Cisco Voice Routing Center Installation Procedure, Software Version 1.1

This document describes the installation process for the Cisco Voice Routing Center (VRC). This installation procedure applies to the Cisco VRC running as a standalone application.

If you are using VRC integrated with PTC, we recommend that you perform the integrated PTC/VRC installation as documented in the PTC installation guide. This procedure installs PTC first and then installs VRC.

Refer to the *Cisco Packet Telephony Center Installation and Configuration Guide* for more information.

Cisco Packet Telephony Center documentation is available at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/ptc/2_1/index.htm

Contents

This document contains the following sections:

Introduction to VRC

This section provides an introduction to the Cisco Voice Routing Center (VRC).

The Cisco VRC is a graphical user interface (GUI) based network management tool specifically designed for managing dial plans in a Voice-over-IP (VoIP) network.

VRC Version 1.1 is targeted for H.323-based networks. VRC is a software product that runs on Sun servers and provides a GUI client running within a browser on PCs running the Windows operating system.

VRC software can be used:

- As a standalone application
- Integrated with Packet Telephony Center (PTC)

You can deploy VRC to discover the dial plan of an existing network and you can use it to design a new dial plan incorporating Cisco routers running as gateways, gatekeepers, and directory gatekeepers.

The VRC application is a tool for dial plan provisioning encompassing:

- Discovery of existing dial plan configurations
- Design of new dial plan configurations
- Validation of new dial plan configurations
- Preview of new configurations
- Distribution of new configurations to network elements
- Archiving of existing dial plan with the ability to restore an earlier configuration

The VRC application consists of a centralized dial plan management server and web-based clients distributed across an IP network. The server uses a database for storing configuration information and is responsible for all direct interaction with each managed network element. These communications occur using the Telnet and TFTP protocols or using the Cisco IE2100 supplemented with HTTP for certain network elements.

User administration is managed by the Cisco CNS security module with an embedded LDAP directory server.

Installation Procedure

The VRC installation process is divided in to the following sections:

Installation Overview

This section describes how to install the VRC server software as a standalone application. This installation procedure applies to Solaris Versions 2.7 and 2.8.

The VRC server software installation includes the installation of the following applications:

- Java Runtime Engine (Version 1.3.1.01)
- Tomcat Servlet Engine (Version 3.3.1)
- CNS Security Service API module (Version 1.1)

- DCL Directory Administration (Version 2.5)
- CNS Event Bus (Version 6.4)
- MySQL Database Management software (Version 3.23.51)
- VRC Server Software (Version 1.1)

Preinstallation Considerations

1. VRC software requires 300 MB of disk space for installation and for storing temporary files. Be sure that you have sufficient disk space before you begin the installation process.
2. VRC software assumes that Perl software (Version 5.0 or later) is already installed on the Solaris platform. For Solaris Version 2.8, Perl is part of the operating system installation. For Solaris Version 2.7, you must install Perl manually. The Perl executable file must be in a directory defined in the $PATH environment variable or it must reside in either the /usr/bin or /usr/local/bin directory.
3. If Tomcat, CNS Security API, CNS Event Bus, DCL Administration, MySQL, and/or Java software are already installed on the Solaris platform and you do not plan to reinstall them as part of the VRC server installation, you must note the directories where they are installed (for example, Tomcat might have been installed in the directory /usr/local/tomcat; MySQL might have been installed in the directory /usr/local/mysql; Java might have been installed in the directory /usr/local/java; CNS Security API might have been installed in /opt/cisco/vnm/common/cnsapi; CNS event bus might have been installed in /usr/tibco/tibrv; and DCL Administration software might have been installed in /usr/dcdsrvr).
4. If Tomcat Servlet Engine, MySQL, and VRC software (earlier version) are already running on the platform, you must stop these processes and the VRC server process before stopping the MySQL database engine. Use the stop_server.sh command to stop MySQL, Tomcat, and the VRC software.
5. Only the root user can run the VRC installation procedure. Contact your Solaris system administrator to help you with the installation and/or login as the root user.
6. The default values for the installation questions are displayed next to the prompt. If you do not provide an alternate answer, the install script uses the default answer. To choose the default, press **Enter** or **Newline**.
7. We recommended that you answer yes (or the default option) to the installation questions. This ensures that the install script performs the installation and configures the environment correctly. If you do not provide an alternate answer, the install script uses the default answer.

