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# Net-Net® Interactive Session Recorder Release Notes

Release Version 5.0M1

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# About this Release Note

## Overview

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The *Net-Net Interactive Session Recorder Release Notes* provides the following information:

- About the Net-Net Interactive Session Recorder (NN-ISR)
- NN-ISR Release Notes
- Upgrading the NN-ISR

## NN-ISR Releases

The following Acme Packet Net-Net Session Director (SD) products are certified for use with the NN-ISR software:

- C-Series (Net-Net 3000/4000) SDs
- E-Series (Net-Net 2600) SDs
- Net-Net Application Session Controller (ASC)

**Note:** For more information on the Net-Net C-Series, E-Series, and ASC hardware, see Acme Packet's applicable hardware documentation.

## Who is Acme Packet?

Acme Packet (NASDAQ: APKT), the leader in session delivery network solutions, enables the trusted, first-class delivery of next-generation voice, data and unified communications services and applications across IP networks. Our Net-Net product family fulfills demanding security, service assurance and regulatory requirements in service provider, enterprise, and contact center networks. Based in Bedford, Massachusetts, Acme Packet designs and manufactures its products in the USA. For more information, visit [www.acmepacket.com](http://www.acmepacket.com).

## Related Documentation

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The following table lists related documents.

Document Name	Document Description
Net-Net Interactive Session Recorder Installation Guide	Provides an overview of the NN-ISR, hardware/software requirements and recommendations, storage considerations, pre-installation information, CIS and RSS installation procedures, post-install verification and configuration procedures, setting up and making a test call, and additional advanced topics about the NN-ISR.
Net-Net Interactive Session Recorder User's Guide	Contains information about using the NN-ISR Dashboard from the User's perspective. Provides information about viewing, playing, deleting recordings, running reports, and managing user profiles (Super User, Account Administrator, and Tenant Administrator only).
Net-Net Interactive Session Recorder Administrator Guide	Contains information about using the NN-ISR Dashboard for the Administrator level user (Super User, Account Administrator, and Tenant Administrator). Provides information about creating and managing accounts, routes, and users. Also provides information about configuring the NN-ISR, running reports, and viewing active calls.
Net-Net Interactive Session Recorder API Reference Guide	Contains information about Methods for Recording, VoiceXML Commands, representational state transfer (REST) application programming interface (API), Recording File Types/Formats Supported, Return Codes, sendIPCRCommand.jsp Subdialog, Advanced Options, Troubleshooting.

## Revision History

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This section contains the revision history for this document.

Date	Revision Number	Description
August 3, 2012	Revision 1.00	Release 5.0 of the Acme Packet NN-ISR. Various new features including a new NN-ISR Dashboard, and a feature of associating realms to accounts.
December 14, 2012	Revision 1.10	Initial release of the NN-ISR 5.0M1 software.
December 17, 2012	Revision 1.11	Updated to include 5.0M1 RSS fixes.
February 1, 2013	Revision 1.12	<ul style="list-style-type: none"> <li>Added a Reverting Your Installation to the Previous Version section</li> <li>Updates Upgrading the RSS</li> <li>Updates Updating the Index VM Database</li> </ul>
November 18, 2013	Revision 1.13	<ul style="list-style-type: none"> <li>Corrects various typographical errors.</li> </ul>
March 3, 2014	Revision 1.14	<ul style="list-style-type: none"> <li>Corrects the list of components installed during ISR installation.</li> </ul>

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## Introduction

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These Release Notes provide the following information:

- About the NN-ISR
- Supported Hardware/Software
- NN-ISR Release Process
- Features
- Issues Fixed
- Known Issues

## About the NN-ISR

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Acme Packet introduces the NN-ISR to the Interactive Voice Response (IVR) and Telecom industries. Awarded 2008 Communications Solutions Product of the Year Award, the NN-ISR allows any telephony or IVR environment to handle full-duplex call recording (both pre- and post-transfer).

The NN-ISR reliably records any phone call in carrier, enterprise, or contact center. Supporting enterprise & multi-tenant architectures, the NN-ISR provides ad-hoc (partial call) recording allowing any call to be recorded at any point and for any duration. Call recording can be initiated automatically by SIP URI or conditionally by any authorized VoiceXML or web application. In addition, call data such as time of call, callerID, account number, etc. are stored in a recording database for clients to search and review. Once recording starts, recordings can continue after being transferred to an agent or employee thereby providing continuity for recordings & call data across IVR, office, and call center telephony deployments.

Using the NN-ISR, VoiceXML and representational state transfer (REST) application programming interface (API) developers now have the ability to record every call, a percentage of calls, specific VoiceXML dialogs as well as transfers to agent conversations. With simple VoiceXML and REST API code, the VoiceXML application controls recording for any call, at any point and for a specific period of time. In addition, every recording may be indexed by key VoiceXML values or identifiers (account#, unique call identifier, SIP URI, time of call, etc.).

The NN-ISR can scale from one call to thousands of concurrent calls and is a simple add-on to any SIP telephony network. An affordable software-based solution, the IP Call Recorder runs on standard Intel-based servers in VoIP and standard telephony environments.

All current Net-Net SBCs support the use of the NN-ISR in a network. Contact Technical Assistance for information about previous NN-ISR release support with SBCs.

## Supported Hardware/Software

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### Hardware

This section describes the hardware Acme Packet has certified for load/capacity. Other hardware platforms may be compatible, but have not been certified for load.

### CIS & RSS Certified Hardware

The third-party servers in this section have been certified for use with Acme Packet’s NN-ISR software which is composed of two modular elements:

- **Control and Index Server (CIS)** - The CIS maintains metadata and indices; and provides browser-based administration.
- **Recording and Storage Server (RSS)** - The RSS, under the control of the CIS, records sessions and manages the storage and archival processes. It selects, starts, and stops recordings using Web services APIs.

**Note:** The specified processor choices and disk sizes of these third-party server recommendations represent the minimal options. Redundant environments require additional servers.

#### CIS Server

The following third-party server is certified for use with the NN-ISR and CIS software.

#### HP DL360 G7 Server

Features of this server include:

- Suitable for NN-ISR applications up to 5000 sessions
- Form factor: 8 SFF (Small Form Factor) drive bays total
- Dual Six-Core Intel Xeon® processors, 24 GB RAM
- Two AC power supplies

#### Configuration Recommendation

The recommended configuration for the HP DL360 G7 Server is:

Hardware	Qty
HP ProLiant® DL360 G7 Server	1
HP DL360 G7 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W)	2
HP 4GB memory (1 x 4GB @ 1333MHz)	6
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise (RAID 1)	2
HP 300 GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise (RAID 6 or 1+0)	4
HP Smart Array P410i/1G FBWC Controller – Low profile PCIe	1
HP NC375T PCI Express Quad Port Gigabit Server Adapter	1
HP 750W CS HE Power Supplies	2
HP 1.83m 10A C13-UL US Power Cords (North American variant; acquire applicable power cord for your region)	2

## RSS Server

The following third-party server is certified for use with the NN-ISR and the RSS software.

**Note:** The RSS certified drive specs call for a second drive to be used for recordings. For a procedure to mount a second drive, see the *Net-Net Interactive Session Recorder Installation Guide*.

### HP DL360 G7 Server

Features of this server include:

- Suitable for NN-ISR applications up to 500 sessions
- Form factor: 8 SFF (Small Form Factor) drive bays total
- Dual Quad-Core Intel® Xeon® processors, 8 GB RAM

### Configuration Recommendation

The recommended configuration for the HP DL360 G7 Server is:

Hardware	Qty
HP ProLiant® DL360 G7 Server	1
Quad-Core Intel® Xeon® Processor E5620 (2.40GHz/4-core/12MB/80W)	2
HP 4GB memory (2 slots x 4GB @ DDR3-1333MHz)	2
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise (RAID 1)	2
HP 300 GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise (RAID 1)	2
HP Smart Array P410i/1G FBWC Controller – Low profile PCIe	1
HP NC375T PCI Express Quad Port Gigabit Server Adapter	1
HP 750W Common Slot Gold Hot Plug Power Supply Kit (AC)	2
HP 1.83m 10A C13-UL US Power Cords (North American variant; acquire applicable power cord for your region)	2

## Software

This section provides a list of the software that installs during the NN-ISR installation process.

### NN-ISR Software

The following components are installed during the NN-ISR installation process:

- **Control and Index Server (CIS)** - Installs the following components:
  - VMware Enterprise vSphere™ Hypervisor (ESXi)
  - VMware vSphere™ Client
  - 2 Virtual Machines running Oracle Linux
    - NN-ISR Dashboard, Version 5.0.0 M1P0, Build 20121212
    - NN-ISR Index, Version 5.0.0 M1P0 Build, 20121212
- **Record and Store Server (RSS)**
  - NN-ISR RSS, Version 5.0.0M0P0, Build 20120716.154023

- NN-ISR API, Version 5.0.0M0P0, Build 2012.07.17\_14.48
- Archiver Service

For more information about installing the CIS and RSS software, see *Net-Net Interactive Session Recorder Installation Guide*.

## **NN-ISR Dashboard Requirements**

The following list recommends third-party applications you can use with the NN-ISR Dashboard.

The recommended third-party applications are:

- Web browser recommendations for NN-ISR Dashboard:
  - Microsoft® Internet Explorer 9 (IE9) with full regression specifically on IE Version 9.0.8112.16421 and with Quicktime® 7.7.1 Player Plug-in (<http://www.apple.com/quicktime/>) or Windows Media Player 10/11
  - Mozilla Firefox® 8.0 with Quicktime® 7.7.1 Player Plug-in or Windows Media Player 10/11
  - Google Chrome™ 16.0.912.63 with Quicktime® 7.7.1 Player Plug-in
  - Other browsers (please contact Acme Packet Customer Service before using other browsers)
- SIP softphone recommendations for testing:
  - X-lite by CounterPath Corporation - (<http://www.counterpath.net/x-lite.html>)
  - PhonerLite by Heiko Sommerfeldt - ([http://www.phonerlite.de/index\\_en.htm](http://www.phonerlite.de/index_en.htm))

## NN-ISR Release Process

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The NN-ISR Release process may consist of feature (F), maintenance (M), and/or patch (P) information. The numbering scheme for releases is outlined in the table below.

Upgrading from release to release must be done in sequential order (for example, from Release 5.0 to 5.0M1). For any subsequent releases (for example, 5.0M1 to 5.0M2, 5.0M1 to 5.0M2, etc.), you **MUST** continue to upgrade in sequential order (for example, from 5.0M1 to 5.0M2, 5.0M1 to 5.0M2, 5.0M2 to 5.0M3, etc.). For more information and procedures for upgrading your NN-ISR, see Chapter 2, Upgrading the NN-ISR.

The following table identifies the NN-ISR release process.

Releases	Description
M# (Maintenance Releases)	<p>Maintenance software releases numbered sequentially (for example, M1, M2, M3, etc.). Information in these releases contain maintenance fixes in the NN-ISR.</p> <p>All maintenance release information is documented in the NN-ISR Release Notes for that F#M# release. All maintenance information is rolled into the next F# release of the NN-ISR documentation set.</p>
P# (Patch Releases)	<p>Patch software releases numbered sequentially (for example, P1, P2, P3, etc.). Information in these releases contain issues fixed in the NN-ISR.</p> <p>All patch release information is documented in the NN-ISR Release Notes for that P# release. All patch information is rolled into the next release of the NN-ISR documentation set.</p>

**Note:** For information about the NN-ISR documentation set, see Related Documentation.

## Release 5.0M1

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This section describes the new adaptations added to the NN-ISR in release 5.0M1, including new features, issues fixed, and known issues.

### Features

The following are new features of the NN-ISR 5.0M1 release:

- Archiving Recordings Permanently
- Displaying DTMF Data in Recording's Details
- Managing Recording Format Profiles
- Managing Security Settings
- RSS Start-Up Command
- Reporting Session Rejection Statistics

### Archiving Recordings Permanently

From the dashboard, you now have the ability flag recordings to remain archived permanently.

**Note:** Super Users, Account Admins, and Tenant Admins automatically have permission to flag recordings to never expire. Tenant Users, however, must have the Delete Recordings Permission to be able to do this.

#### To flag a recording to never expire:

1. After logging into the NN-ISR Dashboard, click **Find Recordings** or click **Recordings** in the top menu bar.
2. Choose the recording you want to flag and click the Details icon.

