



Cisco Insight Reporter **Installation Guide**

Release 3.2.0

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CONTENTS

Preface i

Document Revision History	ii
Audience	ii
Organization	ii
Related Documentation	iii
Conventions	iii
Obtaining Documentation and Submitting a Service Request	iv

CHAPTER 1. Preparing for Installation 1-1

1.1 Hardware Requirements	1-2
1.2 Software Requirements	1-2
1.2.1 Operating System	1-2
1.2.2 Java Runtime Environment (JRE)	1-3
1.2.3 Supported Browsers	1-3
1.2.4 Screen Resolution	1-3
1.2.5 Working with Firewall	1-3
1.2.6 Supported Databases	1-4
1.3 Service Control Software Components Requirements	1-1
1.4 Deployment Scenarios	1-1
1.4.1 Virtual Machine Scenario	1-2
1.4.2 Single Appliance Scenario	1-2
1.4.3 Multiple Appliance Scenario	1-7
1.4.4 Multi-instance Scenario	1-7

CHAPTER 2. Installing Cisco Insight Reporter v3.2 2-1

2.1 Downloading the Installation Package	2-2
2.2 Installing Cisco Insight Reporter v3 .2	2-3
2.2.1 Full installation	2-4
2.2.2 Integration with an Existing MySQL v5.1 Server	2-7
2.2.3 Upgrade Cisco Insight Reporter from release v2.0/3.0/3.1	2-10
2.3 Checking the Installation	2-11
2.4 Un-installing Cisco Insight Reporter v3.2	2-12

- 2.5 Installing MySQL for Insight Reporter v3 .2 on Solaris 2-13
- 2.6 Setup and Installation for HA Scenario 2-17
- 2.7 Enabling HTTPS 2-17

CHAPTER 3. Reconfiguring Cisco Insight Reporter v3.2 3-1

- 3.1 Setting the Application Properties 3-1
- 3.2 Configuring Traffic Databases and Devices 3-2
- 3.3 Configuring Network Topology 3-6
- 3.4 Configuring Accounts 3-9
- 3.5 Running the First Report 3-11

Troubleshooting 1

- 4.1 Troubleshooting NF_INI_VALUES table Data 2
- 4.2 Troubleshooting NF_INI_VALUES not getting updated 5
- 4.3 Troubleshooting the Collection Manager 5
- 4.4 Troubleshooting MySQL compatibility issue 5
- 4.5 Troubleshooting Tomcat not started 6
- 4.6 Troubleshooting MySQL start-up and connectivity problem 6
- 4.7 Troubleshooting the “No Data Found” message when running reports 6
- 4.8 Troubleshooting no interface showing any associated traffic 7
- 4.9 Troubleshooting “NO more sessions allowed” 7
- 4.10 Troubleshooting user interface that is not loading correctly 7
- 4.11 Troubleshooting application startup problem 8
- 4.12 Troubleshooting connectivity with Traffic Database 8
- 4.13 Troubleshooting issues when setting a Master Device 9
- 4.14 Troubleshooting Connection Timeout from Traffic Database 9
- 4.15 Troubleshooting if User is not able to view full DB Query in logs 9
- 4.16 Troubleshooting if User wants to view aggregation interval in case of non aggregation 9
- 4.17 Troubleshooting if Remote DB Connection failed 10
- 4.18 Troubleshooting if Device discovery failed 10
- 4.19 Troubleshooting if error comes during Report Execution 10
- 4.20 Troubleshooting if User Login fails 10
- 4.21 Troubleshooting no data is displayed in report after successful execution (Report Wizard) 10
- 4.22 Troubleshooting if “Auth Token is not valid.” Message appears 10
- 4.23 Troubleshooting reports are showing data in Bar chart however area and line charts are not working fine 11

- 4.24 Troubleshooting if report is taking long time to generate (Report Wizard) 11
- 4.25 Cisco Insight Reporter error codes 11



Preface

This preface describes who should read the *Cisco Insight Reporter v3.2 Installation Guide*, how it is organized, its document conventions, and how to obtain documentation and technical assistance.

It contains the following sections:

[Document Revision History](#)

[Audience](#)

[Organization](#)

[Related Documentation](#)

[Conventions](#)

[Obtaining Documentation and Submitting a Service Request](#)

Document Revision History

Cisco Service Center Release	Part Number	Publication Date
Release 3.2.0	OL-26667-01	March 22, 2012

Audience

This guide provides information about the installation and first configuration steps of the Cisco Insight Reporter v3.2 application. The *Cisco Insight Reporter v3.2 Installation Guide* is addressed to:

Technicians responsible for the installation of the system.

Technicians responsible for the upgrade of the system from v2.0 to v2.0.1, v3.0.0 and v3.1.0.

Administrators responsible for setting up the system and making the initial provisioning.



Note This document assumes that the system administrator has basic familiarity with the Red Hat Enterprise Linux (RHEL) or CentOS and Solaris operating systems, MySQL Server, Apache Tomcat application server and network configuration.

Organization

The *Cisco Insight Reporter v3.2 Installation Guide* is categorized into the following chapters:

Table 1. Document Organization

Chapter	Title	Description
1	Error! Reference source not found.	Provides details about the hardware and software required to install the application. It describes the various scenarios under which the application can be used.
2	Installing Cisco Insight Reporter v.2	Provides instructions on how to install and uninstall the Cisco Insight Reporter v3.2.
3	Upgrade Cisco Insight Reporter v3.1 to Insight Reporter v3.2	Provides instructions on how to upgrade Cisco Insight v3.1 to Cisco Insight Reporter v3.2.
4	Configuring Cisco Insight Reporter v.2	Provides detail about the minimal required steps for the set up and some guidelines to help installation.
5	Troubleshooting	Provides troubleshooting details for the commonly encountered problems.

Related Documentation






The *Cisco Insight Reporter v3.2 Installation Guide* should be used in conjunction with the following documentation:

Cisco Insight Reporter v3.2 User Guide

Conventions

The document uses the following conventions:

Table 2. Conventions

Convention	Indication
bold font	Commands and keywords and user-entered text appear in bold font .
<i>italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
[]	Elements in square brackets are optional.
{ x y z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
String	A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
<code>courier font</code>	Terminal sessions and information the system displays appear in <code>courier font</code> .
< >	Nonprinting characters such as passwords are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.
 Note	Means <i>reader take note</i> .
 Tip	Means <i>the following information will help you solve a problem</i> .
 Caution	Means <i>reader be careful</i> . In this situation, you might perform an action that could result in equipment damage or loss of data.
 Timesaver	Means <i>the described action saves time</i> . You can save time by performing the action described in the paragraph.
 Warning	Means <i>reader be warned</i> . In this situation, you might perform an action that could result in bodily injury.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

CHAPTER 1. **Preparing for Installation**

The Cisco Insight Reporter v3.2 software requires installation on appropriate hardware, as well as an initial setup to make it operational and generate data traffic reports.

This chapter contains the following sections:

[Hardware Requirements](#)

[Software Requirements](#)

[Service Control Software Components Requirements](#)

[Deployment Scenarios](#)

1.1 Hardware Requirements

You can install the Cisco Insight Reporter v3.2 on any server with following minimum hardware specifications:

Table 2. *Hardware Specifications*

Components	Specifications
CPU	Single or dual-core 2.0 GHz or greater Intel x86/64 processor OR 32 /64 bit single or dual-core 2.0 GHz or greater Scalable Processor Architecture (SPARC) processor
RAM	4 GB or greater
Free disk space	10 GB for the operating system + free space for data retention. Recommended size is greater than 100 GB
Network interface	Single 100BASE-T Ethernet or greater

If you have any questions, you can contact Cisco Support to get an estimate of the required CPU power, RAM capacity, and disk storage.



Note

The performance of the Cisco Insight Reporter depends on the size of the SCE/ASR1K deployment and the number of users simultaneously running the reports. To get an optimal performance, the hardware may have to be scaled accordingly.

The above recommendations are only valid for hosts dedicated to running the Cisco Insight Reporter application. In case the same workstation is used to co-host Cisco Insight Reporter with other applications, the hardware has to be upgraded accordingly in terms of RAM, CPU and storage.

1.2 Software Requirements

You can install the Cisco Insight Reporter v3.2 on any server with following software specifications:

1.2.1 Operating System

Table 3. *Supported Operating Systems*

Operating System	Version	Architecture
Red Hat Enterprise Linux or CentOS	5.x	Intel 32/64 bit
Solaris	9 or 10	Intel 32/64 bit SPARC 32/64 bit



Note The recommended operating system is Red Hat Enterprise Linux version 5, 64-bit. Please see the chapter on troubleshooting for platform specific installation considerations.

1.2.2 Java Runtime Environment (JRE)

Cisco Insight Reporter v3.2 requires JRE6. If it doesn't find JRE6 on the system, it will automatically install it.

1.2.3 Supported Browsers

The Cisco Insight Reporter v3.2 is compliant with the following browsers:

Firefox, v3.0 and later

IE, v6.0 and later

Google Chrome v5.0 and later



Note As a prerequisite, the Flash Player v10.x or above should be installed on all client PCs that will be used to display reports.

1.2.4 Screen Resolution

The application GUI supports a variety of screen resolution modes including 1280 X 1024, 1024 X 768, and 1680 X 1050 with consistent support of 4:3 and 16:9 aspect ratios (wide screen). It is recommended that you use a minimum vertical resolution of 1024 pixels.



Note Resolution of 1024X768 is supported with vertical and horizontal scroll bars. On other resolutions, scrollbars may appear if the screen resolution is lower than the application workspace or if there are too many toolbars configured on the browser. To maximize the user experience, it is suggested to set the browser to full-screen mode (F11 function key).

1.2.5 Working with Firewall

Ensure that the TCP/IP ports you are using are not blocked by a firewall or port blocking service.

Configure firewall to allow traffic to the following:

Port for running the local MySQL 5.1 database (default is 3306)

- Port for running the application (HTTP-default is 80 and HTTPS-default is 443)
- Port for connecting to TACACS+ server (default is 49)
- Connections to remote database servers storing Traffic Data being populated by Cisco Collection Manager(s)
- Connections to Subscriber Manager
- Connections to Email(SMTP) server

Ensure that the UDP ports you are using are not blocked by a firewall or port blocking service.

- Port for connecting to RADIUS server (UDP 1812)

If using an existing MySQL instance, ensure that:

- MySQL server running,
- Network connections to the server are enabled
- The network port you specify in firewall configuration is the one configured on the server.



Note

Cisco Insight Reporter does not work in SELinux enabled environment.

To Check the status of SELinux use the following command:

```
Shell> /usr/sbin/getenforce
```

If the output of this command is not “Disabled”, edit “/etc/selinux/config” to disable SELinux and set

```
“SELINUX=disabled”
```

1.2.6 Supported Databases

The Cisco Insight Reporter v3.2 supports multi-vendor drivers for connecting to the Collection Manager databases to retrieve traffic data and SCE/ASR1K configurations.

The application is distributed with an embedded MySQL 5.1 server (required for its internal operations) but can also integrate an existing MySQL 5.1 instance, when installed on a pre-configured environment running Cisco Collection Manager software. In that case, the database engine must be MySQL 5.1 and it will host both the Insight Reporter’s proprietary schemas and the CM schema containing traffic data.

Cisco Insight Reporter can also be configured to work with external traffic databases populated by Cisco Collection Manager(s).

The supported vendors and versions for external traffic databases are:

- Oracle v 9.x or later
- Sybase ASE v 12.x or later

MySQL v 5.x



Note

For licensing reasons, the default installation kit only provides the JDBC driver to connect to external MySQL 5.x traffic databases.

To configure the application to use **Sybase or Oracle as traffic databases, please copy the JDBC connector JAR file, provided with the respective database engine, to the following directory of the application:**

```
< [user home directory]/Insight/apache-tomcat-6.0.20/webapps/insight/WEB-INF/lib >
```



Note

If the Collection Manager database and Cisco Insight Reporter v3.2 are installed on the same machine, the database engine shall be MySQL 5.1.