Installation Package

The installation package consists of two files:

- install.sh
- gdpm_XXX.tar

  Where XXX is the current version of the software (for example, gdpm_1.1_6_B.tar means that you are installing Version 1.1, load 6, build B).

You can download these files from the Cisco website or obtain them from a CD.

Copy these files to a directory on the Solaris platform and change to the directory where these files are located prior to installation.

Running the Installation Script

You must be logged in as a root user before running the installation script.

To start the installation process, enter the following command:

sh ./install.sh

This command runs the install script.

Answer the questions as necessary to continue and complete the installation.

Installation Process

The installation process executes the following tasks:

1. Creates the necessary directories.
2. Creates a VRC system user account.
3. Configures the TFTP Server.
4. Installs Java.
5. Installs Tomcat.
6. Installs the CNS API.
7. Installs the DCL Directory Adminstration software (LDAP server).
8. Installs the CNS Event Bus.
9. Installs MySQL.
10. Installs VRC.
11. Configures MySQL and creates the database.
12. Creates the VRC user environment files.
13. Removes the temporary files and directory.
14. Restart the UNIX server.
15. Creates VRC software user accounts.

Creating the Directories

The installation process creates the following directories:

- A temporary directory (/tmp/gdpm.temp) to extract the installation files from the installation package.
- The directory /usr/local if it does not already exist. This is the parent directory for Tomcat, MySQL, and Java software.
- The directory /opt/vnm as the home directory and a link to the directory opt/cisco/vnm for the user account created by the installation process. A subdirectory /opt/cisco/vnm/gdpm_install is created to store installation-related files.
- The directory GDPM under the TFTP boot directory. This is typically /tftpboot/gdpm. The subdirectories /tftpboot/gdpm/clientinput and /tftpboot/gdpm/batch are created to facilitate file transfers between VRC users and the VRC server.

Creating a VRC System User Account

The installation process creates a user account (vnm), if necessary, as the system user for the VRC Server software.

If the installation process creates the user account, it also creates a group (vnm) and assigns the user to that group. When you are the system user and you log in as a VRC user for the first time, you need to choose a password.

The VRC system user owns the GDPM directory created under the TFTP boot location.

Configuring the TFTP Server

VRC Server software uses the TFTP boot directory for:

- Exchanging files between the VRC client and the server
- Retrieving the network element configuration information.

The installation process starts the TFTP server process if it is not already running. To enable the TFTP server on the target platform, the installation process:

- Edits the /etc/inetd.conf file and uncomments the line containing tftp configuration
- Creates the directory name specified in that line (for example, /tftpboot).
- Restarts the inetd daemon by sending the Hangup (HUP) signal to the process.
- Creates a GDPM directory in the TFTP Boot folder and assigns the ownership of this directory to the VRC system user.

Installing Java

The installation process prompts you to choose whether to install the Java runtime engine or use an existing version of Java software. VRC software requires Java Version 1.3 or later for its operation.

If you choose:

- Install Java, Java (Version 1.3.1.01) is installed in the directory /usr/local/ java. The Java installation requires you to accept the Java Licensing Agreement.
- Not to install Java, you must enter the location of the existing Java software.

Installing Tomcat

The installation process prompts you to choose whether to install Tomcat or use an existing version of Tomcat software. VRC software requires Tomcat Version 3.3.1 or later for its operation.

If you choose:

- Install Tomcat, Tomcat (Version 3.3.1) is installed in the directory /usr/local/tomcat and the necessary Tomcat configuration files are set up to work with the VRC software.
- Not to install Tomcat, you must enter the location of the existing Tomcat software. The installation process copies the necessary Tomcat configuration files into the Tomcat (conf) directory.

Installing the CNS API

The installation process prompts you to choose whether to install the CNS API or use an existing version of the software.

If you choose:

- Install the CNS API (Version 1.1) is installed under the directory /opt/cisco/vnm/common (/opt/visco/vnm/common/cnsapi).
- Not to install CNS API, you must enter the location of the existing software.

Installing the DCL Directory Administration Software

The installation process prompts you to choose whether to install DCL Directory Administration software or use an existing version of the software.

If you choose:

- Not to install the DCL Directory Administration software, you are responsible for creating the LDAP user accounts required for secure administration of the VRC software.
- To install the DCL Directory Administration software, Version 2.5 is installed. Answer the installation questions (prompted by the DCL Admin Install program) as indicated in the following example:

Recommended user input is given in bold letters. To choose the default values, press **Enter**. When the prompt displays 'Do you want to continue [Y]?', press **Enter** to continue the installation process.