The Recording's detail page displays.

3. Click the **File Location** link.



4. **Archive Permanently**—Check the box to ensure this recording is never deleted due to expiration.
5. Click **Save Changes**.

### Displaying DTMF Data in Recording's Details

You can now configure the NN-ISR to display DTMF details within a call's recording details for digits transmitted via RFC 2833 and SIP INFO. A new parameter, **DTMF Logging**, has been created which allows you to specify whether or not to display DTMF details on either a per-route or per-account basis.

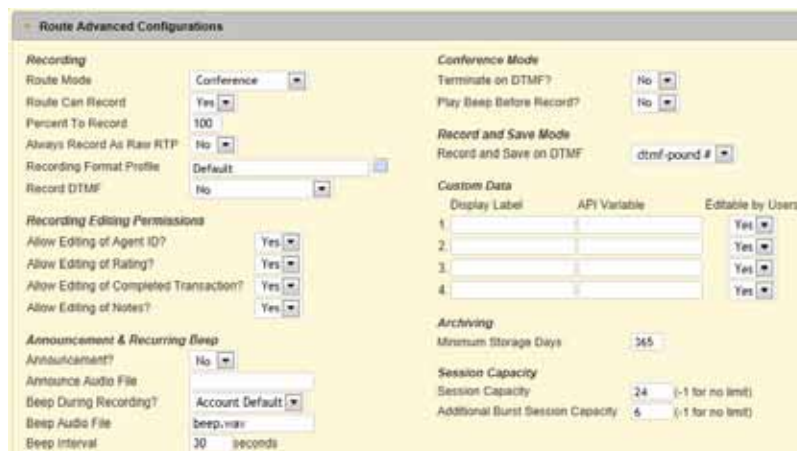
#### To enable the NN-ISR to display DTMF details for a particular route:

1. After logging into the NN-ISR Dashboard, click **Edit System Configurations** or click **Admin** in the top menu bar.
2. Click **Manage Routes**.



A list of all routes configured on the NN-ISR displays.

3. Click the route on which you are enabling DTMF details.
4. Click **Route Advanced Configuration**.



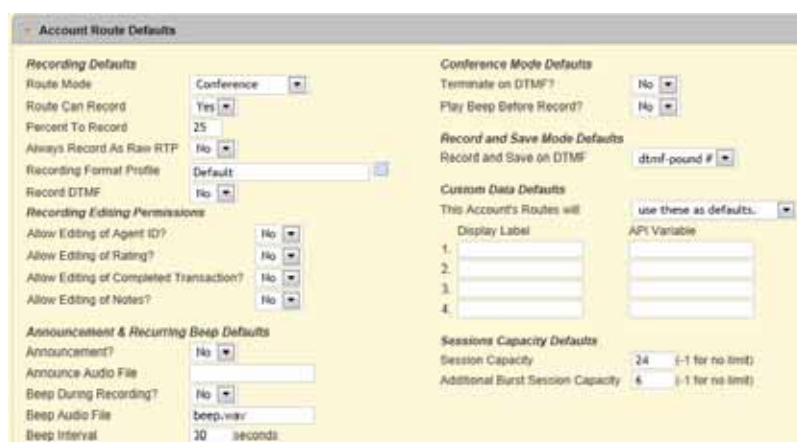
5. **Record DTMF**—Select whether or not to display DTMF details. Valid values are:
  - Use account or system default—This route defaults to its account’s behavior. This is the default value.
  - No—No DTMF details appear in the recording details.
  - Yes—DTMF details appear in the recording details.
6. Click **Update**.

**To enable the NN-ISR to display DTMF details for a particular account:**

1. After logging into the NN-ISR Dashboard, click **Edit System Configurations** or click **Admin** in the top menu bar.
2. Click **Manage Accounts**.

A list of all accounts configured on the NN-ISR displays.

3. Click the account on which you are enabling DTMF details.
4. Click **Account Route Defaults**.



5. **Record DTMF**—Select whether or not to display DTMF details. Valid values are:
  - No—No DTMF details appear in the recording details. This is the default value.

- Yes—DTMF details appear in the recording details.

6. Click **Update**.

**To view DTMF data in recording details:**

1. After logging into the NN-ISR Dashboard, click **Find Recordings** or click **Recordings** in the top menu bar.
2. Choose the recording you want to view and click the Details icon.  
The Recording's detail page displays.
3. Click **DTMF Events**. The DTMF data appears.



You can zoom in on a particular area of the DTMF Events graph by highlighting the section you want to view. To get back to the original graphical view, click **Reset zoom**.

**Managing Recording Formats**

With the addition of wideband codec support, the NN-ISR now supports 16 KHz sampling and recording in addition to 8 KHz. To support mixed sampling rates for transmission codecs and recording formats, you can now create and manage your recording format preferences. Managing your recording format profiles also helps you choose the appropriate recording format when multiple transmission codecs are present in a session.

The new **Manage Recording Format Profiles** link under the Admin tab allows you to make decisions about file sizes and recording quality so you can apply them to accounts and routes.

There are four Recording Format Profiles:

- Best Quality
- Default
- Small
- Smallest

By clicking on a codec profile, you can edit its name, provide it a description, select a quality preference for instances where multiple transmission codecs are used in a session, and configure a recording format mapping.

You can configure a quality preference for each recording format profile. This means in cases where multiple transmission codecs are present within one raw RTP file and the codec mappings for each are not the same recording format, the NN-ISR converts the raw RTP into a recorded file based on the profile's size versus quality preferences setting. This is an integer value from 0-100 and in the NN-ISR's GUI, this is configured using a sliding bar which you can drag to your desired position between Small File Size and Best Quality. The NN-ISR selects the recording format with the weighted size to quality ratio closest to your size versus quality preference.

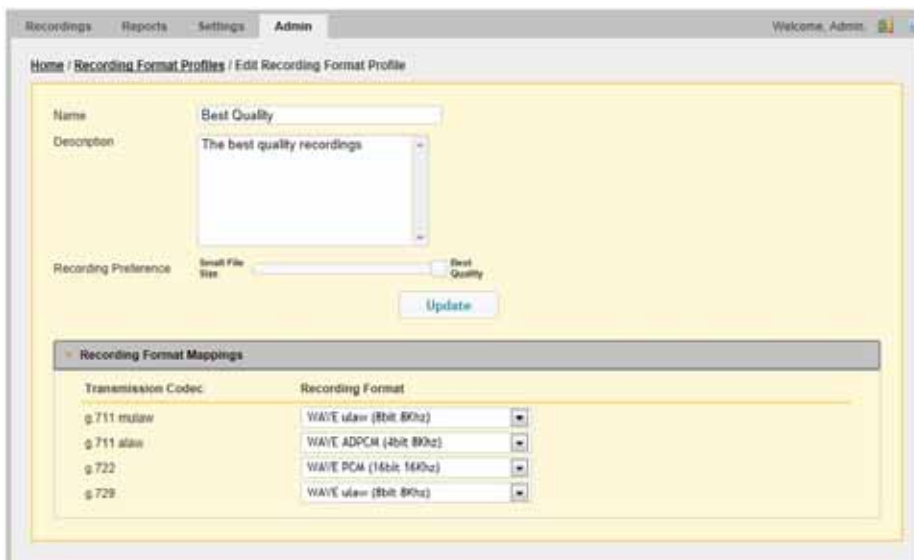
When handling particular transmission codecs which do not match the bit-size or sampling rate of the recording format, the NN-ISR performs up-sampling or down-sampling to conform the audio to the chosen destination format.

Within a recording format profile, you can also configure recording format mappings. This allows you to select a recording format for each of the four supported transmission codecs, g.711 mulaw, g.711 alaw, g.722, and g.729.

#### To edit a recording format profile:

1. After logging into the NN-ISR Dashboard, click **Edit System Configurations** or click **Admin** in the top menu bar.
2. Click **Manage Recording Format Profiles**.  
A list of all four recording format profiles displays.
3. Click the recording format profile you want to edit.

The Edit Recording Format Profile page appears.



4. **Name**—(Optional) Enter a name for this recording format profile.
5. **Description**—(Optional) Enter a brief description of this recording format profile.
6. **Quality Preference**—(Optional) Drag the slide-bar to the appropriate space between Small File Size and Best Quality based on the recording preference for this recording format profile.

#### To configure Recording Format Mappings:

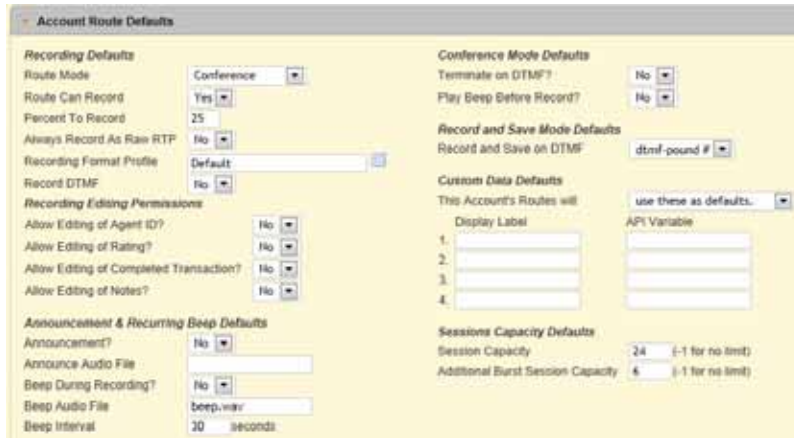
1. Click **Recording Format Mappings** in the Edit Codec Profile page.



2. Beside each Transmission Codec, select a Recording Format from the drop-down list.
3. Click **Update**.

**Applying Recording Format Profiles to Accounts**

1. After logging into the NN-ISR Dashboard, click **Edit System Configurations** or click **Admin** in the top menu bar.
2. Click **Manage Accounts**.  
A list of all accounts configured on the NN-ISR displays.
3. Click the account on which you are applying a recording format profile.
4. Click **Account Route Defaults**.

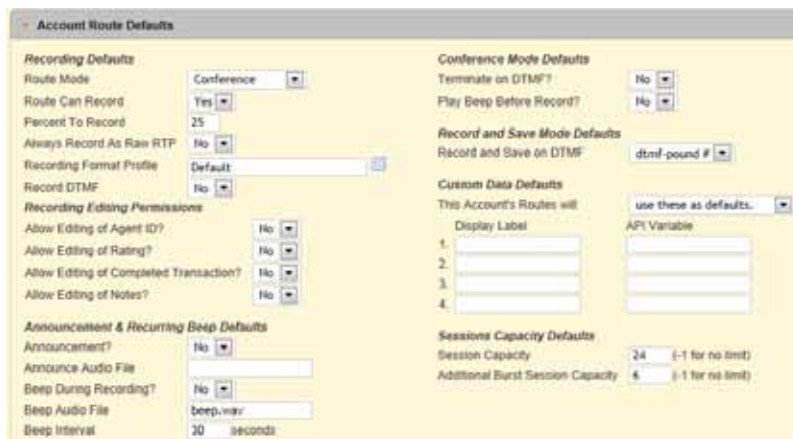


5. **Always Record as Raw RTP**—Select **Yes** when multiple transmission codecs are present in a session. If set to **No** with multiple transmission codecs present in a session, the NN-ISR will not record the call properly.
6. **Recording Format Profile**—Select the recording format profile you want to assign to this account. The default value is **Use System Account’s Profile**.
7. Click **Update**.

**Applying Recording Format Profiles to Routes**

1. After logging into the NN-ISR Dashboard, click **Edit System Configurations** or click **Admin** in the top menu bar.
2. Click **Manage Routes**.  
A list of all routes configured on the NN-ISR displays.
3. Click the route on which you are applying a recording format profile.

- Click **Route Advanced Configurations**.



- Always Record as Raw RTP**—Select **Yes** when multiple transmission codecs are present in a session. If set to **No** with multiple transmission codecs present in a session, the NN-ISR will not record the call properly.
- Recording Format Profile**—Select the codec profile you want to assign to this account. The default value is **default**.
- Click **Update**.

## Managing Security Settings

The Admin Manage Security Settings link has been created to allow you to configure dashboard security settings. Using this link you are able to configure password expirations, user lockout durations, maximum failed login attempts before lockout, and whether or not a user can view a forgotten password page.