1.3 Service Control Software Components Requirements

The Cisco Insight Reporter software works with Service Control Management Suite, the following software component versions are required:

Table 4. *SCM Component Version*

Component	Version
Subscriber Manager	from 3.5.0 to 3.7.5
Collection Manager	from 3.5.0 to 3.7.5 (for ASR1K support v3.7.0, v3.7.1 and v3.7.5 is required)
SCE	from 3.5.0 to 3.7.5
ASR1K	XE 3.4 & 3.5 with SCE/ASR feature enabled



Note

In future, if Collection Manager v3.7.1 will be removed, in that case ASR1K users should shift to Collection Manager v3.7.5 & SCE users should shift to Collection Manager v3.7.0.

1.4 Deployment Scenarios

The Cisco Insight Reporter v3.2 can support different deployment scenarios to match different business requirements.



Note

Traffic databases are used to store metadata for SCE/ASR1K devices and traffic data (populated by Collection Managers).
 The database bundled with Cisco Insight Reporter v3.2 is used for internal usage and data caching while generating reports.
 Administrator may configure Cisco Collection Manager(s) to push the traffic data to the database server hosting the Cisco Insight Reporter’s database OR vice versa, in which case the same database server is used for storing internal data as well as traffic data.

For hardware configuration, please refer to [Hardware Requirements](#).
 These deployment scenarios are described in the following sections:

1.4.1 Virtual Machine Scenario

The Cisco Insight Reporter v3.2 can be installed on a VMWare virtual machine running a compatible operating system. The resources allocated to the virtual machine should be configured according to the target deployment scenario (number of SCEs/ASR1Ks, configuration of RDRs and NF records, other software installed on the same virtual machine, etc.)



Note

The virtual machine scenario is reserved for demos or trials with one or two SCEs/ASRs, no more than 10 real-time monitored subscribers and no transaction usage RDRs/NFRs enabled.
 For best performance, the VMWare image would typically contain only the Cisco Insight Reporter v3.2 software.

1.4.2 Single Appliance Scenario

In the single appliance scenario, Cisco Insight Reporter v3.2 is installed on a single appliance running supported versions of Red Hat Enterprise Linux or Solaris (depending on the bus architecture).

Table 5. *Single Appliance Scenarios*

Single Appliance Scenario	Description
Totally dedicated to Insight Reporter	This is the default and recommended, where the appliance is 100% dedicated to Insight Reporter v3.2. This is the recommended configuration for large SCE/ASR1k deployments.

<p>Shared with a traffic database and a Collection Manager software instance</p>	<p>This scenario is similar to the previous one, but it is used when only one Collection Manager is required and it is embedded in the CISCO Insight Reporter appliance (thus sharing the hardware resources with the application and the database).</p> <p>This is not a recommended scenario and should be used only for very small deployments. Performance of this appliance scenario gets reduced because it works in shared mode.</p>
<p>Shared with a traffic database</p>	<p>The Insight Reporter appliance also contains the traffic database (populated by one or more external CMs). The traffic database is MySQL and also hosts the Insight Reporter v3.1 internal schema (but still independent from the schema of Collection Manager)</p> <p>This scenario is used for small deployments with one to five ASR1Ks requiring only a single traffic database to store the NFR information.</p> <p>The number of supported SCE/ASR1ks is dependent on the NFR frequency (such as transactional or real-time subscriber monitoring).</p>

1.4.3 Multiple Appliance Scenario

The multiple appliance scenario is an extension of the single appliance scenario with support for high-availability and redundancy obtained by clustering the Cisco Insight Reporter v3.2 appliance.

Cisco Insight Reporter v3.2 provides high-availability and redundancy using:

Hardware clustering of two identical appliances to provide a “cold” fail-over solution. No data is lost in case of failure of one of the appliances, but all the pending operations with the clients are dropped and will need to be restarted.

MySQL database is bundled for internal operations. When configuring an active and stand-by cluster for Insight Reporter, the database can be configured with table replication to provide data consistency and to keep the tables of the clustered system in synchronized state.



Note Insight Reporter high-availability affects only the reporting capability, and not the traffic data collection and storage (addressed by the Collection Manager databases).

1.4.4 Multi-instance Scenario

Cisco Insight Reporter v3.2 supports the multi-instance scenario because it can use any traffic database as a data source. Traffic databases can be shared by different Insight systems.

As these traffic databases are accessed in read-only mode, several application instances can establish connections.

Through this deployment scenario, Cisco Insight Reporter supports Multi-tenancy and network segmentation concepts.



CHAPTER 2. **Installing Cisco Insight Reporter v3.2**

The Cisco Insight Reporter v3.2 software requires installation on appropriate hardware selected. Installation steps required to install the software, are captured in this chapter

This chapter contains the following sections:

[Downloading the Installation Package](#)

[Installing Cisco Insight Reporter v3.2.](#)

[Checking the Installation](#)

[Un-installing Insight Reporter v3.2](#)

[Installing MySQL Cisco Insight Reporter v3.2 on Solaris](#)

[Setup and Installation for HA Scenario](#)

[Enabling HTTPS](#)

The Cisco Insight Reporter software is distributed as an archive file available at <http://www.cisco.com>.

The installation package for each platform contains:

- Cisco Insight Reporter v3.2 software
- Web server (Apache Tomcat)
- MySQL v5.1 database.

2.1 Downloading the Installation Package

This section describes how to download and extract the package of Cisco Insight Reporter software.

To download and extract the installation package, perform the following steps:

Step 1 Connect to Cisco.com and download the software package.



Note

There are a number of installers available for download; select the installer according to your OS.

OS Name	File Name
Red Hat Enterprise Linux 5 - 32 bit	InsightReporter-<version no.>_rhel5-x86-32bit.zip
Red Hat Enterprise Linux 5 – 64 bit	InsightReporter-<version no.>_rhel5-x86-64bit.zip
Solaris 10 - SPARC 32 bit	InsightReporter--<version no.>_solaris10-sparc-32bit.zip
Solaris 10 - SPARC 64 bit	InsightReporter--<version no.>_solaris10-sparc-64bit.zip
Solaris 10 - Intel x86 32 bit	InsightReporter-<version no.>_solaris10-x86-32bit.zip
Solaris 10 - Intel x86 64 bit	InsightReporter-<version no.>_solaris10-x86-64bit.zip
Solaris 9 - SPARC 32 bit	InsightReporter-<version no.>_solaris9-sparc-32bit.zip
Solaris 9 - SPARC 64 bit	InsightReporter-<version no.>_solaris9-sparc-64bit.zip
Solaris 9 - Intel x86 32 bit	InsightReporter-<version no.>_solaris9-x86-32bit.zip

Step 2 Copy the file on the file system of the destination server.

Step 3 Connect as root on the server and extract the downloaded .zip file with the following command:

```
Shell> unzip InsightReporter-[Version]-[TargetOS]-  
[TargetArchitecture].zip
```

For example:

```
InsightReporter-3.2-solaris10-x86-64bit.zip  
InsightReporter-3.2-solaris9-sparc-32bit.zip  
InsightReporter-3.2-rhel5-x86-64bit.zip
```

2.2 Installing Cisco Insight Reporter v3.2

During the installation process, the script checks if all the required software components are available and compliant with the installation of Cisco Insight Reporter v3.2.

Depending on the availability of an existing MySQL v5.1 database server or presence of a previous Insight Reporter installation, the script can handle any of the following scenarios:

Full Installation of Insight Reporter v3.2: The server is compliant with the hardware and software requirements, but it does not have all Cisco Insight Reporter software components- the MySQL database server, the Apache-Tomcat web server, and the Java Runtime Environment (JRE).

Integration with an Existing MySQL v5.1 Server: A MySQL 5.1 database server has been previously installed and is being populated by one or more Cisco SCMS Collection Managers that receive traffic data from SCE/ASR1K devices. The Apache Tomcat web server and the Java Runtime Environment must not be present on the host. The script will install the appropriate packages.

Upgrade Cisco Insight Reporter v2.0/3.0/3.1 to v3.2: A Cisco Insight Reporter v2.0/3.0/3.1 has been previously installed and is being used to report on traffic populated by one or more Cisco SCMS Collection Managers that receive RDR/NetFlow from SCE/ASR1K devices. The scripts will upgrade the system to v3.2.

In the first scenario, a full installation is performed. The script installs all required packages and starts all the processes. If the script detects an existing installation of MySQL v5.1 server, the second scenario is automatically chosen.

In the second scenario, it prompts for the root access credentials to the database server and then creates the Insight Reporter v3.2 schema. Eventually, it installs the JRE (if not already present) and the Insight Reporter web application.

If the script detects an existing installation of Insight Reporter v2.0/3.0/3.1 server, the third scenario is automatically chosen. It then starts the process for upgrading the existing database schema with the additional tables and Insight Reporter application to v3.2.

2.2.1 Full installation

The script checks the server requirements and installs Apache Tomcat web server, MySQL Database server, the JRE and the Cisco Insight Reporter v3.2 software.

To install the installation package, perform the following steps:

Step 1 Locate and run the installer package:

```
cd <directory where installer was extracted>
./install.sh
```

You see code similar to following on your screen:

```
Shell> cd /root/installer
Shell> ./install.sh
```



Note To install Insight Reporter, user should be root user only.

Step 2 The script asks you to install a new user for installation or upgrade existing user from Cisco Insight Reporter v3.1 to v3.2. It creates/updates a folder with that OS username and copies all the files into this folder. A question similar to the following appears on your screen:

Enter the OS username that will be used to install/upgrade (root not allowed):

If you enter a **non-existing OS user**, Cisco Insight Reporter v3.2 fresh installation starts.

If you enter an **existing OS user** under whom, a previous v2.0/3.0/3.1 instance was installed, Cisco Insight Reporter v3.2 up-gradation starts (see section, [Upgrade Cisco Insight Reporter v2.0/3.0/3.1 to v3.2](#)).



Note This existing user of Insight Reporter can be distinguished under “/home” directory for Red Hat Enterprise Linux (RHEL) or CentOS and “/opt” directory of Solaris operating systems.

Step 3 The script asks you to install JRE6 only if it does not find JRE6 installed on the machine. A question similar to the following will appear on your screen:

```
Sun Java HotSpot(TM) JRE6 is required.
Do you want to install JRE6? [Y/N] (default Y):
```

If you press **Enter**, the installer script installs the JRE6. If it is not able to install JRE6 it exits the installation procedure.

If you press **N**, the installer script needs JRE6 to install the application and quits the installation procedure after giving a message.

Step 4 The script asks you to install the MySQL database server. A question similar to the following appears on your screen:

```
Do you want to install MySQL server? [Y/N] (default Y):
```

If you press **N**, the installer script needs MySQL database server to install the application and quits the installation procedure after giving a message.

If you press **Enter**, it continues with Step 5.



Note

On Solaris, MySQL has to be separately installed and hence the installer skips the above step. To install MySQL on Solaris, follow the instructions mentioned in the section on “Installing MySQL for Insight Reporter v3 .2 on Solaris”

In case, system already has MySQL database server then the above question does not appear on your screen and you need to follow the instructions mentioned in Integration with an Existing MySQL v5.1 Server.



Note

For any issues in connecting to MySQL server, see section [Troubleshooting “MySQL start-up/connectivity problem”](#) in the chapter on troubleshooting.

Step 5 The script asks you to enter the MySQL data directory for the MySQL server. A question similar to the following appears on your screen:

```
Enter MySQL data directory applicable for your installation (example /opt/mysql-data):
```

If you do not provide any value and press **Enter**, the installer script keeps asking the same question and does not proceed further until a valid input is entered.

If you enter `/opt/mysql-data` and press **Enter**, the installer script installs MySQL and uses the given input as the data directory.



Note

If you already have MySQL libraries, please remove those before installing the embedded MySQL otherwise the system will give “Library conflict is happening” error.

Step 6 The script starts the installation of JRE6 and MySQL database server on your system.