1. Enter supplied CD Key [] > **<your registration number>**
2. Do you wish to upgrade ? (Y/N/Q) [N] > **N**
3. Please enter the target directory in which you wish to install the product Server [/usr/dcdsrvr] > **/usr/dcdsrvr**
4. Enter the country name [*] or * for advanced > *
5. Enter the Admin Node as a full directory name. For example, /c=GB/o=DATA CONNECTION LTD [] >/**o=cisco**
6. Server Name [] > **<Your UNIX Server Host Name>**
7. Please enter user name [dcladmin] > **vnm**
8. Please enter user group [dclgroup] > **vnm**
9. If the DCL software is installed successfully, the system prompts you as indicated in the following example:

   Do you wish to run the DC Directory System Configuration Utility now? (Y/N) [N] > Press **Enter** to continue without running the configuration utility.

The DCL Administration software installation is complete.

Installing the CNS Event Bus

The installation process prompts you to choose whether to install the CNS Event Bus or use an existing version of the software.

Note You must install the CNS Event Bus to use a Cisco IE2100 device in your network.

If you choose:

- Not to install the CNS Event Bus, you must enter the location of the existing CNS Event Bus software.
- To install the CNS Event Bus, Version 6.4 is installed. The installation requires you to accept the Licensing Agreement. Answer the installation questions (prompted by the CNS Event Bus Install program) as indicated in the following example:

Recommended user input is given in bold letters. To choose the default values, press **Enter**. When the prompt displays 'Do you want to continue [Y]?', press **Enter** to continue the installation process.

1. Do you accept the terms and conditions of this agreement [y]? **y**
2. The TIB(r)/Rendezvous(tm) Software V6 can be installed by the system installation program. Would you like to use that [y]? **y**
3. Where do you want to install the TIB/Rendezvous software? Default is /usr/tibco/tibrv [?,q] **Enter**
4. Install TIB/Rendezvous V6 Runtime components [y,n,?,q] **y**
5. Install TIB/Rendezvous V6 Development components [y,n,?,q] **n**
6. Install TIB/Rendezvous V6 source files (C++/perl/examples) [y,n,?,q] **n**
7. Install TIB/Rendezvous V5.X legacy headers/libraries [y,n,?,q] **n**
8. Install TIB/Rendezvous V5.X legacy runtime libraries [y,n,?,q] **n**
9. Do you want to install these as setuid/setgid files [y,n,?,q] **y**
10. Do you want to continue with the installation of <TIBRV> [y,n,?] **y**
11. Do you wish to install the HTML Documentation component? [y] **n**

The CNS Event Bus software installation is complete.

Installing MySQL

The installation process prompts you to choose whether to install MySQL or use an existing version of MySQL software.

If you choose:

- Install MySQL (Version 3.23.51), MySQL is installed in the directory /usr/local/mysql.

Note If you install MySQL, the MySQL directory is owned by vnm. If you are using a shared machine, you may have to adjust the permissions on this directory to ensure that applications have the appropriate permission.

- Not to install MySQL, you must enter the path of the existing MySQL directory.

The MySQL directory required for exchanging files between the VRC Server and this application is assigned the ownership of the VRC system user as part of the installation process.

Installing the VRC Software

The installation process prompts you to choose whether to install VRC software or use an existing version of VRC software.

If you choose:

- Install VRC Server, VRC (Version 1.1) is installed in the directory /opt/cisco/vnm/gdpm. As part of the installation, the VRC client software is copied into the Tomcat Web Application (webapps) directory. This facilitates the download of the VRC client software to web clients, when they log in to the VRC server.
- Not to install VRC, you must enter the location of the existing VRC software.

Configuring MySQL and Creating the Database

The installation process prompts you to choose whether to configure MySQL and create the MySQL database.

If you choose to configure MySQL, the installation process drops the VRC database if it already exists and then creates it again. Also, it creates a MySQL user account with all the privileges for using this database.

Creating the VRC User Environment

The installation process creates the VRC system user environment (for K-shell and C-shell) based on the installation location of Tomcat, Java, CNS Bus Event, MySQL, and VRC software.

The installation process checks to see if the profile for the VRC user already exists. If so, it prompts you to verify whether the profile can be appended to the existing profile. If you agree, the profile is appended to the existing profile.

Note If the profile exists and you choose not to append the existing profile, the installation process copies the profile (kshenv.gdpm) and the C-shell (cshenv.gdpm) environment files into the VRC user's home directory. You must copy the contents to your existing profile manually before you can use the VRC software.

