you want to apply the configuration now, press **Y** then press **Enter**.

   e.   When you are prompted to start the server, press **Y** then press **Enter**.

Provisioning the ISSIG on the Cisco IPICS Server

This section provides an overview of provisioning the ISSIG. You perform this procedure after you install the ISSIG.

For more detailed information about ISSIG provisioning steps and options, see *Cisco IPICS Administration Guide*.

Before You Begin

Configure the Network Location Register (NLR) as described in *Cisco Network Location Register User Guide*. This document is available at:

http://www.cisco.com/en/US/docs/interoperability_systems/c_ipics/451/issi/nlr_user_guide/network_location_register_ug.html

To provision the ISSIG, follow these steps:

Procedure

Step 1   From the Cisco IPICS Administration Console, take these actions to upload an ISSIG descriptor file:

   a.   From the **Configuration** drawer, click **Descriptors**.

   b.   Click **Add**.

   c.   From the Descriptor Type drop-down list, choose **ISSI Gateway**.

   d.   In the File to Upload field, enter the name of the ISSIG descriptor file that you want to upload.

   You can use the **Browse** button to open the Choose File window, then navigate to the file that you want, highlight it, and click **Open**.

   e.   Click **Save**.

   Note   If you need to modify a descriptor file, see the "Updating Radio and Tone Descriptors" section in *Cisco IPICS Server Administration Guide*.

Step 2 From the Cisco IPICS Administration Console, take these actions to add an ISSIG:

   a. From the **Configuration** drawer, click **Radios**.

   b. Click **Add** and choose **Add ISSI Gateway**.

   c. Configure options the General tab for the new ISSI gateway as appropriate for your deployment, then click **Save**.

   For information about these options, see the "Adding a Radio" section in *Cisco IPICS Server Administration Guide*.

   d. Click the **IDC** tab and configure options as appropriate for your deployment, then click **Save**.

   For information about these options, see the "Adding a Radio" section in *Cisco IPICS Server Administration Guide*.

   e. Click the **Selectors** tab and choose the selectors that you want to be enabled for this ISSIG. The list of selectors that are available are defined in the radio descriptor.

   f. Click the **Controls** tab and choose the controls that you want available for this ISSI gateway's users.

   g. Click the **Services** tab and choose the services that you want to be available for the users of this ISSIG.

   h. Click **Associations** and associate users to the ISSIG as appropriate for your deployment

   For information about making these associations, see the "Associating a User to a Radio From the Radios Window" in *Cisco IPICS Server Administration Guide*.

Step 3 From the Cisco IPICS Administration Console, take these actions to add a PTT channel for the ISSIG:

   a. From the **Configuration** drawer, click **Channels**.

   b. Click **Add**.

   c. Configure options the General tab for the channel as appropriate for your deployment, then click **Save**.

   In the Media Connections Assignments area, make sure to choose **ISSIG** from the Type drop-down list and configure appropriate settings.

For information about these options, see the "Viewing and Editing Channel Details" section in *Cisco IPICS Server Administration Guide*.

   d. Click the **IDC** tab and configure options as appropriate for your deployment, then click **Save**.

For information about these options, see the "Viewing and Editing Channel Details" section in *Cisco IPICS Server Administration Guide*.

Step 4   From the Cisco IPICS Administration Console, take these actions to configure options for users who will communicate through the ISSIG in native mode:

   a. From the **User Management** drawer, click **Users**.

   b. Click **Add**.

   c. Configure and save options the tabs in this window as appropriate for your deployment.

In the Communications tab, make sure to choose the ISSI descriptor name for your ISSIG from the Add drop-down list in the Radio Preferences area and configure settings as appropriate.

For information about these options, see the "Adding a User" section in *Cisco IPICS Server Administration Guide*.