Similar to the following will appear on your screen:

```
Unpacking...
Checksumming...
Extracting...
UnZipSFX 5.50 of 17 February 2002, by Info-ZIP (Zip-
Bugs@lists.wku.edu).
  inflating: jre-6u22-linux-i586.rpm
Preparing...
#####
```

```

jre
#####
Unpacking JAR files...
    rt.jar...
    jsse.jar...
    charsets.jar...
    localedata.jar...
    plugin.jar...
    javaws.jar...
    deploy.jar...

Done.
Preparing...
MySQL-client-advanced
#####
Preparing...
#####
MySQL-server-advanced
#####

PLEASE REMEMBER TO SET A PASSWORD FOR THE MySQL root USER !
To do so, start the server, then issue the following commands:

/usr/bin/mysqladmin -u root password 'new-password'
/usr/bin/mysqladmin -u root -h cisco password 'new-password'

Alternatively you can run:
/usr/bin/mysql_secure_installation

this will also give you the option of removing the test
databases and anonymous user created by default. This is
strongly recommended for production servers.

See the manual for more instructions.

Starting MySQL.[ OK ]
Giving mysqld 2 seconds to start
Starting MySQL^[[60G^[^[[0;32m OK ^[[0;39m]
echo "In order to remove completely MySQL server, you need to execute
the uninstall.sh script located under user home directory."
creating user [test]
Default password is same as the username
Please change the password for user test by giving below command
passwd test
Proceeding to configuration
Enter the Insight local database host name (default is local host)
Enter the Insight local database port (default is 3306)
CONGRATS!! Installation finished
To re-configure the application please execute config.sh in the [user
home directory]/Insight/bin
To uninstall the application please execute uninstall.sh in the [user
home directory]/Insight/bin
To bundle the logs please execute backup.sh in the [user home
directory]/Insight/bin

```

**Note**

The default password of MySQL root user is set to 'password'. Ignore the password changing instructions printed out by the MySQL RPM installation. To change the default password of MySQL root user follow Step 7.

Step 7 Change the password for the MySQL root user.

```
/usr/bin/mysqladmin -u root -ppassword password 'new-password'
```

To verify the new password, user can try

```
/usr/bin/mysqladmin -u root -h localhost -p ping
```

Enter password:

mysqladmin is alive

To verify the port 3306 is open or not, user can try

```
/>telnet localhost 3306
```

Trying 127.0.0.1...

Connected to localhost.localdomain (127.0.0.1).

Escape character is '^\'.

4

5.1.34x@9MYX0#_/*\$s;h|UunJbConnection closed by foreign host.



Note

Your installation is done. After successful completion of the installation, ensure to [checking the installation](#) before using it.

2.2.2 Integration with an Existing MySQL v5.1 Server

If the script detects an existing installation of MySQL v5.1 server, the second scenario is automatically chosen. The process asks to install Apache Tomcat and then creates the additional schemas required by the application on the existing database engine. Eventually, the installer script installs the JRE and the Cisco Insight Reporter v3.2 software.

As the MySQL database is already installed, the script needs to know the password of the root account.

To install the Cisco Insight Reporter v3.2 software, perform the following steps:

Step 1 Locate and run the installer package

```
cd <directory where installer was extracted>
./install.sh
```

Example:

```
Shell> cd /root/installer
Shell> ./install.sh
```



Note To install Insight Reporter, user should be root user only.

Step 2 The script asks you to install a new user for installation or upgrade existing user from Insight Reporter v3.1 to v3.2. It creates/updates the folder with that OS username and copies all the files into this folder. A question similar to the following appears on your screen:

Enter the OS username that will be used to install/upgrade (root not allowed):

If you enter a **non-existent OS user**, Cisco Insight Reporter v3.2 fresh installation starts.

If you enter an **existent OS user** under whom, a v3.1 instance was installed, Cisco Insight Reporter v3.2 up-gradation starts (see section, [Upgrade Cisco Insight Reporter v3.1 to v3.2](#)).



Note This existing user of Insight Reporter can be distinguished under “/home” directory for Red Hat Enterprise Linux (RHEL) or CentOS and “/opt” directory of Solaris operating systems,

Step 3 The script asks you to install the JRE6 only if it does not find it on the host. A question similar to the following appears on your screen:

```
Sun Java HotSpot(TM) JRE6 is required.
Do you want to install JRE6? [Y/N] (default Y):
```

If you press **Enter**, the installer script installs the JRE6. If it is not able to install JRE6, it exits the installation procedure.

If you press **N**, as the installer script needs the JRE6 to install the application, it quits the installation procedure after prompting a message.

Step 4 The script asks you to create a new path for the MySQL server. A question similar to the following appears on your screen:

```
INPUT : An existing v5.1 MySQL installation was found on your system.
Do you want to use it to install Cisco Insight v3.2? [Y/N] (default
Y):
```

If you press **N**, the installer script quits the installation procedure after showing the following message.

MSG : MySQL is required to complete the installation of Cisco Insight Reporter. Please refer to the Installation guide for further details. Now exiting.

If you press **Enter**, a question similar to the following appears on your screen:

```
INPUT : Enter the root password for MySQL:
```

- If you do not provide any value and press Enter, the installer asks for a schema name. (after entering the schema name, again it will ask for the MySQL root password).
- If you provide a valid input and press Enter, the installer script proceeds to next step

Note: Characters are not being visible while typing the password.

A question similar to following appears on your screen:

```
INPUT : Enter schema name for insight local database(default is insight):
```

'insight' would be considered as default schema name If you do not provide schema name.

If you provide a database schema name which already exists and press Enter, the installer again asks the schema name after displaying a below message.

```
MSG : schema [ <schema name> ] already exists.
```

If you provide a database schema name whose length is greater than 16 characters, the installer again asks the schema name after displaying a below message.

```
MSG: Database schema name length should be less than or equal to 16 characters.
```

If you provide a valid value and press Enter, the installer script creates the schema and installs the application only if you have entered a correct password.

The scripts again ask the Mysql root password by displaying the below message in case you have left it blank in an earlier step.

```
Enter password:
```

You may face any of the following scenarios:

- It would quit the installation by displaying relevant message if you entered a wrong Mysql root password.
- If you provide a valid password and press Enter, the installer script creates the schema and proceeds with the installation of the application.

While creating a schema and installing the application, the script displays the below information:

```
INFO : Cisco Insight schema created successfully
INFO : creating user [<username>]
Changing password for user <username>.
passwd: all authentication tokens updated successfully.
INFO : Default password is same as the username
INFO : Please change the password for user [<username>] by giving
command 'passwd <OS user name>'
INFO : Proceeding to configuration
```

Step 5 The script starts the installation process on your system.



Note

Your installation is done. After successful completion of the installation, ensure to [checking the installation](#) before using it.

2.2.3 Upgrade Cisco Insight Reporter from release v2.0/3.0/3.1

If the script detects an existing user with Cisco Insight Reporter v2.0/3.0/3.1 installed, the third scenario is automatically chosen.

The process upgrades the application and the existing database schema and integrates this latter with additional tables required by the new v3.2 release.

To upgrade the application, perform the following steps:

Step 1 Locate and run the installer package.

```
cd <directory where installer was extracted>
./install.sh
```

You see code similar to following on your screen:

```
Shell> cd /root/installer
Shell> ./install.sh
```



Note

To install Insight Reporter, user should be root user only.

Step 2 The script asks you to install a new user for installation or upgrade existing user from Insight Reporter v v2.0/3.0/3.1 to v3.2. It creates/updates the folder with that OS user name and copies all the files into this folder. A question similar to the following appears on your screen:

```
INPUT : Enter the OS username that will be used to install/upgrade
(root not allowed):
```

If you enter a **non-existent** user, fresh installation get processed.

If you enter an **existent user**, the upgrade workflow from version v2.0/3.0/3.1 to version 3.2 will be executed.

Before upgrading, the script will stop the Apache Tomcat server in case it was already running. Then it will upgrade the Cisco Insight Reporter application and the existing database schema with additional tables required by version 3.2. Eventually, the messages below will be displayed:

```
INFO : Please start the Apache Tomcat server to start the Cisco
Insight Reporter application up.
INFO : CONGRATS!! Upgrade successfully completed
```



Note

After the upgrade procedure has completed, there is no need to execute the script for configuring the application. Just start the Apache Tomcat server and start using the application.

If the script detects an existing user with Cisco Insight Reporter v2.0/3.0/3.1, scripts of Cisco Insight Reporter v3.2 upgrade the existing system to v3.2.

Your installation is done. After successful completion of the installation, ensure to [checking the installation](#) before using it.

2.3 Checking the Installation

After installing the application on the server, the administrator should verify the connectivity to the application.

To check if the application is working fine, perform following steps:

Step 1 Start the application:

- i. To start tomcat, invoke following shell script:


```
/etc/init.d/tomcat-[user] start
or
service tomcat-[user] start
```



Note

At the time of Starting Tomcat, if you will find the error "Access Denied". Run following command to change the permission:

```
Chmod 777 <startup.sh>
```

For more information, see [Troubleshooting](#) section of this document.

Error! Reference source not found.



Figure 1: Login Page

Step 2 The account created after the initial set-up has the privileges of the Super Admin role. The administrator can login the application by entering the username and password as *cisco / cisco*.

2.4 Un-installing Cisco Insight Reporter v3.2

The Cisco Insight Reporter v3.2 provides a script for uninstalling the software packages. When you uninstall the application, the following packages are also removed:

- Cisco Insight Reporter v3.2 software
- Apache Tomcat web server (if it is installed during installation)
- MySQL server (if it is installed during installation)
- JRE6 (if it is installed during installation)

To uninstall the application, perform the following steps:

- Step 1** Log in as the root user
- Step 2** Navigate to the home directory of the newly created user and run the uninstall script.
- Step 3** Assume that the time of installation the new user created is test.

```
cd /home/test/Insight/bin
./uninstall.sh
```

You will get output similar to the following on your screen:

```
Shell> cd /home/test/Insight/bin
Shell> ./uninstall.sh
This would remove the Cisco Insight Reporter Application and
the corresponding database. If you wish to take a backup of the
database schema, quit the un-installation and do so now.
Do you want to continue with un-installation? [Y/N] (default
Y):
If user enters N the wizard won't un-install the application
and would quit the un-installation procedure
If user enters Y then wizard would stop the tomcat, delete the
user home directory and the database schema

Stopping Tomcat
Using CATALINA_BASE:   /home/test/Insight/apache-tomcat-6.0.20
Using CATALINA_HOME:   /home/test/Insight/apache-tomcat-6.0.20
Using CATALINA_TMPDIR: /home/test/Insight/apache-tomcat-
6.0.20/temp
Using JRE_HOME:        /usr
Killing: 3107
deleting user test
```

2.5 Installing MySQL for Insight Reporter v3 .2 on Solaris

The installation of Cisco Insight Reporter v3.2 on Solaris is similar to the installation on a Linux-based system. The only difference is that **the MySQL engine has to be manually installed before running the installation procedure.**

These are the steps required to install the Cisco Insight Reporter application on Solaris from scratch:

Step 1 Pre-requisite:

Ensure no MySQL instance is running and the MySQL engine is installed under “/opt/mysql” directory. To stop the running instance, use the following command:

```
/etc/init.d/mysql stop
```

Also kill any process connected on port 3306

```
netstat -an | fgrep 3306
```

If there is any output of above command, find out the PID of the process which is connected to port 3306, use the command as:

```
lsof -i tcp:3306
```

Kill the PID given by output of the above command by giving following command

```
kill -9 [PID]
```

Step 2 Installation procedure:

Go to the directory where you have extracted the installer and give the following command (the example shows the package for Solaris 9 for SPARC 64-bit architecture, but is valid for the other supported Solaris versions)

```
gzip -d .pkgrpm/mysql-advanced-5.1.51-solaris9-sparc-64bit.pkg.gz
```

Create the system user for MySQL using the following command:

```
groupadd mysql
```

```
useradd -g mysql mysql
```

Execute following command

```
pkgadd -d .pkgrpm/mysql-advanced-5.1.51-solaris9-sparc-64bit.pkg
```

A question similar to the following appears on your screen:

- The following packages are available:

1	mysql	MySQL Advanced Server (Commercial)
		(sun4u) 5.1.51

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

- The selected base directory </opt/mysql> must exist before installation is attempted.

Do you want this directory created now [y,n,?,q]

**Note**

This option is omitted if the directory **/opt/mysql** already exists.