### To Configure Dashboard Security Settings:

- After logging into the NN-ISR Dashboard, click **Edit System Configurations** or click **Admin** in the top menu bar.
- Click **Manage Security Settings**.



- Users Password Expires in**—Specify the number of days after which users' passwords expire. The default value is **90**.
- User Lockout Duration**—Specify the number of minutes of inactivity before the NN-ISR logs a user out. The default value is **30**.
- User Max Failed Logins Before Lockout**—Specify the number of failed login attempts allowed before the NN-ISR locks a user out.
- Show Forgotten Password Page?**—Specify whether or not a user can view a Forgotten Password Page. The default value is **no**.
- Click **Update**.

**RSS Start-Up  
Command**

Any time the RSS starts or restarts, the API issues an rssStarted command through XML-RPC, resetting the state of the database.

**Reporting Session  
Rejection Statistics**

The Usage and Billing reports have been enhanced to include more information regarding session rejection statistics. Each now report rejection statistics for the NN-ISR system as a whole as well as on a per-account and per-route basis.

For more information on Usage and Billing reports, see either the *Net-Net Interactive Session Recorder User Guide* or the *Net-Net Interactive Session Recorder Administrator Guide*.

## Issues Fixed

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This section describes the issues fixed in each component of the NN-ISR, Version 5.0M1.

### NN-ISR Dashboard

The following table lists the Dashboard component fixed issues in Version 5.0M1.

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Upgraded VM to use Ruby Version Manager (<i>Enhancement</i>)</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Upgraded VM to Ruby version 1.8.7 p370 (<i>Enhancement</i>)</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>The logo Preview link under the Edit Account section of the NN-ISR Dashboard now shows the image.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Error on Adding new user when SMTP configuration fails has been fixed.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Error on attempting password retrieval through 'forgot password' when SMTP configuration fails has been fixed.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Able to set custom data fields in Account route.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Error when viewing details of an account added vis CSV file import fixed.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Removing a Route User no longer redirects user to the User Details page.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Tenant user no longer give access to all reports or all routes in an account without the required permissions.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Now able to remove realm account association.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Now able to delete realms normally.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Able to set custom data fields in Route advanced configurations.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Notes and scoring permission being applied properly for Account Admin.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Custom data fields checkbox being applied properly.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Able to update route beep setting to 'Account default'.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Dashboard allows more than 255 log entries.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Show Appliance tab checkbox in Accounts view is being applied properly.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Live sessions showing recording status accurately.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>The Dashboard Usage Report graph is reporting accurate information.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>The 4.0F3 to 5.0 upgrade is behaving properly.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Error while trying to play recording in need of conversion on the Dashboard has been fixed.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Able to add To route and FROM route with the same pattern through the dashboard.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>The Dashboard no longer allows more than the Max Failed Login Attempts.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Removed unknown radio button in new location form.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Error on playing recording in need of conversion belonging to a deleted route has been fixed.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Able to delete an Account without problems.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Able to add additional sites without problems.</li> </ul>

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Live sessions displayed accurately under heavy load condition.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Recordings displayed properly and no MS IE error when compatibility view enabled.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Dashboard forces password reset.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Account Admin no longer has the ability to change their own user settings as well as the Super User.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Account Admin no longer has the ability to administer sites.</li> </ul>

## NN-ISR Index

The following Index component issues were fixed in NN-ISR, Version 5.0M1.

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>NTP package included and configured in guest OS, along with openssh-clients (for scp) and tcpdump (<i>Enhancement</i>)</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Handle big int in location free space.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>"Location" table indexes added for improved Archiver query performance.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>"Metadata_types" name changed from "apkt:in-realm" to "apkt:realm" as part of 5.0 Workspace 20120821.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>"General_tracking_events" table and associated triggers are added as part of Workspace 20120821.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>"Cdr_remote.status_index" added for Remote Archival performance as part of 5.0 Workspace 20120821.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>"Rec_notes_and_scoring.recording_id" foreign key now cascades deletes and updates.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>5-hour recordings not properly indexed.</li> </ul>

## NN-ISR RSS

The following RSS component issues were fixed in NN-ISR, Version 5.0M1.

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Changes to statistics updater. Statistics entries are submitted only when a session is finished.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>For G.729 codec negotiation, the NN-ISR always includes ftmp=18 annexb=no in the SDP media attributes. Codec G.729b is refused.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Fixed multiple same headers pass-through issue.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Fixed issue where G.729 RPDD recordings used an extra byte of storage per sample.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Fixed memory issue and minor process issue with various components.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Fixed incorrect conversion code returned on cancelling a conversion job.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Calls statistics updating on rejected calls.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>CleanUpVMGChannelLookup recognizing ACK_ALT correctly.</li> </ul>



Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Call-Info and Allow-Events headers being passed through RSS in pass-through mode correctly.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Fixed SIPREC re-INVITE race condition.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>RSS supports sendSaveRecording XMLRPC command.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Stop labeling the called party RTP stream "IVR".</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>Updated route map cache method to determine number of members in a route object.</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>RSS responding correctly to re-INVITE without SDP with a 415 - Unsupported Media Type.</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>Fixed the GenerateSDP function crash during codec change amid call.</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>Corrected re-INVITE negotiation for codec change amid call.</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>Bind SIP socket to the specified IP to prevent SIP agent from listening on all interfaces.</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>Changed supporting "apkt:in-realm" SIPREC metadata tag to "apkt:realm".</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>Resolved ad-hoc recording for G.729 calls providing incorrect recording filenames.</li> </ul>
5.0M0P0	<ul style="list-style-type: none"> <li>Changed local route map from utilizing map to multimap, allowing non-unique key entries.</li> </ul>

## NN-ISR API

The following API component issues were fixed in NN-ISR, Version 5.0M1.

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Added codec mapping and force RPDD support to the API.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Alternate recording location in cleanupVMGLookup.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Update to RSS Started to use hash map as unput and to return message along with code.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Update API to cancel conversion requests when it is no longer checking for results.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>File retrieval: No longer return unconverted RPDD files for certain pre-existing status codes.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>File retrieval: Fixed incorrect parameter types in the XMLRPC conversion request.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>File retrieval: Changed XMLRPC cancel conversion request method name to match name in Converter.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Removed some extraneous error logging from file retrieval.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Updated saveRecording to send proper method name.</li> </ul>

## NN-ISR Remote Archival Web Service

The following Remote Archival Web Service component issues were fixed in NN-ISR, Version 5.0M1:

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Updated Remote Archiver server to handle rejection call statistics and DTMF logging.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Added Remote Archiver test client.</li> </ul>

## NN-ISR Voice Application Monitor

The following Voice Application Monitor (VAM) component issues were fixed in NN-ISR, Version 5.0M1:

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Proper version and build logging.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Fixed SNMP-only and email-only notification modes.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Vam_+db.sql update for more appropriate initial test configurations.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>MIB update – Removed Newfound, reorganized and updated trap-type object IDs.</li> </ul>

## NN-ISR Archiver

The following NN-ISR Archiver component issues were fixed in NN-ISR, Version 5.0M1:

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Build number included in logging.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Synchronized iteration through conversion request/results Hashtable to handle ConcurrentModificationException under load.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Handling changes in conversion and directory structure settings which could leave recordings in a "conversion failed" state due to the handling of the recording paths.</li> </ul>
5.0M1	<ul style="list-style-type: none"> <li>Accounting for conversion successes received before conversion request Acknowledgements.</li> </ul>

## NN-ISR Converter

The following NN-ISR Converter component issues were fixed in NN-ISR, Version 5.0M1:

Release	Description
5.0M1	<ul style="list-style-type: none"> <li>Fix of conversion of G.722 RPDD recordings.</li> </ul>

## Known Issues

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This section describes the known issues in each component of the NN-ISR, Version 5.0M1.

### **NN-ISR Dashboard**

There are no known issues in the Dashboard for NN-ISR, Version 5.0M1.

### **NN-ISR Index**

There are no known issues in the Index component for NN-ISR, Version 5.0M1.

### **NN-ISR RSS**

There are no known issues in the RSS component for NN-ISR, Version 5.0M1.

### **NN-ISR API**

The following is a known issue in the API for NN-ISR, Version 5.0M1:

- Dynamic directory information in the FileNameFormat configuration parameter in RSS's configuration file, vmgConfig.xml, is not applied properly in this release. If used, route-based recordings do not index properly and calls are not available in the Dashboard or through Remote Archival and API requests.
- The value of the duration field in the response to getFileInfo requests for in-progress recordings does not account for time lost during pausing of the recording.

## Release 5.0

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This section describes the new adaptations added to the NN-ISR in release 5.0M1, including new features, issues fixed, and known issues.

### Features

This section describes the new features in each component of the NN-ISR Release 5.0. It also includes platform and security enhancements made in this release.

### Platform Enhancements

The NN-ISR Dashboard, Version 5.0 platform enhancements are:

- Nginx upgrade from Version 1.0 to 1.2.
- Rails update from Version 2.3.11 to 2.3.14

### NN-ISR Dashboard

NN-ISR, Version 5.0 introduces a new single Dashboard for configuration and administration of the NN-ISR platform. This Dashboard comprises a new user interface design that includes all of the features from previous NN-ISR releases, as well as new features. It is the only dashboard now available for the NN-ISR, and can be accessed via access-level passwords by Administrators and Users.

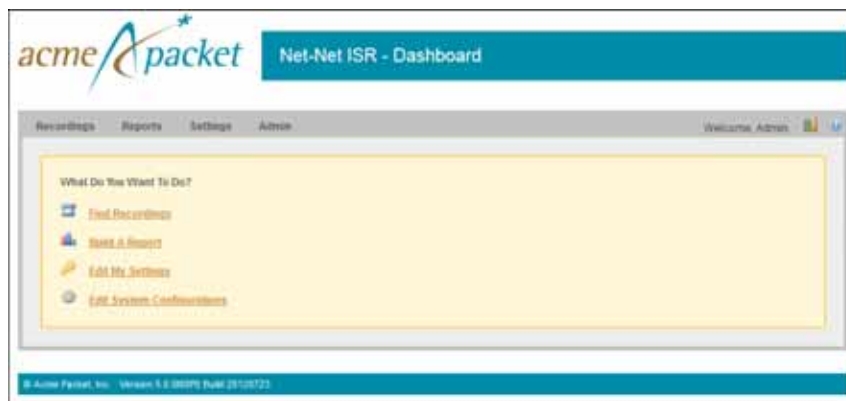
The new features of the NN-ISR Dashboard documented in this section are:

- Single NN-ISR Dashboard (now accessible by an Administrator or User depending on their login access level)
- Unlock a Locked Out User
- New Administrative Tab
- Account Level Branding
- User Profile Import Feature (importing CSV files)
- Quick View of Users Sorted by Account
- Redesign of Viewing a Site Page
- Search Recordings by File Name
- Redesign of Display for Live Sessions
- Realm-Based Recording Policy
- Additional Searchable SIPREC Extension Data
- Security Enhancements
- Additional Dashboard Features

Each of these features are described in the following paragraphs.

### Single NN-ISR Dashboard

The NN-ISR Dashboard is redesigned in a single application to manage all of the features from previous releases, along with new features in Version 5.0. The Dashboard continues to allow you to easily manage recordings, accounts, routes, users, and sites. The following illustration shows the initial page that displays after logging into the NN-ISR Dashboard.



For more information about the new NN-ISR Dashboard, see the *Net-Net Interactive Session Recorder Administrator Guide* or the *Net-Net Interactive Session Recorder User Guide*.

### Unlock a Locked Out User

An Administrator can now unlock a locked out user that performed more than three login attempts. Contact Acme Packet for more information.