If the profile does not exist, the installation process copies the profile into the VRC user’s home directory.

Removing Temporary Files

The installation process prompts you to remove the created temporary files and directory (/temp/gdpm.temp) after the installation is completed.

If you choose:

- To delete the files, the temporary directory and the extracted temporary files are removed.
- Not to delete the files, they remain in the /tmp/gdp.temp directory and subsequent installations overwrite them.

Restarting the UNIX Server

If you chose to install DCL Admin software, and if the install process updated the system file for providing enough resources to the DCL Admin software, you are prompted to reboot the UNIX system.

If you choose:

- To reboot, the install script reboots the system.
- Not to reboot, you need to manually restart the system so that any changes made by the install script to the system file become effective.

Creating the VRC User Accounts

If you chose to install DCL Directory Administration software, you must create VRC user accounts in the LDAP server.

The VRC application needs four predefined user accounts with different VRC privileges. Use these predefined accounts as a base to get started using VRC.

- admin
- DemoSysAdmin1
- DemoGlobalNetOper1
- DemoNonAdminUser1

To create these accounts:

Step 1 Log out as the root user.

Step 2 Log in as the VRC system user (vnm). If this user account was created by the VRC installation process, you must create a new password for this user and make a note of the password.

Step 3 Change the directory to gdpm_install.

Step 4 Enter the following command:

dcd_setup.sh vnm <password created in step 2 above>

This script creates the four predefined user accounts.

The installation process is complete.

Running the VRC Server

To start the VRC server after installation:

Step 1 Log in as the VRC system user.

Step 2 Enter a new password if necessary.

Step 3 Run the script **start_server.sh** (this script is located in $HOME/gdpm/bin directory).

This starts the MySQL, Tomcat, and VRC server processes. The MySQL process is started before the VRC server because the VRC server requires the MySQL database engine for proper initialization. Make sure that these processes are started successfully.

Uninstalling VRC

This section describes how to uninstall the VRC server software.

The uninstall file is part of the installation package for VRC server software and is locatedin the /opt/cisco/vnm/gdpm_install subdirectory.

Note You must be the root user to uninstall the VRC server software.

Step 1 Locate the uninstall file in the /opt/cisco/vnm/gdpm_install subdirectory.

Step 2 From the install directory, run the following command:

```
sh ./uninstall.sh
```

The uninstall process removes the following:

- $GDPM_HOME directory
- /tftpboot/gdpm directory
- All GDPM-related files in the Tomcat directory
- MySQL

After the uninstall is finished, the program does not:

- Remove other software that might be installed by the VRC installation, such as Java or Tomcat.
- Stop the TFTP daemon process.
- Return the original .profile (if you created or updated the .profile during installation).

If the VRC software was installed in standalone mode, youare also prompted to remove the following software applications:

- CNS Security Service API module
- DCL Directory Administation software
- CNS Event Bus

Installation FAQs

Table 1 lists questions and answers that related specifically to installing VRC.

Table 1 Frequently Asked Installation Questions

Question	Answer
Which VRC server platform do you recommend for the easiest installation?	Solaris 2.8 from a Solaris full OEM install. With this, Perl is also installed. It is easiest to let the VRC installation install Tomcat, MySQL, Java Runtime Engine, and VRC. We recommended that you answer the default option (yes in most cases) to the installation questions.
I noticed that the VRC install scripts include Perl scripts. Am I required to install Perl?	Yes. You need to download it from the Perl website, (http://www.perl.com) and install the Perl software before you install the VRC software.
When I choose "yes" to the question “Do you want to configure MySQL?”, I receive the following error. What does this mean? Starting Mysql Server process ... ERROR 1008 at line 1: Can't drop database 'vrc'. Database doesn't exist Database is not removed as it may not exist.	The database does not exist. VRC will create it at startup, so there will not be a problem.
Must I log into the server as the new user defined during installation before starting VRC?	Yes. Once installation is complete, you must log out as root and log in to the server again as the new user to pick up the new profile before running the VRC software.

Related Documentation

The following documentation is related to the Cisco VRC Software.

- *Cisco Voice Routing Center Online Help, Software Version 1.1*
- *Cisco Voice Routing Center User Guide, Software Version 1.1*
- *Release Notes for the Cisco Voice Routing Center Software Version 1.1*

Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following URL:

http://www.cisco.com

Translated documentation is available at the following URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

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You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

http://www.cisco.com

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.

- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

http://www.cisco.com/register/

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.