- This package contains scripts that will be executed with super-user privileges during the process of installing this package.

```
Do you want to continue with the installation of <mysql>
[y,n,?]
```

After the MySQL installation has completed, execute the following commands:

```
chown -Rh root:mysql /opt/mysql
chgrp -Rh mysql /opt/mysql
```

Go to directory where you have unzipped the Cisco Insight Reporter v3.2 installer
cd /root/installer

and execute the following commands:

```
cp -f .pkgrpm/my_solaris.cnf /etc/mytemp.cnf
mv -f /etc/mytemp.cnf /etc/my.cnf
cp -f .pkgrpm/mysql /opt/mysql/mysql/scripts
cp -f .pkgrpm/mysql /etc/init.d/mysql
/opt/mysql/mysql/scripts/mysql_install_db --user=mysql --basedir=/opt/mysql/mysql -
-datadir=/opt/mysql/mysql/data --defaults-file=/etc/my.cnf
chown -Rh root:mysql /opt/mysql
chown -Rh mysql:root /opt/mysql/mysql/data
cp /opt/mysql/mysql/bin/my_print_defaults /usr/bin/
chown root:root /etc/init.d/mysql
chmod 775 /etc/init.d/mysql
/etc/init.d/mysql start
/opt/mysql/mysql/bin/mysqladmin -u root -h [HOSTNAME] password 'password'
/opt/mysql/mysql/bin/mysqladmin -u root -h localhost password 'password'
```

where HOSTNAME is the host on which mysql is running

Go to directory where you have unzipped the Cisco Insight Reporter v3 installer and execute the **install.sh** script:

```
cd /root/installer
./install.sh
```

A question similar to the following appears on your screen:

Sun Java HotSpot(TM) JRE6 is required.

Do you want to install JRE6? [Y/N] (default Y):

Do you want to create a new system user for installation? [Y/N]
(default Y):

After the installation has finished, go to <user home directory>/Insight/bin and execute the config.sh script

```
cd /opt/test/Insight/bin
./config.sh
```

To start/stop the tomcat service, use the following command:

```
/etc/init.d/tomcat-{user-created} start
/etc/init.d/tomcat-{user-created} stop
```



Note

During uninstallation, to manually uninstall the MySQL engine, remove the mysql package and the related directories using the following commands:

```
/etc/init.d/mysql stop

pkgrm mysql

rm -f /etc/init.d/mysql

rm -rf /opt/mysql

rm -rf /var/run/mysqld/

rm -rf /var/lib/mysql/

rm -f /var/log/mysqld.log

rm -f /etc/my.cnf

userdel mysql

groupdel mysql
```

2.6 Setup and Installation for HA Scenario

In a high-availability scenario, a 1 + 1 redundant setup in Active Standby mode is supported. Only one server is active at a time. Only cold-failover is supported.

To set up and install high-availability scenarios, perform the following steps:

Step 1 Set up both instances separately using the steps described in the section Installing Cisco Insight Reporter v3.

Configure an external Load Balancer (LB) to point only to the active instance. It is recommended to use a LB software such as Apache HTTP Server with the mod-jk connector.

Step 2 Set up MySQL Replication. When the primary instance fails, the LB needs to be manually pointed to secondary instance. The slave instance of MySQL has to be made as primary instance. When the master has recovered, set it again as primary instance.

2.7 Enabling HTTPS

If a LB is used in front of the Apache Tomcat server, it should support HTTPS.

Step 1 Go to the home directory of the user. Assume that the OS user created at the time of installation is *insight*.

```
cd /home/insight
```

Step 2 Go to the Apache Tomcat bin directory.

```
cd /Insight/apache-tomcat-6.0.20/bin
```

Step 3 Create a certificate keystore by executing the following command:

```
$JAVA_HOME/bin/keytool -genkey -alias insight -keypass insight -keystore insight.bin -storepass insight
```

Output similar to the following appears on your screen:

```
What is your first and last name?
[Unknown]: Your Name
What is the name of your organizational unit?
[Unknown]: Your BU
What is the name of your organization?
[Unknown]: Your Organization
What is the name of your City or Locality?
[Unknown]: Your City
What is the name of your State or Province?
[Unknown]: Your State
What is the two-letter country code for this unit?
[Unknown]: Your Country
Is CN=Your Name, OU=Your BU, O=Your Organization, L=Your City,
ST=Your State, C=Your Country correct?
[no]: yes
```

This generates a keystore file named *insight.bin* in the Tomcat bin directory

Ensure that the keypass and storepass passwords are the same.

Step 4 Go to the conf directory inside the Apache Tomcat directory:

```
cd ../conf
```

Step 5 Open the *server.xml* file inside the conf directory. Find the HTTPS connector, uncomment it and save the file.

The HTTPS connector will be similar to the following:

```
<!-- Define a SSL HTTP/1.1 Connector on port 443
This connector uses the JSSE configuration, when using APR, the
connector should be using the OpenSSL style configuration
described in the APR documentation -->
<!--
<Connector port="443" protocol="HTTP/1.1" SSLEnabled="true"
maxThreads="150" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS"
keystoreFile="${user.home}/Insight/apache-tomcat-
6.0.20/bin/insight.bin" keystorePass="insight" />
-->
```



Note

This is an optional step only required if you wish to run Cisco Insight Reporter in a secure mode.

After you configure SSL on Apache Tomcat, enter the following URL in the browser:

```
https://<server IP>:443/
```

Add the exception and accept the certificate the first time.



CHAPTER 3.

Configuring Cisco Insight Reporter v3.2

This chapter describes the procedure to change configuration settings of the Cisco Insight Reporter v3.2 software and to generate the first report.

This chapter contains the following sections:

[Setting the Global Settings](#)

[Configure Traffic Databases and Devices](#)

[Configure Network Topology](#)

[Configure Accounts](#)

[Running the First Report](#)

To set up the application properties, perform the following steps:

3.1 Setting the Global Settings

These settings are configured, by default at the time of system Installation. To change the configuration of the global settings, perform the following steps:

Step 1 Click the **Settings Management**  icon from the **Module Launcher**. On click following screen will appear:

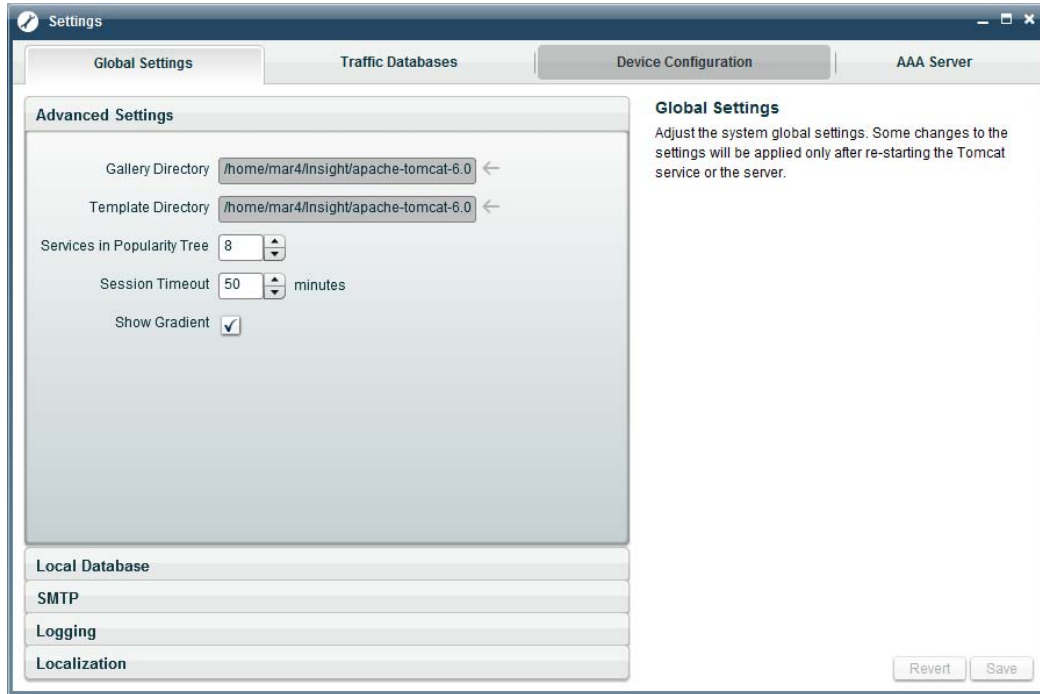


Figure 2: Settings Management

Step 2 Select the **Global Settings** tab.

Step 3 Define **General Settings**.

These should be by default configured with values given during the installation. You can modify these to change the configuration.

Step 4 Define the **Local Database** settings.

These should be by default configured with values given during the installation (by running the *config.sh* script). You can modify these to change the configuration.

Step 5 Define **SMTP** server settings.

These are not set by default and are used by the application for sending E-Mail.

Step 6 Define Logging and monitoring Settings.

These are set by default and can be modified to specify the settings for logging and log expiration.


Step 7 Define **Localization** settings.

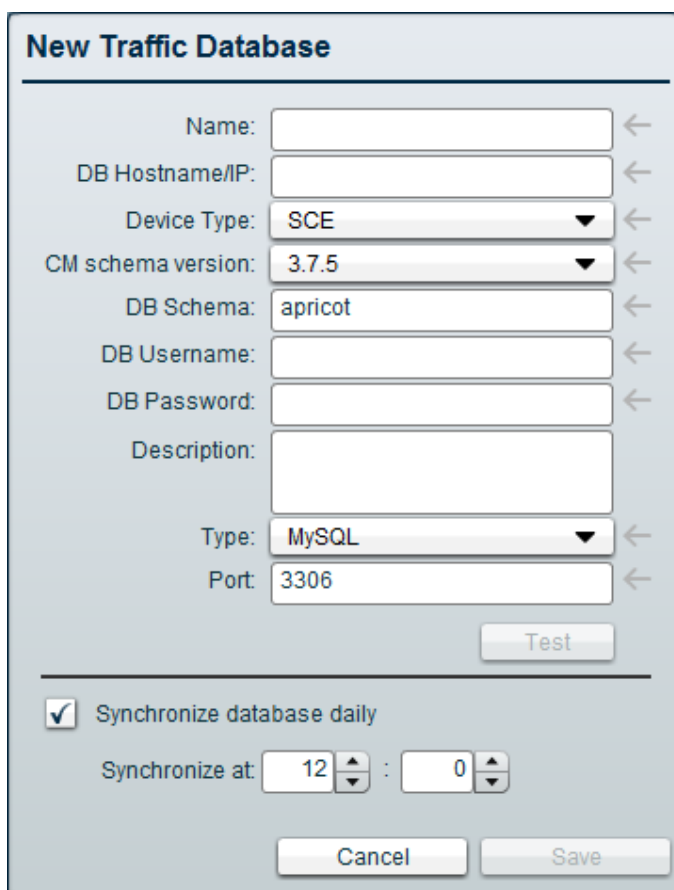
These are set by default and can be modified to specify the application.

3.2 Configuring Traffic Databases and Devices

The **Remote Database Configuration** tab enables you to configure a connection to a Traffic database. You can check the database connectivity, retrieve device information from the *INI_VALUES/NF_INI_VALUES* tables, and set the frequency of the polling process.

To set up the traffic database connectivity parameters and Device configurations, perform the following steps:

- Step 1** Click the **Settings Management**  icon from the **Module Launcher**. You see a similar page to that in [Figure 2](#).
- Step 2** Go to the **Traffic Database** tab.
- Step 3** Create a new remote database by clicking the **New** button
- Step 4** On clicking, following pop-up will appear:



New Traffic Database

Name: ←

DB Hostname/IP: ←

Device Type: SCE ▼ ←

CM schema version: 3.7.5 ▼ ←

DB Schema: apricot ←

DB Username: ←

DB Password: ←

Description:

Type: MySQL ▼ ←

Port: 3306 ←

Synchronize database daily

Synchronize at: 12 : 0

Figure 3: New Traffic Database Configuration

- Step 5** Enter new traffic database configurations.
- Step 6** Click **Save** button to save the configurations.



Note

For more information on how to configure new traffic database, please refer Cisco Insight Reporter v3.2 User Guide.

Step 7 Go to Device Configuration tab.