### New Administrative Tab

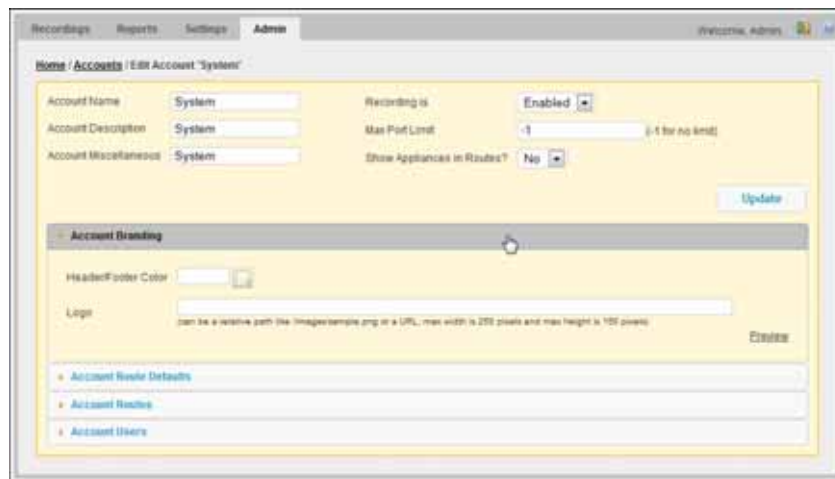
In the NN-ISR Dashboard, a new Admin tab now displays on the Main Menu. The Admin page displays the following list of options:

- **Manage Realms** - Allows you to add, edit, and delete realms associated with an account(s)
- **Manage Accounts** - Allows you to add, edit, and delete account configurations, as well as perform account branding and edit the realm associated with the account.
- **Manage Routes** - Allows you to add, edit, and delete route configurations associated with accounts.
- **Manage Authorization Services** - Allows you to add, edit, and delete authorization services associated with the session recording client (SRC).
- **Manage Users** - Allows you to add, edit, and delete users in the NN-ISR. Also allows you to set passwords, permissions, and privilege levels for each user.
- **Manage Sites** - Allows you to add, edit, and delete sites. Also allows you to configure, manage, and monitor recording servers, set up archival and Session Agent permissions, as well as view the number of ports currently in use on the NN-ISR.
- **Live Sessions** - Allows you to view live call sessions currently in progress on the NN-ISR. This feature is read-only.



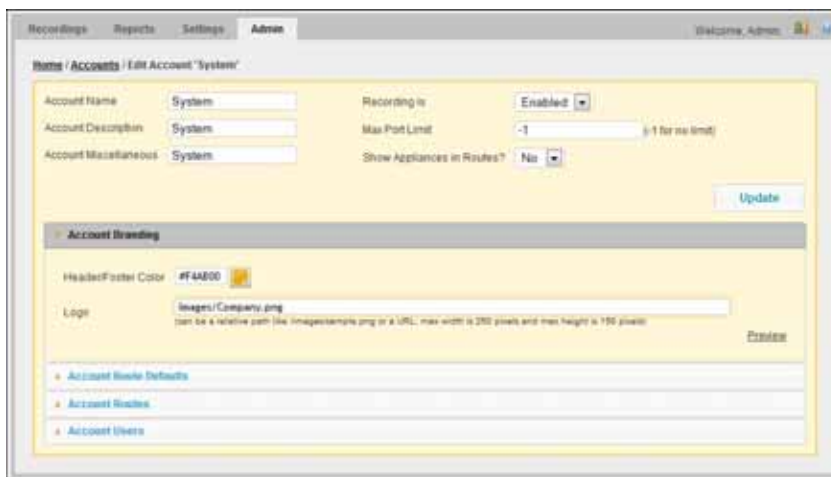
**Account Level Branding**

Version 5.0 of the NN-ISR includes a new Account Branding feature for each account. After selecting an account to edit at the path *Admin->Manage Accounts*, you can select **Account Branding** to customize the NN-ISR Dashboard’s header and footer color, and specify a logo to display for each account.

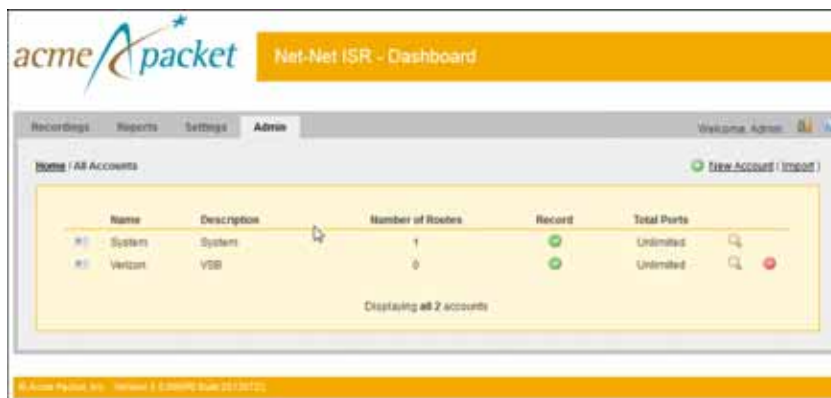


**To apply branding to an account:**

1. After logging into the NN-ISR Dashboard as an Administrator, click on the **Admin** tab.
2. Click **Manage Accounts**.
3. Select an account from the Accounts page and click the Details icon for that account.
4. Click **Account Branding** to expand the branding information.

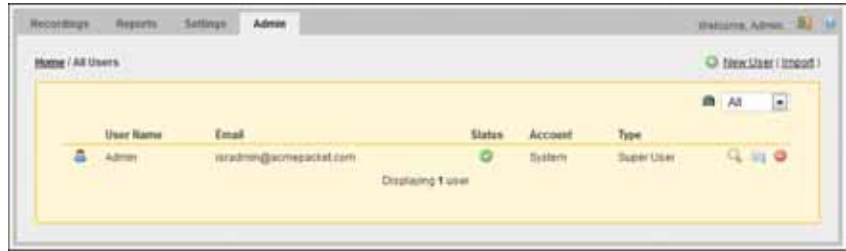


5. **Header/Footer Color**—Click on the icon next to the text field to select the company color to apply to the Header and Footer, as well as all the button names in the NN-ISR Dashboard.  
 Or enter the Company’s color code, in Hex format, in the text box. For example, #F4AB00.
6. **Logo**—Enter the file name of the Company logo you want to apply to the header of all the screens in the NN-ISR Dashboard. If required, you can specify the path name where the file is currently stored. For example, *images/Company.png*.
7. Click **Preview** to verify the color and logo changes before saving.
8. Click **Update** to save the changes. The color and logo you specify display on the screens in the NN-ISR Dashboard.



**User Profile Import Feature (importing CSV files)**

The NN-ISR now includes a feature for importing a User Profile. After creating a “.CSV” file that contains User profile information, you can import that profile into the NN-ISR database using the User import feature on the Users page. The following illustrations show the User import screens.



After clicking **Import** in the upper right corner of the page, the following dialog box displays, allowing you to browse and select the file to import. This box also provides the “Guidelines” required before importing the User profile, and a sample file for reference purposes.



**Quick View of Users Sorted by Account**

The User page can now display the NN-ISR users sorted by accounts. You can select which account to display from the drop-down list on the Users page.

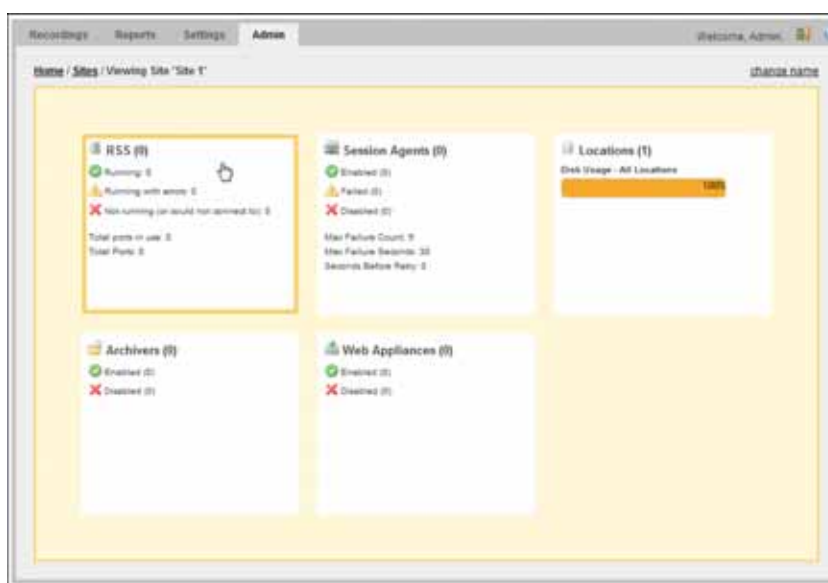






**Redesign of Viewing a Site Page**

The Viewing a Site page has been redesigned to display all component info on a single page. You can now click a component (RSS, Session Agents, Locations, Archivers, Web Appliances) to display additional information about each component.



The following image shows additional information on the component.



**Search Recordings by File Name**

You can now search for recordings on the Recording page using the **File Name** option in the drop-down box. You can display all recordings in the NN-ISR database by file name, or you can specify a file name in the search box.



**Note:** For more information about searching for recordings, see the *Net-Net Interactive Session Recorder Administrator Guide*.

**Redesign of Display for Live Sessions**

The Live Session page displays all active call recordings on the Net-Net ISR, and is now view-only. You can no longer manage the active recordings.



**Note:** For more information about Live Sessions, see the *Net-Net Interactive Session Recorder Administrators Guide*.

**Realm-based Recording Policy**

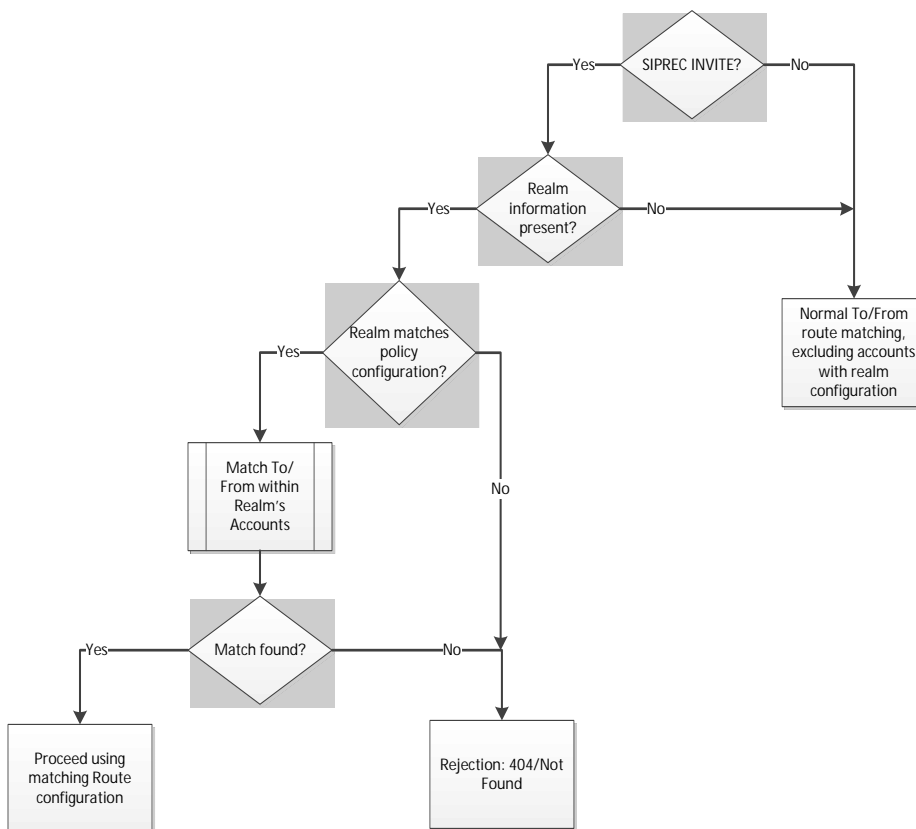
In the NN-ISR Dashboard, an Administrator can now add, edit, and delete realms. After adding a realm, you can then associate an account to that realm. An account can have multiple associated realms and a realm can have multiple associated accounts.

**Note:** The configured realm must already exist in the Net-Net SBC before adding it to the NN-ISR.

**How Realm-based Recording Works**

The NN-ISR performs recording affiliation and route-matching based on the configured route pattern and the associated realm. The NN-ISR only inspects incoming SIPREC INVITEs for the inclusion of a realm label within the SIPREC extension data. If a realm label exists, it is used to search any configured routes associated with an account(s) in the matching realm. The RSS looks for a To/From match (similar to the way lookups are performed) in the realm's configured accounts and routes.

The following flow diagram illustrates how the NN-ISR perform realm-based recording.



When adding a realm, the NN-ISR checks for a wildcard “%” character in the Realm Label. If the wildcard exists, an error message displays. If a wildcard does not exist, the realm is added.