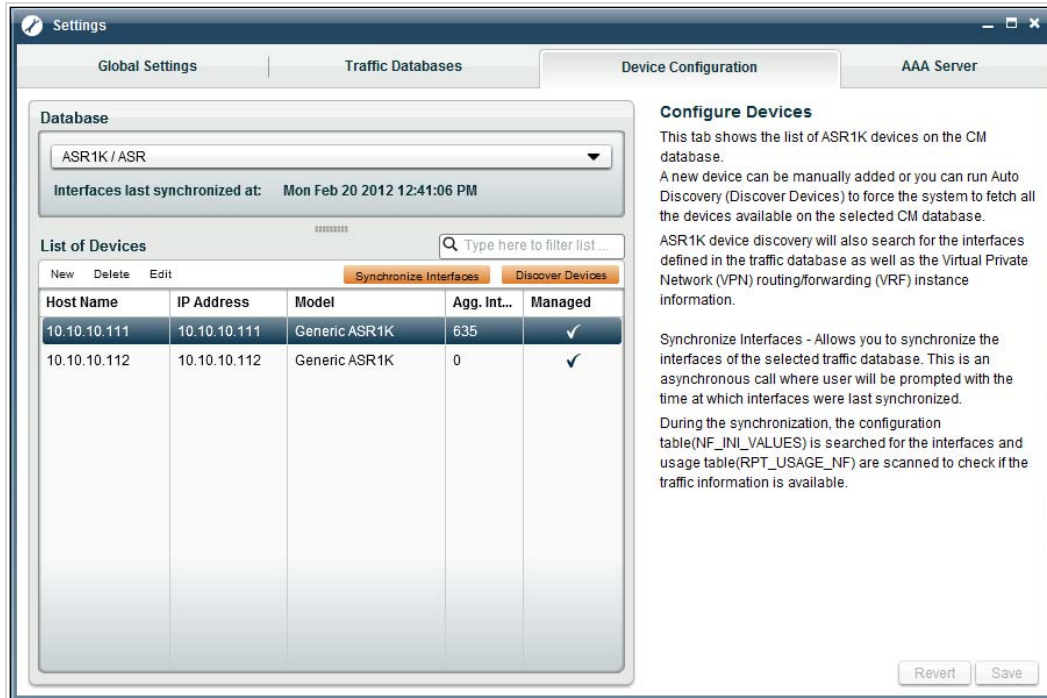


Figure 4: Device Configuration

Step 8 Select the traffic database created in step 2 to 4 and click on either **Discover Devices** button or click on **New** to create a new device.



Note

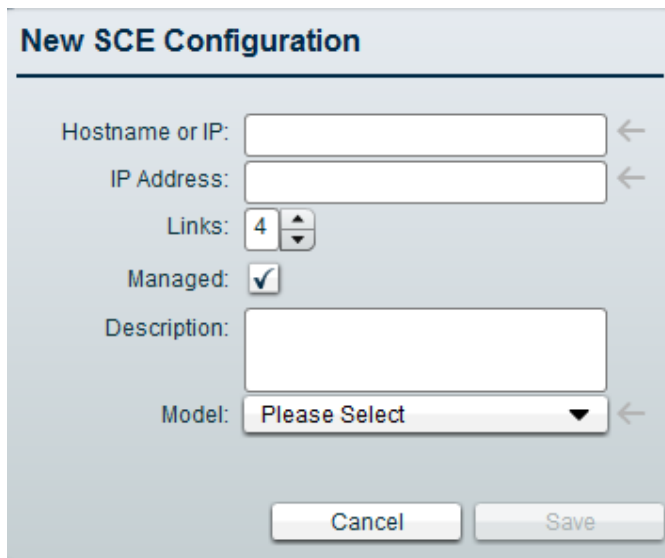
The default names for the Collection Manager database schema are:
 - *apricot* for SCE deployments
 - *avocado* for ASR1K deployments



Note

On “Discover Devices”, all the devices present in the INI_VALUES/NF_INI_VALUES table of the selected traffic database would be fetched and stored locally in Cisco Insight Reporter. These devices can then be edited (to complete the information that was not populated by the Auto Discovery Process)

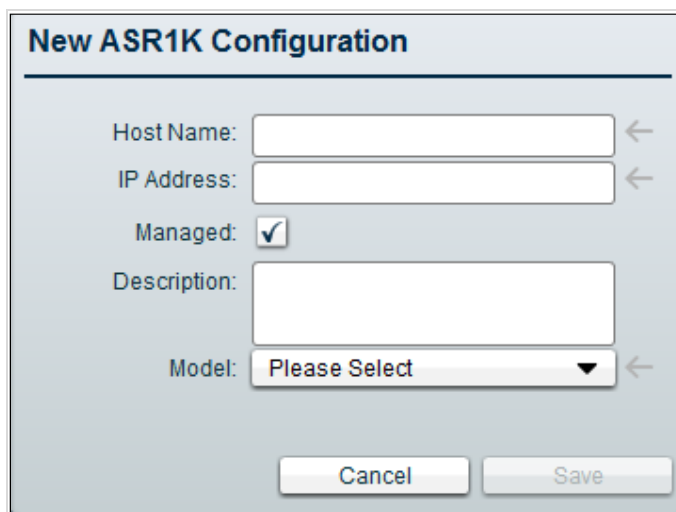
Step 9 On clicking the **New**, following pop-up will appear:



The 'New SCE Configuration' dialog box contains the following fields and controls:

- Hostname or IP:
- IP Address:
- Links: (with up and down arrows)
- Managed:
- Description:
- Model: (with a dropdown arrow)
- Buttons: Cancel and Save

Figure 5: New SCE Configuration



The 'New ASR1K Configuration' dialog box contains the following fields and controls:

- Host Name:
- IP Address:
- Managed:
- Description:
- Model: (with a dropdown arrow)
- Buttons: Cancel and Save

Figure 6: New ASR1K Configuration

Step 10 Enter new SCE/ASR1K configuration. Click **Save** button to save the configuration.

3.3 Configuring Network Topology

To configure the network topology on the Cisco Insight Reporter v3.2, perform the following steps:

- Step 1** Click the **Network Wizard**  icon from the **Module Launcher**. On clicking, following page will appear:

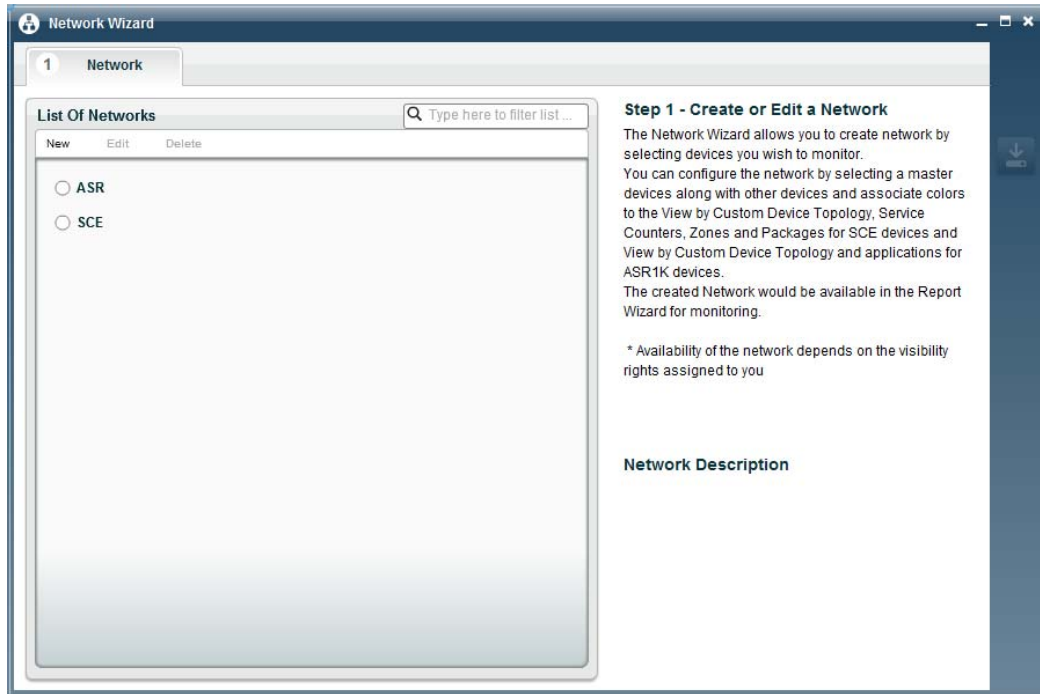


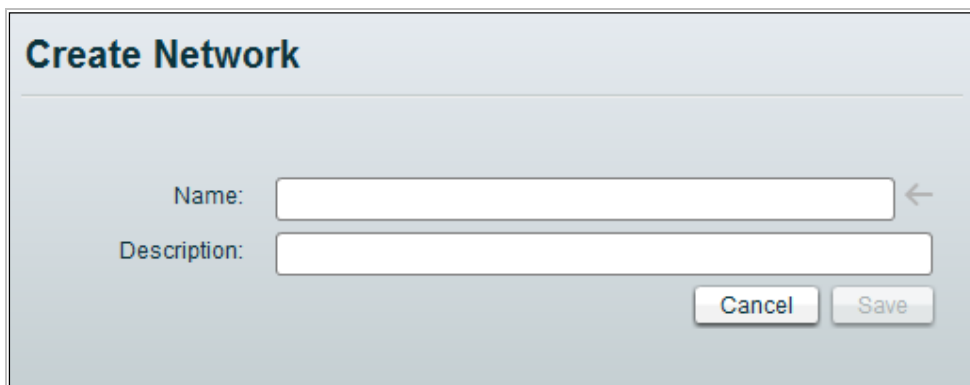
Figure 7: Network Wizard



Note

On selecting any network from the **Network List**, you will be able to view **Device** tab. On clicking the **Device** tab, other tab will also appear on **Network Wizard** page.

Step 2 Click on the **New** option, to create a new network. On clicking, following pop-up will appear:

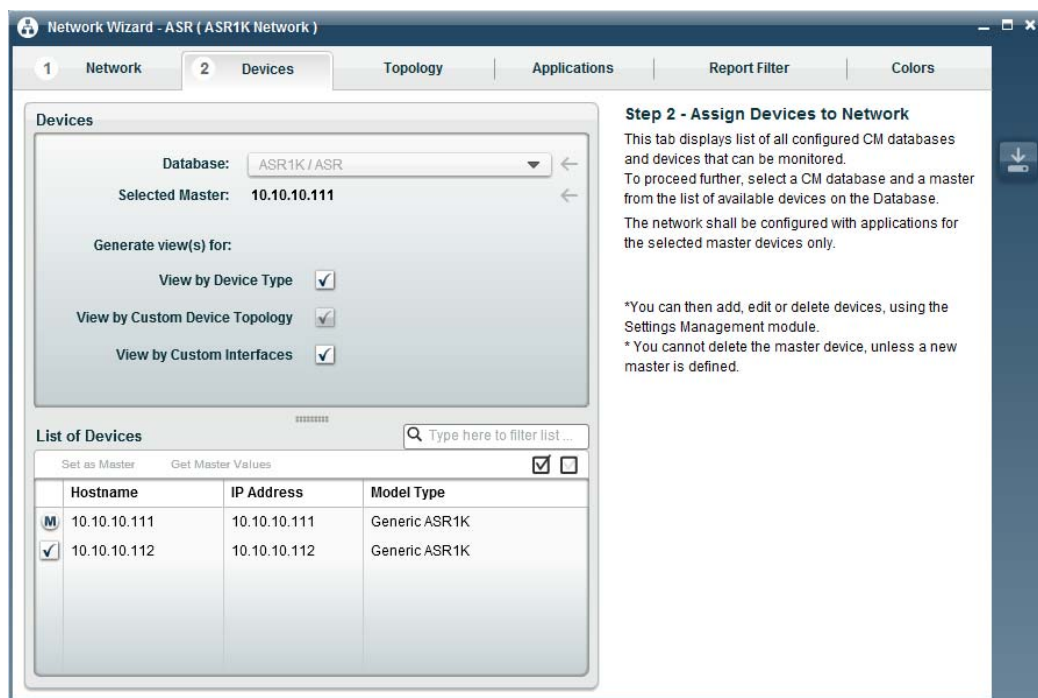


The image shows a 'Create Network' dialog box with two input fields: 'Name:' and 'Description:'. There are 'Cancel' and 'Save' buttons at the bottom right.

Figure 8: Create Network

Step 3 Enter the network name and description and click **Save** button.

Step 4 Click the **Devices** tab.



The screenshot shows the 'Network Wizard' interface with the 'Devices' tab selected. It includes a 'Database' dropdown set to 'ASR1K/ASR', a 'Selected Master' field with '10.10.10.111', and checkboxes for 'View by Device Type', 'View by Custom Device Topology', and 'View by Custom Interfaces'. A 'List of Devices' table is shown below, and a right-hand panel contains instructions for 'Step 2 - Assign Devices to Network'.

	Hostname	IP Address	Model Type
<input checked="" type="checkbox"/>	10.10.10.111	10.10.10.111	Generic ASR1K
<input type="checkbox"/>	10.10.10.112	10.10.10.112	Generic ASR1K

Figure 9: Devices tab

Step 5 Select a traffic database on the **Devices** tab.

Step 6 Select devices that will be part of the same network and define the Master device by clicking the **Set as Master** button.

**Note**

On Cisco Insight Reporter, a network is a group of DPI devices of the same type (ASR1K) sharing the same configuration.

This means all devices belonging to the same network shall have the same configured services/applications, packages, protocols, counters, etc.

**Note**

When a device is “Set As Master”, the device configuration table (INI_VALUES/NF_INI_VALUES) on the traffic database is queried for the configuration information. All the other devices in this network shall have the same configuration as the Master device.

Step 7 Go to the **Topology** tab and define the custom topology. This is an optional step which lets you arrange the devices under custom grouping.

Step 8 For ASR Networks, go to the **Applications** tab to view applications grouped under different categories and sub categories. This option is ASR network specific.

Step 9 For SCE Networks, go to the **Services** tab and define the **Custom Services Hierarchy**. This is an optional step which lets you arrange the Services under custom grouping. This option is SCE network specific.

Step 10 Go to the **Report Filter** tab and select the type of traffic records generated by the devices that you have selected for this network.

**Note**

The reports that you can run from Report Wizard depends on the filters selected here. So ensure that you choose only those filters for which the Collection Manager populates the traffic tables.

Step 11 Go to the **Colors** tab and to associate custom colors to Custom Topology, Applications for ASR/SCE devices.

Step 12 Click on the **Save** button to save the network.

3.4 Configuring Accounts

By default, one account (super user) is configured. To create a new user account, perform the following steps:

Step 1 Log in into the application using the system defined **Super User** account.

Step 2 Open the **Account Management** module from the module launcher. On clicking, following page will appear:

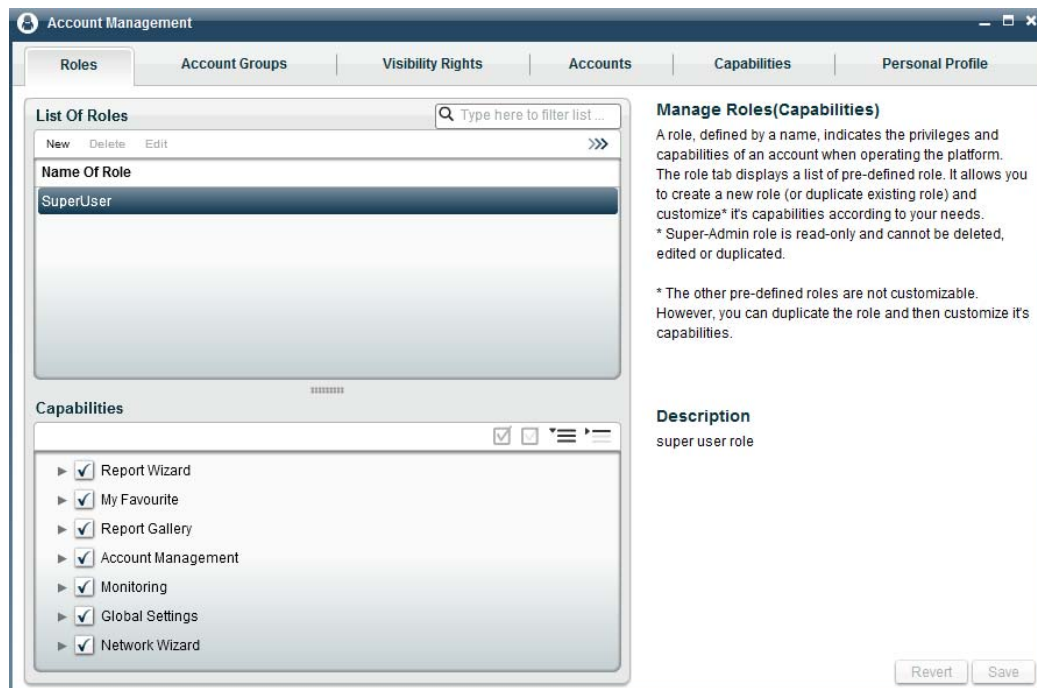
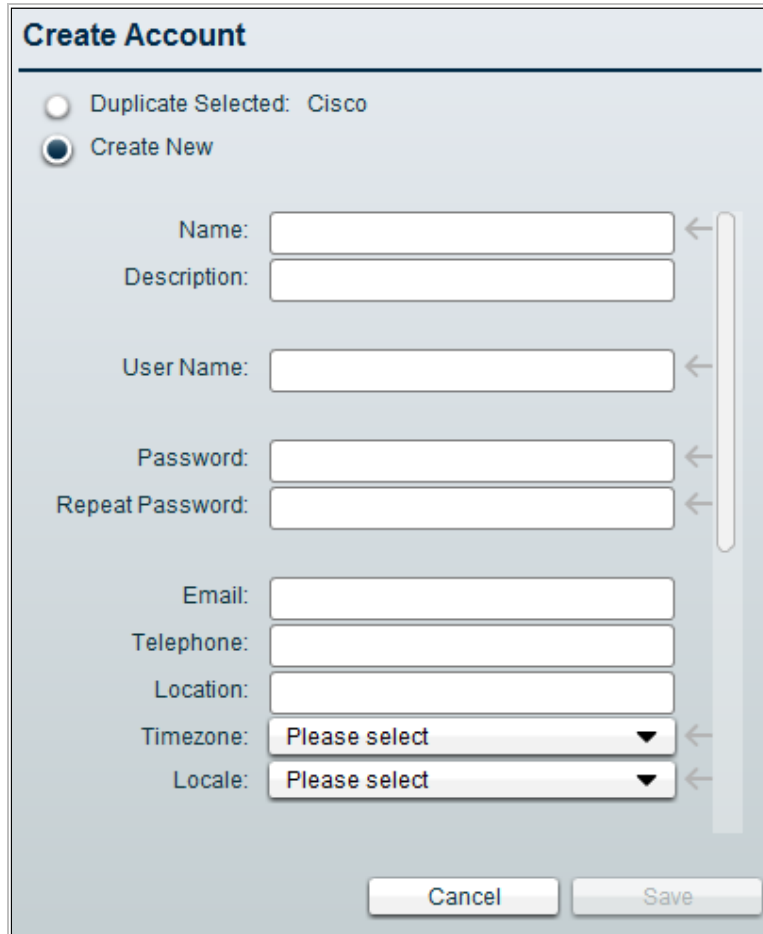


Figure 10: Account Management page

Step 3 Go to the **Accounts** tab, click the **New** button. On clicking, following pop-up will appear:



Create Account

Duplicate Selected: Cisco

Create New

Name:

Description:

User Name:

Password:

Repeat Password:

Email:

Telephone:

Location:

Timezone:

Locale:

Figure 11: Create Account tab

Step 4 Enter all the details about the user. Assign appropriate role, account group, visibility rights, and the report groups.

Step 5 Click the **Save** button.

Step 6 To authenticate the creation of the newly created account, do log out from the application and login back in to the application using the new user's credentials.

3.5 Running the First Report

To run the first report, perform the following steps:

Step 1 Open the **Report Wizard**.

Step 2 Select the network from the **Network** tab.

Step 3 Select the appropriate topic from the **Topic** tab.



Note

On selecting any report in **Topic** tab by clicking **Next** button, more tabs will appear.

Step 4 Configure a time interval on the **Date & Time** tab.

Step 5 Select the appropriate devices from the **Topology** tab.

Step 6 Select the services from the **Services** tab, in case of SCE network or select the applications from the **Applications** tab, in case of ASR1K network.

Step 7 Select additional parameters from the **Parameter** tab.

Step 8 Run the report. The report will display.



Note

The Cisco Insight Reporter User Guide provides further information about the report template and the topics available in the Report Wizard. Please refer to it for a better description of reports.



Troubleshooting

This chapter describes how to troubleshoot commonly encountered problems. This chapter contains the following sections:

[Trouble Shooting NF_INI_VALUES table data](#)

[Troubleshooting NF_INI_VALUES not getting updated](#)

[Troubleshooting the Collection Manager](#)

[Troubleshooting MySQL compatibility issue](#)

[Troubleshooting MySQL start-up and connectivity problem](#)

[Troubleshooting the “No Data Found” message when running reports](#)

[Troubleshooting no interface showing any associated traffic](#)

[Troubleshooting “No More Session Allowed”](#)

[Troubleshooting Subscribers Flows Report that is not working](#)

[Troubleshooting Authentication Failure](#)

[user interface that is not loading correctly](#)

[Troubleshooting user interface that is not loading correctly](#)

[Troubleshooting application startup problem](#)

[Troubleshooting connectivity with Traffic Database](#)

[Troubleshooting issues when setting Master Device](#)

[Troubleshooting Connection Timeout from Traffic Database](#)

[Troubleshooting if User is not able to view full DB Query in Logs](#)

[Troubleshooting if User wants to view aggregation interval in case of non aggregation](#)

[Troubleshooting if Remote DB Connection failed](#)

[Troubleshooting if Device Discovery failed](#)

[Troubleshooting if error comes during Report Execution](#)

[Troubleshooting if User Login fails](#)

[Troubleshooting no data is displayed in report after successful execution \(report wizard\)](#)

[Troubleshooting if “Auth Token is not valid.” Message appears](#)

[Troubleshooting reports are showing data in Bar chart however area and line charts are not working fine](#)

[Troubleshooting if report is taking long time to generate\(Report Wizard\)](#)

[Cisco Insight Reporter error codes](#)

Troubleshooting NF_INI_VALUES table Data

Database table NF_INI_VALUES is updated whenever the Collection Manager receives Option Template from ASR1K. This table contains, for each Source IP address (ASR1K), mappings between numeric identifiers and textual representation for interfaces, applications and other components. The Reporter uses the mappings contained in this table while generating reports.

Schema Details:

Below table lists the columns for NF_INI_VALUES table:

Columns for Table NF_INI_VALUES		
Field Name	Type	Description
TIME_STAMP	Date_Time	
NF_IP	String	Identification of the ASR platform where these values were applied.
VALUE_TYPE	Number	Key Name/Value family type. The possible values are: 5 –Source address 32-bit / dotted notation 101 – Input interface ID / Input Interface Name 102 – Input interface ID / Input Interface Description 111 –Application ID / Application Name 112 –Application ID / Application Description 114 – Application ID / Category Name 115 – Application ID / Sub - Category Name 116 – Application ID / Application Group 117 – Application ID / Attribute: p2p-technology 118 – Application ID / Attribute: tunnel 119– Application ID / Attribute: encrypted 131 – Sampler ID / Sampler Name 132 – Sampler ID / Sampler

		Algorithm Export 133 - Sampler ID / Sampler Interval 151 - VRF ID / VRF Desc
VALUE_KEY	String	Key name. For example: Gold, Silver
VALUE	Number	Numeric reference.