Deleting a realm removes all associations to accounts in the NN-ISR database. The NN-ISR compares the deleted routes of the realm with the routes not in a realm. If there are routes of the same type and pattern in both locations, an error displays and the delete function fails.

In the Realm edit view, the associated account(s) in the realm display. In the Accounts edit view, the realm(s) associated with the account display only after adding an associated realm(s) to the NN-ISR.

The following rules apply when associating an account(s) to a realm:

- You can associate multiple accounts to a single realm. Routes created on these accounts must have unique route patterns across the related accounts.
- Wildcard routes:
  - are treated like normal 'pattern' routes. They are unique across realms and accounts.
  - can have any priority.
  - if set with a higher priority than a 'distinct' route, the Dashboard displays a warning that the user is about to set a wildcard route higher than the list of lower priority routes, and prompts the user to confirm whether or not to continue.
- You cannot configure wildcard realms.

- Associating a realm with an account(s) is optional. Routes created across accounts with no realms must be unique. This allows the NN-ISR to support legacy (non-SIPREC) installations, as well as maintain compatibility with other SIPREC compliant Session Recording Clients (SRCs).

You can also create a Report comprising Realm information. The display includes the following column headings:

- Realm ID
- Account Name
- Route Pattern
- Priority
- Recording Status (enabled/disabled)
- Recording %

**Note:** For more information about creating reports, see the *Net-Net Interactive Session Recorder Administrators Guide*.

**To associate an account(s) with a realm:**

**Note:** Before associating an account to a realm, make sure the realm already exists in the Net-Net SBC configuration.

1. After logging into the NN-ISR Dashboard as an Administrator, click on the **Admin** tab.



2. Click on **Manage Realms**. The following page displays.



Column	Description
Label	Name of the realm currently stored in the NN-ISR database.
Description	Description of the associated realm.

- Click on **New Realm** in the upper right corner of the page. The following dialog box displays.



- Label**—Enter the name of the realm you want to associate with an account. Valid values are up to 45 alpha-numeric characters.
- Realm Description**—(optional) Enter a description of the realm. Valid values are up to 255 alpha-numeric characters.
- Click **Create**. The following display is an example of a new realm in the NN-ISR Dashboard.



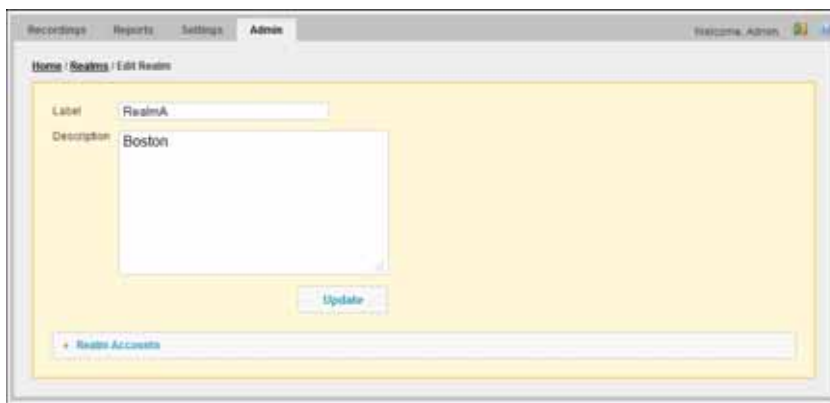
The realm ID increments as you add realms. A logging event is also triggered and stored in the audit log to be viewed if required.

You can edit a realm label and description by clicking on the applicable realm in the list or by clicking the Details icon.

You can delete a realm by clicking the Delete icon.

**Note:** For more information about editing and deleting realms, see the *Net-Net Interactive Session Recorder Administrators Guide*.

- On the Home/All Realms page, click on the realm you added or click the Details icon for a realm. The following page displays with a Realm Accounts selection at the bottom of the page.



8. Click **Realm Accounts** to expand the page. The following displays.



9. **Select an Account to add**—Select an account to associate with the current realm in focus.

**Note:** You must have previously established an account before you can associate that account with a realm.

10. Click the Add icon. The following message displays:

*Are you sure you want to add this account?*

11. Click **Yes** to associate this account with the current realm.

**Additional searchable SIPREC Extension Data**

The NN-ISR now parses and stores the Request-URI, P-Asserted-ID, and Diversion headers (included in the recording sessions’s SIPREC metadata), allowing these fields to be searchable. The search results display in the NN-ISR Dashboard.

**To search for SIPREC metadata:**

1. After logging into the NN-ISR Dashboard as an Administrator, click on the **Recordings** tab.



2. Click **advanced search**. The following dialog box displays.



3. Click **By Session Search Options** to expand the dialog box.



4. **apkt:in-realm**—Enter the name of the NN-ISR realm that received the SIPREC session (in-realm). Valid values are alpha-numeric characters.

5. **apkt:P-Asserted-Identity**—Enter the remote party’s ID in the SIPREC session. The NN-ISR uses the P-Asserted-Identity header field to convey the proven identity of the originator of a request within a trusted network. Valid values are alpha-numeric characters.
6. **apkt:Diversion**—Enter the call forwarding phone number from the SIPREC session, to which the incoming call was diverted. Diversion is a call forwarding feature that lets an incoming call to a called party be redirected to a third party. Valid values are alpha-numeric characters.
7. **apkt:request-uri**—Enter the Uniform Resource Identifier (URI) in the header of the request message of the SIPREC session. The URI in the request message contains sufficient information to initiate and maintain the SIPREC communication session. Valid values are alpha-numeric characters.
8. Click **Search** to perform the search based on the SIPREC metadata settings.

## Security Enhancements

The following security enhancements were implemented in the NN-ISR:

- Optional configuration to force cookies through an encrypted (SSL/TLS) session. For a procedure to enable serving pages with SSL, see [Enable Serving Pages with SSL \(to force SSL cookies\)](#).
- Cache-control set to no-cache to avoid possible storage of sensitive data in local browser
- Enforced stronger password controls
- Formed auto-complete disabled within login page
- Removed "hidden" URLs

## Additional Dashboard Features

The following are additional Dashboard features:

- Event handler enhancements for displays in list view.
- Session Agent IP address validation now supports ports.
- User interface lock-out feature for users who unsuccessfully login using more than three attempts.

Unsuccessful login message now includes the length of time a user has to wait before logging in again.

## NN-ISR Index

The following are new features in the Index component for the NN-ISR:

- To account for realms functionality and storage of the Request-URI, P-Asserted-Id, and Diversion headers, the following changes to the MySQL database have been made:
  - A “realms” table and a relational “accounts\_realms” table were added along with appropriate attributes and triggers. For more information, see [Realms in the NN-ISR Database Schema](#).
  - New searchable fields that display for **apkt:in-realm**, **apkt:P-Asserted-Identity**, **apkt:Diversion**, **apkt:request-uri** have been added to the metadata\_types table. For more information, see [Additional Searchable SIPREC Extension Data](#).

## Realms in the NN-ISR Database Schema

The **accounts\_realms** table links the Accounts table (foreign key: account\_id) and the new realms table (foreign key: realm\_id). It also has triggers to insert an 'update' entry



into the `route_map_tracking_events` table whenever a realm entry is added or removed. This ensures that the Route Map remains up-to-date when realms are added to or removed from accounts. The `accounts_realm` table in the database schema is as follows:

#### **accounts\_realm**

<b>id</b>	<b>ID for this association</b>
Account_id	Accounts.realm_id
Realm_id	Realms.realm_id

## **NN-ISR RSS**

The following are new features in the RSS component for the NN-ISR:

- RSS Installation Option for USB Recovery Stick
- RSS VRRP Configuration Option
- Additional RSS Features

### **RSS Installation Option for USB Recovery Stick**

You now have the option to create a recovery Universal Serial Bus (USB) stick during the installation of the RSS. This feature allows you to save the RSS host configuration information to a backup USB stick to restore at a later time if required. Use the following procedure to create a recovery USB stick.

#### **To create a recovery USB stick:**

1. Insert a USB stick into the USB drive of the RSS host.

**Note:** This procedure erases the USB stick contents. Use a blank USB stick or a USB stick where the contents can be overwritten.

2. From the Administrator command-line, enter **restore-stick-create**, and press **Enter**.

```
Hostname> restore-stick-create
```

The following prompt displays:

```
Are you sure (y or n)?
```

3. Enter **y** and press **Enter**. The following messages display:

```
Starting rescue-stick-create as a background operation. This operation takes approximately 10 minutes. A notice-level system log and trace message will indicate completion ("trace system notice").
```

4. Turn on System Trace Messages to Notice level by entering **trace system notice**, and press **Enter**.

```
Hostname> trace system notice
```

When creation of the restore stick is successful, the following system notice displays:

```
system[notice]: restore-stick-create operation complete
```

You now have a recovery USB stick that contains all of the configuration for this RSS device.

#### **Restoring an RSS host from a Recovery USB Stick**

You can restore an RSS host configuration from a recovery USB stick as required.

#### **To restore an RSS host from the recovery USB stick:**

1. Insert the recovery USB stick into the USB drive of the RSS host.
  - 1a. Delete the file named **"rescue"** from the recovery USB stick on the "cxc\_install" partition (the default partition is visible via Windows).
2. Restart the RSS host with the recovery USB stick still inserted.

The recovery stick fully restores your RSS host to the snapshot taken when the recovery stick was created. The RSS Host reboots after restoration. After this reboot, the RSS host becomes fully operational.

## RSS VRRP Configuration Option

The RSS component now has a Virtual Router Redundancy Protocol (VRRP) configuration option. Use the following procedure to configure VRRP on the NN-ISR.

### To configure VRRP on the NN-ISR:

1. At the NN-ISR prompt enter **config cluster vrrp** and press **Enter**.  
 NN-ISR> **config cluster vrrp**
2. Enter **show** to verify there are currently no VRRP interfaces configured, and press **Enter**.  
 config vrrp> **show**  
 The following displays:  
 cluster  
 vrrp
3. Enter **config vinterface <VRRP interface name>** to create the VRRP vinterface, and press **Enter**.  
 config vrrp> **config vinterface vx1**  
 The following message displays:  
*Creating 'vinterface vx1'*
4. Enter **set host-interface cluster box 1 interface eth 1** to add the Ethernet adapter 1 to the virtual vinterface and press **Enter**.  
 config vinterface vx1> **set host-interface cluster box 1 interface eth1**
5. Enter **set host-interface cluster box 1 interface eth 2** to add the Ethernet adapter 2 to the virtual vinterface, and press **Enter**.  
 config vinterface vx1> **set host-interface cluster box 1 interface eth2**
6. Enter **config ip media** to create and configure the IP address settings for this vinterface, and press **Enter**.  
 config vinterface vx1> **config ip media**
7. Enter **set ip-address static <IP address of vinterface>** to set the static IP address for the vinterface and press **Enter**.  
 config ip media> **set ip-address static 172.30.58.109/24**
8. Enter **config icmp** to enable the Internet Control Message Protocol (ICMP) for the vinterface, and press **Enter**.  
 config ip media> **config icmp**
9. Enter **return** to return to the "config ip media" prompt, and press **Enter**.  
 config icmp> **return**
10. Enter **config ssh** to enable a secure shell for the vinterface and press **Enter**.  
 config ip media> **config ssh**
11. Enter **return** to return to the "config ip media" prompt, and press **Enter**.

```
config ssh> return
```

12. Enter **exit** to save the configuration settings, and press **Enter**.

```
config ip media> exit
```

The following prompt displays.

```
Do you want to commit your changes before you exit (y or n)?
```

13. Enter **y** to commit the changes, and press **Enter**.

The following prompt displays:

```
Do you want to update the startup configuration (y or n)?
```

14. Enter **y** to update the startup configuration, and press **Enter**. The NN-ISR prompt displays.

```
NN-ISR>
```

**Note:** Configuration of RSS VRRP requires an RSS restart before they can take affect.

15. Enter **restart**.

16. After the RSS has restarted, login to the NN-ISR with your login ID and password.

The following prompt displays.

```
NN-ISR>
```

17. Enter **show vx-bindings** to verify the vinterface is bound, and press **Enter**.

```
NN-ISR> show vx-bindings
```

The following output displays.

```
vx-interface ethernet
```

```
-----
```

```
vx1          eth1
```

The vx-interface lists the vinterface created in Step 3 of this procedure. The Ethernet entry is the first interface added in Step 4 which has a link connection to the Router.

For more information about VRRP configuration, see the *Net-Net OS-E Object and Properties Reference Guide, Release 3.6*.

## Additional RSS Features

The following are additional new features of the RSS component in NN-ISR, Version 5.0:

- Performance improvements in Real-Time Transport Protocol input/output (RTP I/O), RingBuffer, Session Initiation Protocol (SIP) Proxy, and SIP library.
- Support of feature "realm base routing policy". For more information, see Realm-Based Recording Policy.
- Support of feature "Search and Retrieval of SIPREC SD Extension Data". For more information, see Additional Searchable SIPREC Extension Data.
- Support of G.722 codec negotiation.
- Support of Dynamics codec negotiation.
- Converter support:
  - G.722 Conversion to .wav format
  - 16KHz .wav file
  - Minor updates to handle multiple different .rpdd formats

## NN-ISR API

The following are new features in the API component for the NN-ISR, Version 5.0:

- Modified REST and VXML API URLs
- Relocated REST and VXML Logging Files
- New REST API Commands
- Realms in the NN-ISR Database Schema
- Supports realms-based recording policy. For more information, see Realm-Based Recording Policy.

### Modified REST and VXML API URLs

The VXML and REST APIs have been consolidated into a single deployment package, *IsrApi.war*, with new URIs:

REST: <host:port>/IsrApi/rest/<command>

VXML: <host:port>/IsrApi/sendIPCRCommand.jsp?command=<command>

### New REST API Commands

The REST API provides new methods that return a list of routes either per account or per realm. The `getRoutesForAccount` and `getRoutesForRealm` methods each take a single parameter, `accountName` and `realmLabel`, respectively. For `getRoutesForAccount`, all routes belonging to that account are selected from the `route_config` table. For `getRoutesForRealm`, all accounts associated with that realm are found using the `accounts_realms` table. Then, all routes belonging to each account are selected from the `route_config` table and compiled into a master list for the realm.

#### Required Input Parameters

Method	Parameter	Value	Description
<code>getRoutesForAccount</code>	<code>accountName</code>	<account Name>	The name of the account in which to search for routes.
<code>getRoutesForRealm</code>	<code>realmLabel</code>	<realm label>	The label of the realm in which to search for routes.

#### Return Values

Parameter	Value	Description
<code>code</code>	-1   0 to 27	Numbered result code. Zero (0) indicates success. All other responses indicate command failure.
<code>message</code>	<status text>	Refer to the <i>Net-Net Interactive Session Recorder API Reference Guide</i> for valid Return Code values for this parameter.  Return Code 27, "Missing Parameter - %parameter% parameter is required." is new in NN-ISR Version 5.0.
<code>routes</code>	<array of routes>	Array of routes corresponding to the account or realm entered. Each route is comprised of several elements, in the following order: <ul style="list-style-type: none"> <li>• <code>account_name</code></li> <li>• <code>realm_label</code></li> <li>• <code>route_pattern</code></li> <li>• <code>priority</code></li> <li>• <code>is_recording_enabled</code></li> <li>• <code>percent_to_record</code></li> </ul> If a route belongs to more than one realm, a separate element is returned for each.

#### REST Commands

The REST API command functionality now includes the `getFile` and `getFileInfo` commands:

- **getFile** - Previously only available as a VoiceXML API command, the REST API functionality now includes the getFile Command. Using getFile downloads the specified recording file, which can then be saved or opened.
- **getFileInfo** (optional 'inProgress' parameter) - The getFileInfo command has the ability to retrieve information about recordings in progress. This is done via the optional 'inProgress' parameter. If the parameter is not present or its value is not 'true', search is done only for completed files. If its value is 'true', search is done for currently recording files only.

## Relocated REST and VXML Logging Files

The REST and VXML API logging have changed to a single log located in a new directory path:

*/cxc\_common/ISR/ApiLog/IsrApi.log*

The following paragraphs describe the logging changes for each NN-ISR component.

### Dashboard Logs

The following events are added to the Dashboard log at the INFO level:

- When adding a realm in the Dashboard is successful, the NN-ISR writes the following log entry to the Dashboard log:  
AdminController.create\_realm - {user email} - Successfully created Realm with ID={realm id}: {realm label}
- When editing a realm in the Dashboard is successful, the NN-ISR writes the following log entry to the Dashboard log:  
AdminController.update\_realm - {user email} - Successfully updated Realm with ID={realm id}: {realm label}
- When deleting a realm in the Dashboard is successful, the NN-ISR writes the following log entry to the Dashboard log:  
AdminController.delete\_realm - {user email} - Successfully deleted Realm with ID={realm id}: {realm label}
- When adding a realm to an account is successful, the NN-ISR writes the following log entry to the Dashboard log:  
AdminController.add\_realm\_to\_account - {user email} - Successfully associated Realm with ID={realm id}: {realm label} with Account with ID={account id}: {account name}
- When removing a realm association from an account is successful, the NN-ISR writes the following log entry to the Dashboard log:  
AdminController.remove\_realm\_from\_account - Successfully disassociated Realm with ID={realm id}: {realm label} from Account with ID={account id}: {account name}

### API Logs

A new log entry is added to IsrApi.log at the INFO level which indicates a realm(s) has been added to an account during getAccountList and updateAccountList. New log entries are also added for the new client API commands to retrieve lists of routes for an account or realm.

## Additional API Features

The following are additional new features of the API component in NN-ISR, Version 5.0:

- Updated API methods **getAccountList** and **updateAccountList** to return realm information for the RSS's route map. For more information, see API Logs.
- Added a new result code and message:  
Code 27 - "Missing Parameter - %parameter% parameter is required."
- Updated SIPREC extension data within the APIs to handle multiple values for the same metadata type. For more information, see Additional Searchable SIPREC Extension Data.

## Enable Serving Pages with SSL (to force SSL cookies)

In the NN-ISR, cookies are not forced through Secure Sockets Layer (SSL). If you want to force the SSL cookies, you must enable the SSL serving pages to do this. Use the following procedure for enabling this feature.

### To enable serving pages with SSL to force SSL cookies:

1. Enable SSL in nginx:
  - 1a. Edit the nginx configuration file (*/opt/nginx/nginx.conf*) and uncomment the the following SSLconfig lines (remove the “#” sign):
 

```
# listen 443;
# ssl on;
# ssl_certificate /opt/nginx-1.2.0/conf/server.crt;
# ssl_certificate_key /opt/nginx-1.2.0/conf/server.key;
# keepalive_timeout 60;
```
  - 1b. Confirm the locations of the SSLcertificate and key currently being used.
  - 1c. Save the changes in the editor, and restart nginx by entering the command:
 

```
servi ce ngi nx restart
```
2. After the restart, confirm access of the application using https in a browser.
3. Enable secure cookies in the NN-ISR Dashboard:
  - 3a. Edit */var/www/user\_dash/config/initializers/session\_store.rb*
  - 3b. Inside of 'ActionController::Base.session = { .....}', add the new line
 

```
':secure => true',
```

**Note:** Add a comma to the end of the line.
  - 3c. Restart nginx by entering the command:
 

```
servi ce ngi nx restart
```

## Issues Fixed

---

This section describes the issues fixed in each component of the NN-ISR, Version 5.0.

### NN-ISR Dashboard

The following table lists the Dashboard component fixed issues in Version 5.0.

Release	Description
5.0	<ul style="list-style-type: none"> <li>Non-java based user password encryption now enhances performance under load.</li> </ul>
5.0	<ul style="list-style-type: none"> <li>Playback now stops when player dialog closed.</li> </ul>

### NN-ISR Index

There were no issues in the Index component for NN-ISR, Version 5.0.

### NN-ISR RSS

The following RSS component issues were fixed in NN-ISR, Version 5.0.

Release	Description
5.0	<ul style="list-style-type: none"> <li>Cleaned up memory utilization in XML Parse library</li> </ul>
5.0	<ul style="list-style-type: none"> <li>Session Description Protocol (SDP) on-line session version now properly increments on reINVITEs with SDP changes.</li> </ul>
5.0	<ul style="list-style-type: none"> <li>Filename for Conference recordings is now parsing properly.</li> </ul>
5.0	<ul style="list-style-type: none"> <li>Calls to the API for route group members now use the master route's ID.</li> </ul>
5.0	<ul style="list-style-type: none"> <li>Port limit check issue due to the account burst limit removal from schema is now fixed.</li> </ul>

### NN-ISR API

The following API component issues were fixed in NN-ISR, Version 5.0.

Release	Description
5.0	<ul style="list-style-type: none"> <li>Updated APIs to handle the '+' character in filenames, UCIDs, Tos, and Froms.</li> </ul>

## Known Issues

---

This section describes the known issues in each component of the NN-ISR, Version 5.0.

### NN-ISR Dashboard

The following is a known issue in the Dashboard for NN-ISR, Version 5.0.

Release	Description
5.0	<ul style="list-style-type: none"><li>When using specific browsers and under specific recording data situations, the recordings list in the Dashboard may display improper formatting and may display some data on a second line (for example, the display of long file names).</li></ul>

### NN-ISR Index

There are no known issues in the Index component for NN-ISR, Version 5.0.

### NN-ISR RSS

There are no known issues in the RSS component for NN-ISR, Version 5.0.

### NN-ISR API

There are no known issues in the API component for NN-ISR, Version 5.0.



## Introduction

---

This chapter provides information and procedures for upgrading the NN-ISR when required. Upgrading your NN-ISR software is required between major releases (4.0, 5.0, etc.) and are also required for maintenance (M1, M2, etc.) and/or patch releases (P1, P2, etc.).

## Upgrading Your NN-ISR

---

This section provides the information and procedures required for upgrading the NN-ISR from the current release to subsequent releases (feature, maintenance, and/or patch releases). In Chapter 1, the sections, Features, Issues Fixed, and Known Issues describe specific information for this release.

This software release also contains specific notes in each Virtual Machine's (VM) host directory at `/cxc_common/ISR/build`. A version of the VM is in the "Annotation" element in each VM's `.ovf` file.

**Note:** Before performing the procedures in this section, verify your current operating release of the NN-ISR. You must upgrade the NN-ISR in subsequent order (for example, 5.0 to 5.0M1, 5.0M1 to 5.0M2, etc.)

To upgrade your NN-ISR, you need to perform the upgrade in the following order:

- RSS
- CIS

## Record and Store Server (RSS)

Use the procedures in this section to upgrade the Record and Store Server (RSS). Upgrade procedures include:

- Before You Begin
- Determining the RSS System Partitions
- (optional) Mounting a Different Partition
- Upgrading the RSS
- (optional) Accessing Files on the Inactive Partition

## Before you Begin

Before you begin the upgrade of the RSS, the following must be met:

- NN-ISR must have the latest RSS software (prior to this upgrade) currently installed and working properly.
- New RSS file (supertar upgrade file) must be resident on your RSS host machine in the directory `/cxc_common/releases/`. This file is:
  - `nnRSS-<version>-<build_date>.upgrade.tar.gz`
- Determine the system partition for which the RSS is currently running on. For a procedure, see Determining the RSS System Partition.

For information about transferring the above file to your RSS host, see the following procedures for upgrading the CIS.

## Determining the RSS System Partitions

Before beginning the upgrade, you must determine the RSS system partition on which the NN-ISR is currently running.

### To determine the RSS partition:

1. Startup the NN-ISR system.
2. At the “Login as” prompt, enter “**root**” and press <Enter>.
 

```
Logi n as: root
```

The password prompt displays.

3. At the “Password” prompt, enter “**sips**” and press <Enter>.
 

```
root@<hostname>' s password> si ps
```

The following prompt and message display.

```
Net-Net OS-E
Copyright (c) 2004-2012 Acme Packet Inc.
Username:
```

4. No username is required so press <Enter>.
 

```
Username: (l eave b l ank)
```

The password prompt displays.

5. No password is required so press <Enter>.
 

```
Password: (l eave b l ank)
```

The following message displays followed by the NN-ISR hostname prompt.
 “Access granted since there are no configured users.”

```
NN-ISR>
```

6. Enter “**show chassis-config**” and press <Enter>.
 

```
NN-ISR> show chassis-confi g
```

The following is an example of the output that displays.

```
boot-parti ti on: system-2
system-parti ti ons: 2
management-consol e: vga
i pmi -admi n: enabl ed
```

The boot-partition field should indicate “**system-1**” or “**system-2**”.