NF_INI_VALUES table support over different CM Versions: CM 3.7.0:

In CM 3.7.0, the following VALUE_TYPE such as **5,101,102,111,112,131,132,133** will be supported, for the remaining VALUE_TYPE the user has to manually execute the `"~scmscm/cm/bin/ updateNetFlowMap.sh - file=~scmscm/cm/config/AttributesTable.csv "` for updating the table. It is mandatory for the user to execute the updateNetFlowMap.sh script once you completed your CM fresh Installation or upgrading CM from 3.6.x.

CM 3.7.1:

In CM 3.7.1, all the VALUE_TYPES will be processed by Collection Manager. The user no needs to run the updateNetFlowMap.sh script for manually updating the table.

General Note: For the collection Manager to update the NF_INI_VALUES table, the corresponding Option Templates need to be configured in ASRIK.

Sample Content for the NF_INI_VALUES table:

TIME_STAMP	NF_IP	VALUE_TYPE	VALUE_KEY	VALUE
12/15/2011 7:22:16 PM	10.78.246.19	101	Gi0/0/3	4
12/15/2011 7:22:16 PM	10.78.246.19	102	GigabitEthernet0 /0/3	4
12/15/2011 7:22:25 PM	10.78.246.19	111	xdmcp	50331825
12/15/2011 7:22:25 PM	10.78.246.19	112	X Display Manager Control Protocol	50331825
12/15/2011 5:25:33 PM	10.78.246.19	114	net-admin	50331825
12/15/2011 5:25:33 PM	10.78.246.19	115	remote-access- terminal	50331825
12/15/2011 5:25:33 PM	10.78.246.19	116	other	50331825
12/15/2011 5:25:33 PM	10.78.246.19	117	No	50331825
12/15/2011 5:25:33 PM	10.78.246.19	118	No	50331825

12/15/2011 5:25:33 PM	10.78.246.19	119	No	50331825
12/15/2011 7:22:59 PM	10.78.246.19	131	Trial	5
12/15/2011 7:22:59 PM	10.78.246.19	132	2	5
12/15/2011 7:22:59 PM	10.78.246.19	133	1	5
12/15/2011 7:18:41 PM	10.78.246.19	151	Mgmt-intf	1

Query to check the data in NF_INI_VALUES table:

Already a CLU is available in Collection Manager to execute user specific queries. The user can use the CLU as mentioned below:

Syntax: `~scmscm/cm/bin/cm invoke com.cisco.scmscm.netflow.adapters.jdbc.JDBCAdapter - executeQuery "<<user specific query>>"`

Example: `~scmscm/cm/bin/cm invoke com.cisco.scmscm.netflow.adapters.jdbc.JDBCAdapter - executeQuery "select * from NF_INI_VALUES LIMIT 4"`

TIME_STAMP	NF_IP	VALUE_TYPE	VALUE_KEY	VALUE
2011-12-15 21:47:26.0	10.78.246.19	101	Gi0/0/0	1
2011-12-15 21:47:26.0	10.78.246.19	102	GigabitEthernet0/0/0	1
2011-12-15 21:47:26.0	10.78.246.19	101	Gi0/0/1	2
2011-12-15 21:47:26.0	10.78.246.19	102	GigabitEthernet0/0/1	2

Troubleshooting NF_INI_VALUES not getting updated

If the NF_INI_VALUES not getting updated, please ensure the following configuration is done properly in ASR1K side.

1. Use the below command to check the flow exporter configuration in ASR1K for the option templates that are enabled for the corresponding exporter.

- a. **show flow exporter <<exporter name>>**

The user has to find the below details from the flow exporter configuration for generating Option Template

interface-table (timeout 600 seconds) - generating Input Interface Id/Desc details
sampler-table (timeout 600 seconds) - generating Sampler details

application-table (timeout 600 seconds) - generating Application ID/Name Details

In Collection Manager 3.7.1, two new option template configurations need to be added to process the Application attributes and VRF details.

application-attributes (timeout 300 seconds)

vrf-table (timeout 300 seconds)

Troubleshooting the Collection Manager

Use the `~scmscm/setup/alive.sh` script to check the currently running CM processes.

Use the `~scmscm/cm/bin/cm dbversion` script to check the configured DB in CM.

Use the `ps -ef | grep scmscm` command to check the CM server and enabled adapter processes.

To check the RDR/NF records processing, monitor the file counts in each adapter's persistent directories.

Verify the ERROR/WARN messages in the log files, if CM not processing the RDR/NF records from the persistent buffers.

Troubleshooting MySQL compatibility issue

The application is compatible with MySQL version 5.1. If a non-compatible version is found installed on the server, the installation will abort and will show the following message:

“An existing MySQL installation is detected on your system which is not compatible with Cisco Insight Reporter. Please use MySQL version 5.1 or uninstall the existing MySQL and rerun the Insight installation. Now exiting.”

Troubleshooting Tomcat not started

- 1) Sometimes at the time of starting the Tomcat server, it gives “*Port bind*” exception. To resolve this issue, please shut down the application that is using port 80.
- 2) Sometimes at the time of starting the Tomcat server, it gives “*Access Denied*” message.

To resolve this issue, change the access permission using following command:

```
Chmod 777 <startup.sh>
```

Troubleshooting MySQL start-up and connectivity problem

If the default port for running MySQL (3306) is blocked or denied access on firewall, it could lead to installation or application start-up issue. This can occur due to one of the following reasons:

1. SELinux is enabled and blocking access to port 3306: Disable the SELinux and unblock access to port 3306.
2. Firewall is enabled and not configured to allow access to port 3306: check section [Working with Firewall](#).
3. Socket is already in use: Find the application running on that socket. Close that application.
4. On integrating with an existing MySQL server if you get connectivity problem, please make sure you give valid password for MySQL root user.



Note

All the installation logs are created under the logs directory present under the directory where installer was unzipped.

For additional information about the MySQL connection issues, please refer <http://dev.mysql.com/doc/refman/5.1/en/can-not-connect-to-server.html>

Troubleshooting the “No Data Found” message when running reports

If the output of a report gives a “No Data Found” message, you should check several conditions.

One of the reasons could be that the database tables have not been populated. You should check the following:

Ensure that the database configuration on Cisco Collection Manager is correct

Ensure that the ASR generated the type of NF records that you are trying to report on.

If you think the database tables are being populated, you should check the following:

- Ensure that the selected time span matches some data in the database tables.
- Ensure that you have properly selected the report parameters so that the report query matches some information on the database.
- Ensure that the data aging mechanism, configured on the Collection Manager, is configured as expected. If necessary, change the settings according to the suggested data sizing.

Troubleshooting no interface showing any associated traffic

If in the Network Wizard no interface displays in green (having associated traffic with it), the following checks should be made.

Ensure that the RPT_USAGE_NF table is not empty.

Ensure that the interfaces present in the RPT_USAGE_NF do not have data which is more than 99 days old

In case data present in RPT_USAGE_NF is not older than 99 days, verify the sync duration set while creating a remote database.

Troubleshooting “NO more sessions allowed”

The login to Insight Reporter is limited by the number of simultaneous logins allowed for a particular role, (limited to “2” for the default Super User). Hence refreshing the browser window without logging out will result in reaching this threshold and further login would result in authentication failure until the session is timed out. Hence usage of browser “Refresh or F5” should be avoided.

We can change con-current session in database in config_system_param table.

Troubleshooting user interface that is not loading correctly

To successfully run/launch the User Interface, Insight requires the browser with Flash Player Plug-in 10.x or above. In case a compatible version is not found on the browser, you may get an empty screen or the following message:

“To view this page ensure that Adobe Flash Player version

10.0.0 or greater is installed."

Troubleshooting application startup problem

The application, while starting, runs the Apache Tomcat on the port 80. Insight Reporter will not start if there are other applications using port 80.

If you wish to configure Insight Reporter to run on a different port (say 8080), change the connector configurations in

```
<[user home directory]/Insight/apache-tomcat-6.0.20/conf/server.xml
```

To

```
<Connector port="8080" protocol="HTTP/1.1"
           connectionTimeout="20000"
           redirectPort="443" />
```



Note

Please ensure all the ports(including AJP 1.3 connector port) used by tomcat (as mentioned in the server.xml) are free and not being used by any other application

While starting tomcat if you see the following error on your screen

“PID file /home/{user}/tomcat.pid found. Is Tomcat still running? Start aborted”

Then perform the following steps

```
Change to the users home directory using
cd /home/{user}
remove the PID file using
rm -f tomcat.pid
Restart Tomcat using:
/etc/init.d/tomcat-{user} start
or
service tomcat-{user} start
```

Troubleshooting connectivity with Traffic Database

In some environments, Cisco Insight Reporter may not be able to connect to the Cisco Service Control Management Suite Collection Manager traffic database.

Edit the catalina.policy file inside the "conf" folder of tomcat (i.e. <tomcat-dir>/conf/catalina.policy) and add the following lines:

```
grant {

    permission java.net.SocketPermission "<CM DB IP ADDRESS>:<CM
DB PORT>", "connect", "resolve";

};
```


Where CM DB IP ADDRESS corresponds to the traffic database IP address and CM DB PORT the corresponding port (MySQL: 3600 - Oracle: 1521 - Sybase: 4100).



Note

Please ensure restart the tomcat service after editing catalina.policy.

Troubleshooting issues when setting a Master Device

Setting a device as “Master” for a network may fail due to anyone of following reasons:

1. If CM version 3.4 or greater is running, in NF_INI_VALUES table, Value Type must be 111,112,114,115,116,117,118 & 119 and for INI_VALUES table, Value Type must be 1 & 11for this device.
2. For remaining versions, there can be possibility that right template is not configured..

Troubleshooting Connection Timeout from Traffic Database

Connections to traffic database servers may cause connection time out exception in logs, if all available connections in the connection pool already acquired. The maximum connection in connection pool can be changed from config_system_param table by changing value for field poolMaxSize. Try to increase maximum number of connections in the ranges of 10, if this issue occurs.

The default value for poolMaxSize is 100.

Troubleshooting if User is not able to view full DB Query in logs

If the user is not able to view the full DB Query, do following settings:

1. In **Settings Management->Global Settings->Logging** column, set value of **Application Logging Threshold** as **DEBUG**.
2. Now view Logs.log file for complete logs of the application.

Troubleshooting if User wants to view aggregation interval in case of non aggregation

If the user wants to view aggregation interval:

1. In **Settings Management->Device Configuration** tab, view value of column **Agg. Interval(Sec.)**.

Troubleshooting if Remote DB Connection failed

If Remote DB connection failed, there can be two reasons:

1. MySQL is not up. Start your MySQL.
2. NF_INI_VALUES table is not exist in Traffic Database or this table is empty.

Troubleshooting if Device discovery failed

If Device discovery fails, there can be two reasons:

1. If you have restarted DB Server, all connection in connection pool became invalid. To validate all the connection, restart the Tomcat server.
2. NF_INI_VALUES table does not have value corresponds to VALUE_TYPE=5. Check either CM or ASR configuration for pushing value type 5.

Troubleshooting if error comes during Report Execution

In this case, send an email to Insight Reporter support team.

Troubleshooting if User Login fails

If user is not able to login, there can be two reasons:

1. MySQL is not up.
2. Mysql.user table does not have user details because mysql.proc table get corrupted. To upgrade the table, following is the command:

```
Mysql_upgrade -u root-ppassword
```

Troubleshooting no data is displayed in report after successful execution (Report Wizard)

If no data is available in report after successful execution, it can be the case that data available is too small to display because by default Insight Reporter displays data in mbps/mbytes and up to two decimal places only.

To solve this problem, in **Report Wizard -> Topic -> <any report>**, change **Parameters -> Unit Metric/Unit Of Result** to **Kbps/Kbytes**

Troubleshooting if “Auth Token is not valid.” Message appears

If this message appears, it means Tomcat has been restarted. Refresh your browser page.

Troubleshooting reports are showing data in Bar chart however area and line charts are not working fine

To plot Area chart and Line chart at least two data points are required, however in Bar chart only one data point is required.

Troubleshooting if report is taking long time to generate (Report Wizard)

If report is taking long time to generate, check system resources & load of the system, reduce system resource usage or load.

Database table on which this report is running is very large (more than 100 M records).

Cisco Insight Reporter error codes

This section lists the error messages seen on the application and their respective meaning:

Error Code	Error Message	Description
1901	Subscriber Manager: General Failure	Unable to connect to subscriber manager
1902	Subscriber Manager: Invalid SM Address	Subscriber manager ip address in not correct
1903	Subscriber Manager: Invalid Subscriber Record	Subscriber manager with invalid records
1904	Subscriber Manager: Missing Subscriber Record	Subscriber Manager with missing records
1801	The service you have requested is not available, Please contact System Administrator or try later	Generic error when got exception while interacting with BE
1802	Missing request parameter	Error when exception during JSON validation
1803	Missing Auth String in request	Error display when user session expire
1804	Session Expired. Please relogin	Error display when authtoken of user session not found
1805	Auth Token found in header is either expired or invalid	Error display when authtoken of user session expire
1806	Non Parsable Input Json	Error during parsing of JSON from GUI to BE
1807	Invalid Input Json	Error during validation of JSON from GUI to BE
1808	IO Error while processing json	Error during processing of JSON from GUI to BE
1600	This account name already exists, please select another name	Error during creating account with existing name
1601	Deletion denied. ? has accounts under it	Error during deletion of account group if accounts under them
1604	Accounts under account group cannot be saved	Got exception during saving of accounts for account group
1605	Account Group not found	Error when account group not found
1606	Account not found	Error when account not found

1607	Account Details cannot be saved	Got exception during the saving of Account group
1608	Account Group Details cannot be saved	Got exception during the saving of Account group details
1616	Error while saving Role details.	Error during saving Role
1610	Account Group cannot be removed	Got exception during the removing of Account group
1611	Account details cannot updated	Got exception during the updating and saving of Account group
1612	Account Group details cannot be updated	Got exception during the updating and saving of Account group details
1613	Account cannot be removed	Got exception during the removing of Account
1614	Role cannot be removed	Got exception during the removing of Role
1615	Role not found	Got exception during the retrieval of Role
1617	Default superuser account cannot be deleted	Try to delete super use account.
1618	Account cannot be deleted, first delete its child accounts/roles/account groups	Error message when deleting of account when child accounts/roles/account group exists
1619	Visibility cannot be created since no topics found for the network	Error during creating Visibility when no topics found for network
1620	Visibility cannot be removed	Error during deleting of Visibility
1621	Visibility not found	Error during retrieval of Visibility
1622	Default Super user Role cannot be deleted.	Error during deleting the default super user
1623	Some accounts cannot be added since those already exist under the account group	Error during the addition of existing account in account group
1624	Some accounts cannot be deleted since those already exist under account group	Error during the deletion of account which already have account group
1625	Report cannot be published as public. User of this account group does not have the report sharing capability	Account group is not authorize to share reports
1626	Default Super User role cannot be updated.	Error during updating Super user Role
1627	Account group name already exists, please give some other name	Error during the creating Account group with existing name
1628	Role name already exists, please give some other name	Error during creating Role with existing name
1629	Visibility name already exists, please give some other name	Error during creating Visibility with existing name
1630	Deletion denied. This visibility has accounts under it	Error during deleting the Visibility with existing account.
1631	Deletion denied. This account group has accounts under it	Error during deleting Account group which has already account
1632	Deletion denied. This role has accounts under it	Error during deleting the Role which has account.
1633	Data Grid cannot be published as an image	Error during publishing the data grid as image.
1301	Invalid username or password	Error during login with invalid user name / password
1303	User does not exist	Login with user that does not exist
1302	Authentication Token is either invalid or expired	Auth token for user sessions has been expire or invalid

1304	Access denied - No more sessions allowed for this role.	Accessing with more session for user which are not configured
1410	Definition not found for this report	Got exception while retrieving report definition
1411	Duration filter details not found for this report	Got exception while retrieving Duration filter
1412	View filter details not found for this report	Got exception while retrieving view filter
1428	Charting Custom Parameter value not found!	Got exception while retrieving Custom parameter
1429	Error during deletion of ReportDefinition	Got exception during deletion of reports definition
1424	Error while setting report Axis Information	Got exception during saving x-axis report information
1425	Network Details not found.	Got exception during retrieving network details
1426	Error while retrieving Report Custom Parameters	Got exception during retrieving Report custom parameters
1427	Error while generating the summary table	Got exception during processing of Summary table details
1402	Service Tree for the network does not exist.	Exception during service retrieval
1420	Error during report cancellation request.	Got exception when cancelling the report run
1400	Error during report execution process.	Got exception while report run
1401	Error during the report series generation process.	Got exception while series generation process
1416	Topic not found for this network	Error while loading topics for selected network
1417	Unable to create a report definition.	Got exception during save report
1434	Virtual Link not found exception.	got exception when VLINK not found
1435	Invalid report parameter selection	Error during invalid selection of parameter
1443	Error during drill down report execution	Got exception during drill down report run
1444	Report Information not found for the selected report	Got exception during the retrieval of report
1432	Error during related report run process	Got exception during related report run
1447	No data found for the report selections	No data retrieve for selected parameter during report run
1448	Subscriber validation failed	when user has no visibility rights on given subscriber id
1449	Unable to send the E-mail	Got exception while sending email during publish
1450	Unable to delete Subscriber Data	Got exception while deleting subscriber
1430	Error during exporting the report	Got exception during report run
1431	Export Data Not found!	Gallery path incorrect in setting
1440	Merge Report Data Not found!	No data found from while merging the reports
1475	Report Dashboard not found	Got exception while dashboard processing
1476	Report Dashboard Data not found	When no data found in dashboard widgets
1477	Unable to delete report dashboard widget	Got exception during the deletion of dashboard widget
1478	Unable to save report dashboard widget	Got exception during save on dashboard
1479	Dashboard already contains the maximum number of widgets ? To add this report to dashboard either delete other reports on the Dashboard or pause any Scheduled Reports with Dashboard destination activated.	Got message during save a report on dashboard once maximum limit of report addition is reached on dashboard.

1455	Reports not owned by the user cannot be deleted.	Error during deleting report which is owned by other user
1456	Error while opening a report.	Got exception during the opening of reports
1457	Error while merging report.	Got exception during merging of two reports
1458	Report cannot be deleted.	Got exception during the deleting of Report
1459	Reports not owned by the user cannot be shared.	Error during the sharing of report which is owned by other user
1460	Reports not owned by the user cannot be unshared.	Error during the unsharing of report which is owned by other user
1461	User doesn't have the capability to share or publish a public report.	User does not have rights to share or publish a public
1462	Error while adding a report in gallery.	Got exception during the adding report to report gallery
1467	Error while saving report definition.	Got exception during the saving reports
1468	Error while creating leading inputs	Got exception during the creation of leading inputs
1481	Favorite Report Not Found!.	Got exception during retrieval of list of reports in MF
1482	Favorite Report cannot be deleted.	Error during the favorite report deletion
1483	Favorite Report cannot be added.	Error during the favorite report addition
1484	Favorite Report cannot be shared.	Got exception during sharing of reports
1485	Favorite Report cannot be duplicated.	Got exception during duplicate reports process
1486	Favorite Reports Accounts cannot be Found.	Error when account in MF not found
1491	Scheduled Report cannot be pause.	Error while pause of Schedule reports
1492	Scheduled Report cannot be resumed.	Error while resume of Schedule reports
1493	Scheduled Report cannot be executed.	Error while execution of Schedule reports
1494	Scheduled Report cannot be added.	Error while adding Schedule reports
1495	Scheduled Report cannot be deleted.	Error while deleting Schedule reports
1496	Scheduled Report cannot be Found.	Error while retrieving Schedule reports
1497	Report cannot be Scheduled.	Error while Scheduling reports process
1498	Scheduled Report cannot be duplicated.	Error while duplicating Scheduling reports process
1499	Scheduled Report cannot be Updated.	Error while updating Scheduling reports process
1445	Unable to save a report in my favorite	Error to save a report in my favorite.
1200	Monitoring Exception	Got exception during monitoring of different parameter
1201	Operation not valid on this type of statistics.	Error when operation not allowed on set of parameter
1100	Logging Exception	Got exception during logging process
1101	Configuration Exception	Got exception during server startup due to not setting proper DB configuration
1102	Invalid Configuration!	Error when the server startup configuration is invalid
1103	Missing Configuration!	Error when the server startup configuration is missing
1104	Remote Database configuration is not valid.	Error when Remote DB wrong configuration
1105	Remote Database cannot be deleted.	Error when Remote DB cannot be deleted
1108	Remote Database not found.	Error while retrieving Remote DB information
1106	Remote Database cannot be saved.	Error while saving Remote DB information
1107	Unable to test Remote Database Connectivity.	Error while test of Remote DB configuration

1109	Unable to update remote database , some attributes are missing.	Updating Remote data base with missing attributes
1501	Service Tree not found.	Error when service tree not found during topic load
1503	Default Services not associated with device	Error when default service is not associated with device selection
1505	Package not found	Package not found during network creation
1510	Network not found	Got exception while network retrieval
1511	Device not found	No device found in the process of auto discovery
1512	Topology not found	Got exception while topology retrieval
1515	Network cannot be saved	Got exception while network saving
1520	Zone not found	Zone not found during network creation
1521	Device cannot be deleted	Used as Master device
1525	Device cannot be saved	Got exception during saving of devices
1526	Device cannot be updated	Got exception during updating and saving of devices
1527	CMTS cannot be fetched	Got exception reading CMTS information from Remote DB
1528	? Network already exist, Please give some other name.	Creating network with existing name
1529	No Services exists for Master Device ?, Please select other device as Master.	Setting master device if there is no service exists
1530	No Services exist For Master Device ?,Network cannot be saved.	Setting master device if there is no service exists
1531	Report Filter not found	If report filter is not assigned in visibility filter
1533	Network cannot be updated	Got exception during updating and saving of network
1534	Network cannot be saved since selected Remote Database is not in CMTS aware mode.	conflict on CMTS aware database
1535	Network cannot be updated since selected Remote Database is not in CMTS aware mode.	conflict on CMTS aware database
1537	Subscriber Manager cannot be connected	Subscriber Manager Cannot be Connected.
1538	No Service Tree found for this network	Service tree not found for configured network
1539	Network Device details cannot be updated	Got Exception during Network Device Details updating
1700	Remote Database cannot be connected.	Error during connecting Remote Database
1701	Report protocol entity not found.	Error during retrieving report protocol
1702	Record doesn't exist in configuration (?) table	Error during remote database test connection
1703	Configuration (?) table doesn't exist	Error during remote database test connection
1110	Device Update failed. Master device cannot be unmanaged.	It appears if user unmanage a device which is acting as master device in any network.
1134	Remote database cannot be deleted, Network(s) are configured on this remote database.	Remote Database cannot be deleted if at least one network is created against same Remote Database.
1135	Device cannot be deleted, This device is configured as master device in network(s).	Master Device cannot be deleted.
1138	The IP Address of the device you have provided already exists. IP Address should be unique among devices of a	IP Address of the devices cannot be duplicate while discovering devices.

	Remote Database.	
2107	Maximum limit of authentication server has reached	Finite number of AAA server can be configured under each mode (by default, number of AAA server is 5).
2108	There are ? user(s) which are using this mode of authentication. In order to disable this mode, either these users need to be deleted or migrated	AAA Mode cannot be disabled if any account is created under same AAA mode.
2109	No active server available under this mode	AAA Server cannot be deleted under any AAA mode if only one server is active and at least one account is available under same mode.
2110	The authentication service is down, Please contact System Administrator or try later	Error during while login if all AAA servers of assigned mode are down.
2111	There are ? user(s) which are using this server. In order to delete this server, either these users need to be deleted or migrated	AAA Server cannot be deleted if at least one account is created under same AAA mode and only same server is active out of the list of servers.
1413	No report definition found for current selection. Please select other options.	selection of various parameters available on report wizard does not match with any defined reports
1502	Device discover failed , remote database cannot be connected.	Device discover operation get failed if in case remote device is not connectable.
1560	No applications exist for master device ?, Please select other device as master.	If selected master device does not have any application.
1562	Interface sync job is already running for this network.	This message appears if in case user tries to sync the interfaces but sync operation is already running behind.
1565	No applications exist for master device ?,network cannot be saved.	Network cannot be saved if master device does not have any application.