7. If you want to mount the partition other than the partition that displays in the output, see Mounting a Different Partition.

## (optional) Mounting a Different Partition

You can mount another partition to use for the upgrade of the RSS if required.

### To mount another partition:

1. At the NN-ISR prompt, enter “**show mounts**”, and press <Enter>.
 

```
NN-ISR> show mounts
```

The following is an example of the output that displays.

drive	mount-point	drive-name	filesystem	drive-size	percent-free
-----	-----	-----	-----	-----	-----
system-1	/mnt/backup			0	0
system-2	/	/dev/root	rel serfs	7164	66

The output above shows the active mounted system to be the “**system-2**” partition.

2. Enter “**mount system-#**”, and press <Enter>.

```
NN-ISR> mount system-1
```

where “system-#” is the system you want to mount. If “system-1” is the active mounted system, then enter “system-2” for Step 2.

This mounts the other partition to */mnt/backup/*. You can access the available RSS files on the newly mounted partition as required (for example, */mnt/backup/cxc/isrl.elf*).

## Upgrading the RSS

After determining the RSS partition (or mounting another partition), you can upgrade the RSS as required.

**Note:** This upgrade procedure installs the new version of software to the inactive partition and then makes the partition active.

### To upgrade the RSS:

1. At the NN-ISR prompt, enter a shell session by entering “**shell**” and press <Enter>.

```
NN-ISR> shell
```

The hostname prompt displays.

```
<hostname> #
```

2. Copy the RSS supertar upgrade file to the RSS host’s filesystem by entering the following:

```
<hostname> # cp nnSE-a.tar.gz /cxc_common/releases/
```

3. Enter “**exit**” to exit the shell and display the NN-ISR> prompt.

```
<hostname> # exit
```

```
NN-ISR>
```

4. At the NN-ISR prompt, enter “**install file /releases/nnSE-a.tar.gz**”, and press <Enter>.

```
NN-ISR> install file /releases/nnSE-a.tar.gz
```

The upgrade process proceeds on the RSS using the file you specified. When the upgrade is complete, the RSS server reboots.

5. At the “Login as” prompt, enter “**root**” and press <Enter>.

```
Login as: root
```

The password prompt displays.

6. At the “Password” prompt, enter “**sips**” and press <Enter>.

```
root@<hostname>'s password> sips
```

The following prompt and message display.

```
Net-Net OS-E
```

```
Copyright (c) 2004-2012 Acme Packet Inc.
```

```
Username:
```

7. No username is required so press <Enter>.
 

```
Username: (l eave b l ank)
```

The password prompt displays.

8. No password is required so press <Enter>.
 

```
Password: (l eave b l ank)
```

The following message displays followed by the NN-ISR hostname prompt.
 “Access granted since there are no configured users.”

```
NN-ISR>
```

9. Verify the active partition is correct by entering “**show chassis-config**”, and press <Enter>.
10. The following is an example of the output that displays.

```
boot-parti ti on: system-1
system-parti ti ons: 2
management-consol e: vga
i pmi -admi n: enabl ed
```

The RSS upgrade is complete.

### (optional) Reverting Your Installation to the Previous Version

During the upgrade process, the RSS installs the new version of software, as well as copies of the current configuration, to the non-active partition. You have the ability to revert back to the last version that was installed.

**Note:** For more information on determining which partition is active, see the section Determining the RSS System Partitions.

#### To revert your installation to the previous version:

At the NN-ISR prompt, enter “**set-chassis-config-boot system-#**”, and press <Enter>.

```
NN-ISR> set-chassi s-confi g-boot system-2
```

where “system-#” is the inactive partition you want to access.

### Control and Index Server (CIS)

Use the procedures in this section to upgrade the Control and Index Server (CIS). Upgrade procedures include:

- Before You Begin
- Updating the Index VM Database
- Deleting the Prior Dashboard VMs (Administrator and User Dashboards)
- Importing the New Dashboard VM
- Verifying the CIS Upgrade

#### Before you Begin

Before you begin the upgrade of the CIS, the following must be met:

- NN-ISR must have the latest CIS software (prior to this upgrade) currently installed and working properly.
- New Virtual Machine (VM) files (unzipped) for the Dashboard must be resident on your Window host machine that is managing the VM with the VSphere Client. This file is:
  - *ISR Dashboard Version <#> build <#> OVF Template.zip*

- New MySQL database script (unzipped) must be resident on your Windows host machine in the Index VM directory. This file includes new database fields for the new release. This file is:
  - `ipcr_db_5_0_p0_to_5_0_m1_upgrade.sql`
- Find and make note of the Dashboard public IP addresses. You enter these addresses when performing the procedures in Importing the New Dashboard VM.

For information about transferring the above files to your Windows host, see the following procedures for upgrading the CIS.

## Updating the Index VM Database

### To update the Index VM database:

1. Use a secure method of file transfer to copy the Index VM file, "`ipcr_db_5_0_p0_to_5_0_m1_upgrade.sql`" to the Index VM directory on your Windows host.
2. Open an SSH (shell session), and login using ID "**root**" and password "**64^5377**".

The following screen displays with the applicable VM prompt.

```
Fedora release 14 (Laughlin)
Kernel 2.6.35.13-91.fc14.s06_64 on an s06_64 (tty1)

index login: _
```

3. Log in to the VM with the following and press <Enter>:

```
<VM> Login: root
Password: 64^5377
```

The following screen displays.

```
Fedora release 14 (Laughlin)
Kernel 2.6.35.13-91.fc14.s06_64 on an s06_64 (tty1)

index login: root
Password:
Last login: Mon Sep 26 16:32:17 on tty1
root@index ~# _
```

4. Backup your existing NN-ISR data by entering "`mysqldump -u ipcr_admin -pn3wf0und ipcr_db > /tmp/ipcr_db_<release #>_backup.sql`", and press <Enter>.

```
[root@i ndex]: mysql dump -u i pcr_admi n -pn3wf0und i pcr_db >
/tmp/i pcr_db_4_0_backup. sql
```

**Note:** Depending on the size of the NN-ISR data, this process may take several minutes.

- Go to the Index VM directory on your Windows host that contains the file “*ipcr\_db\_5\_0\_p0\_to\_5\_0\_m1\_upgrade.sql*”.
- Enter “**mysql -u ipcr\_admin -pn3wf0und ipcr\_db < ipcr\_db\_5\_0\_p0\_to\_5\_0\_m1\_upgrade.sql**” to replace the existing Index VM on the CIS server with the new Index VM from your Windows host, and press <Enter>.

```
[root@i ndex]: mysql -u i pcr_admi n -pn3wf0und i pcr_db <
i pcr_db_5_0_p0_to_5_0_m1_upgrade. sql
```

The upgrade process proceeds to upgrade the Index VM database.

The auto-configuration of the Dashboard and Index have been moved to link-local addresses on the 169.254.0.0/16 block. As of release 5.0M1, the Dashboard expects its database connection available at an IP address of 169.254.1.50.

#### To configure this IP address:

- From the vSphere client console or an SSH client, log into the Index VM with the following and press <Enter>:

```
<VM> Logi n: root
Password: 64^5377
```

The following screen displays:



- Enter the following at the prompt and press **Enter** to set the admin VM IP address.  
**vi /etc/sysconfig/network-scripts/ifcfg-eth1**
- Press <i> to enter insert mode.
- Using the arrow keys to navigate the file, edit the following line:  
**IPADDR="169.254.1.50"**
- Press <Esc>, then type :wq and press <Enter>. This saves your changes and displays the Admin VM prompt.
- Enter the following and press <Enter> to restart the network services.  
**service network restart**
- Confirm no errors occurred during the network restart.

#### Deleting the Prior Dashboard VMs

#### To delete the prior Dashboard VMs:

1. Double-click the VMware vSphere Client icon. The following screen displays.



2. In the “**IP address / Name**” text box, enter the IP address or the domain name of the ESXi host. For example:

IP address / Name: **172. 30. 58. 164**

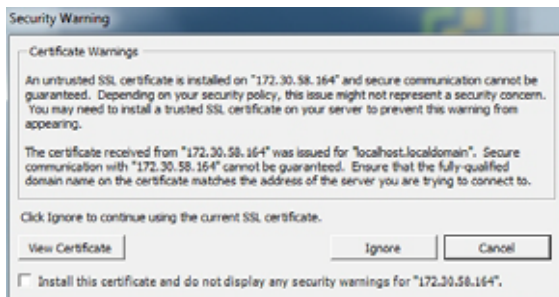
3. In the “**User name**” text box, enter the user name assigned to you by the system administrator of the ESXi host. For example:

User name: **root**

4. In the Password text box, enter the password assigned to you by the system administrator of the ESXi host. For example:

Password: **j re453i**

5. Click <**Login**>. The following Security Warning displays:

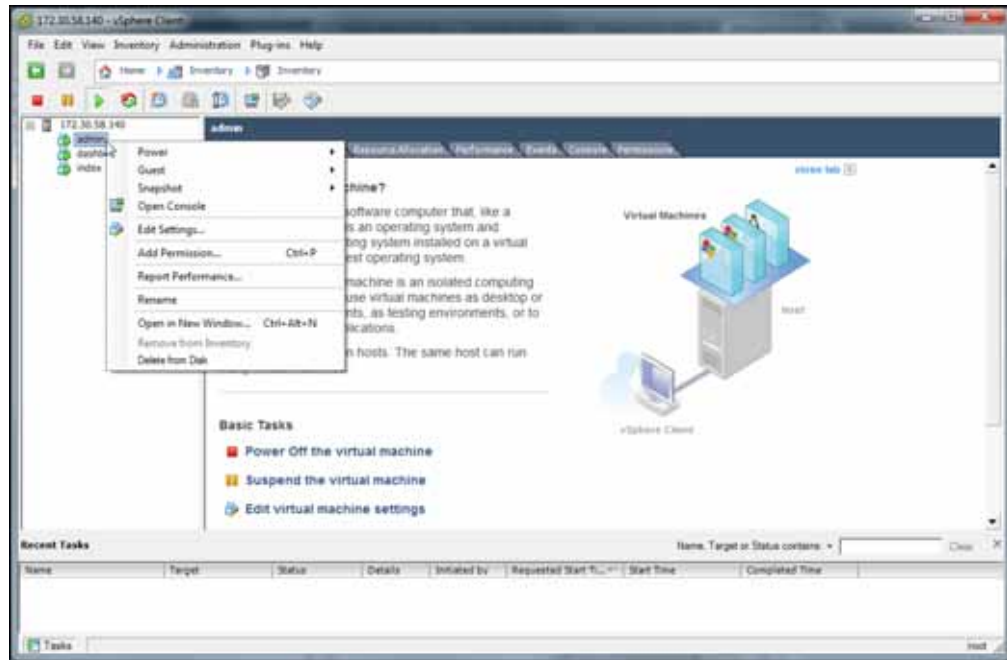


6. Place a check mark in the box that indicates:

*"Install this certificate and do not display any security warnings for <ip\_address>".*

The IP address is the address of the ESXi host.

7. Press <**Ignore**>. The following window displays.



8. In the left column, click the IP address to display the VMs.
9. Using your mouse, right click the “**admin**” VM, and then select “**Delete from Disk**”. A prompt displays for you to verify the deletion of the admin VM.

*“Delete the virtual machine ‘admin’?”*

10. Click <Yes>. The Administrator Dashboard deletes from the CIS.
11. Using your mouse, right click the “**dashboard**” VM, and then select “**Delete from Disk**”. A prompt displays for you to verify the deletion of the dashboard VM.

*“Delete the virtual machine ‘dashboard’?”*

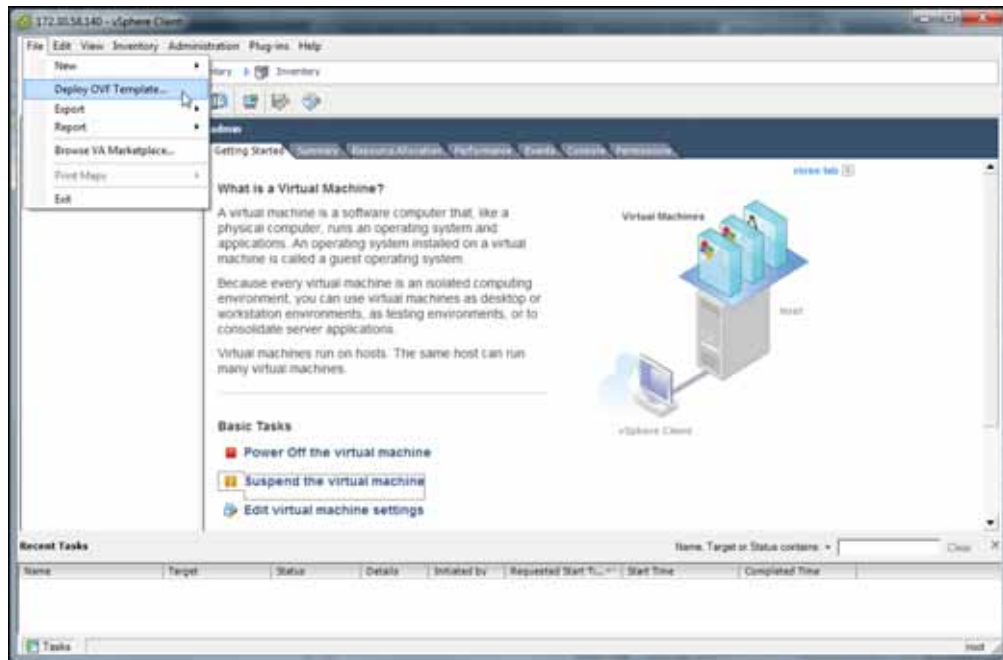
12. Click <Yes>. The prior User Dashboard deletes from the CIS.

## Importing the New Dashboard VM

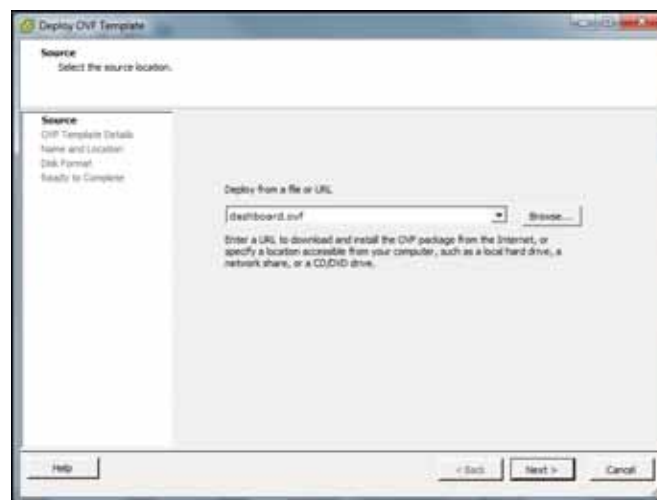
### To import the new Dashboard VM:

1. In the VMware vSphere Client, select “**File->Deploy OVF Template....**”





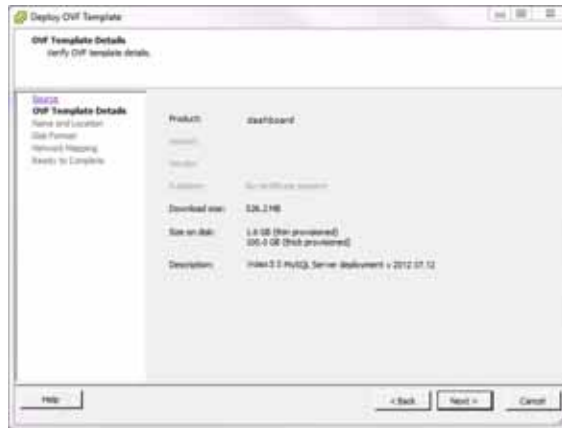
The following window displays.



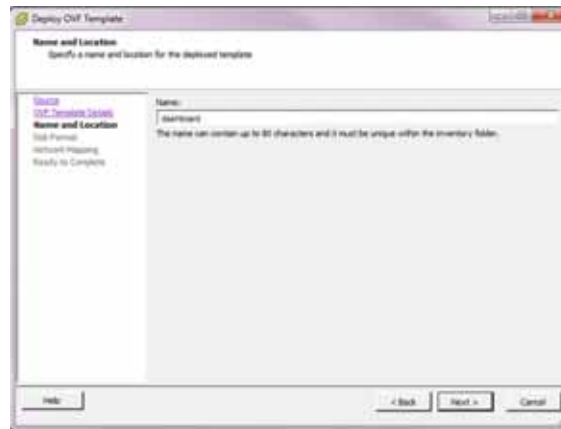
2. In the “**Deploy from a file or URL**” field, browse to the directory that contains the files you unzipped from the file , “*ISR Dashboard Version <#> build <#>.zip*” on your Windows host machine.

**Note:** For more information about transferring the required new files to your Windows host machine, see Control and Index Server (CIS).

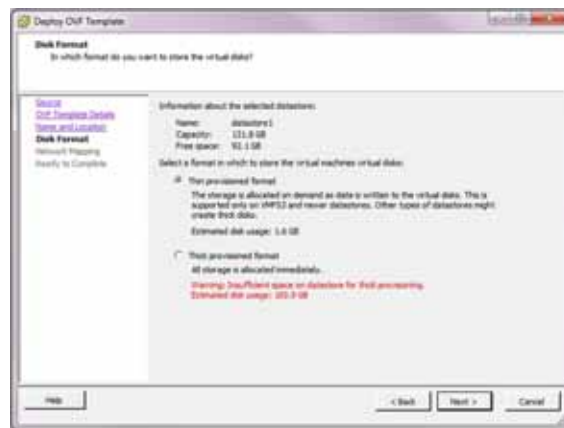
3. Select the “**admin.ovf**” file and click <Next>.
4. Click <Next>. The following window displays.



- Click <Next> in the “OVF Template Details” window. The “Name and Location” window displays. This field is automatically populated with the name and location of the virtual machine you selected in Step 3.

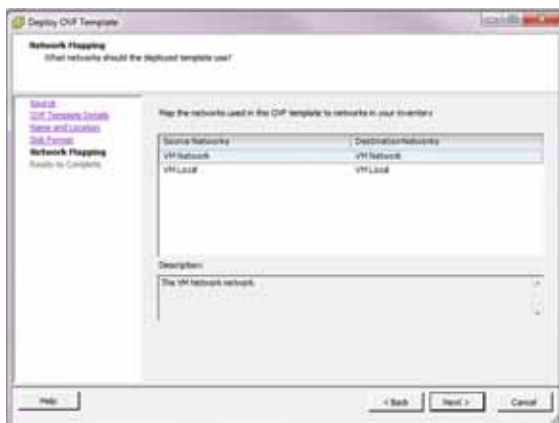


- Click <Next>. The “Disk Format” window displays.

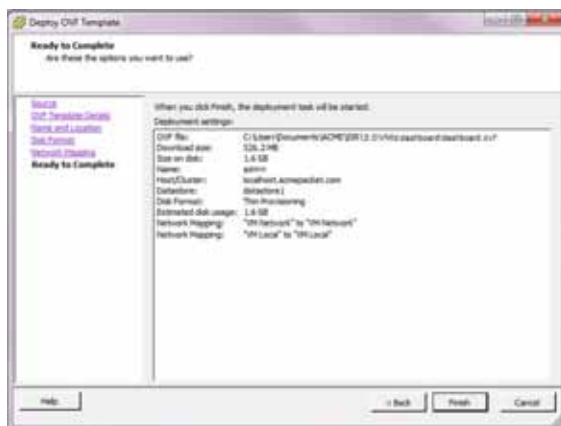


**Note:** If using CIS certified hardware, verify the datastore name is correct.

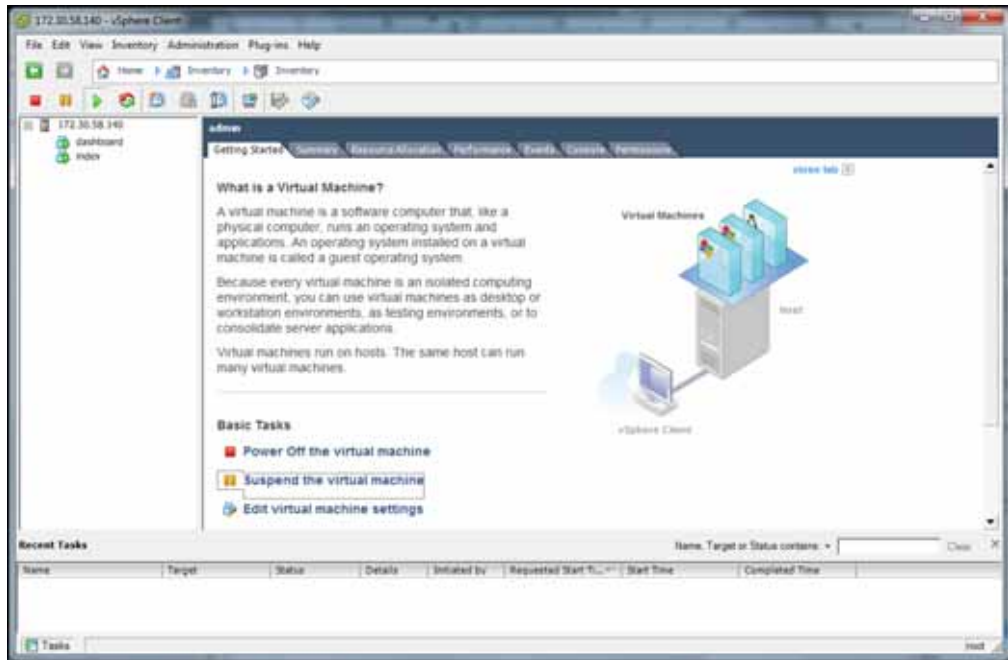
7. Select "**Thin provisioned format**" with disk usage of **1.6 GB** (default) and click **<Next>**. The "Network Mapping" window displays.



8. Verify that "VM Network" and the "VM Local" are in both the Source Network column and the Destination Network column.
9. Click **<Next>**. The following window displays.

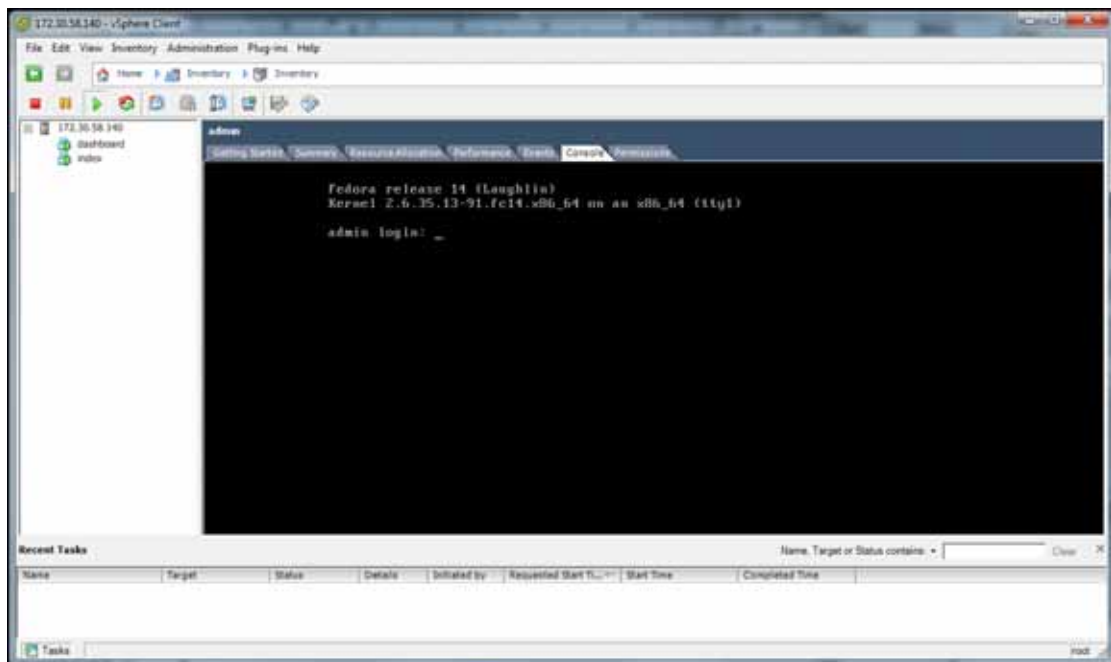


10. Verify all selections in the "Ready to Complete" window are correct and click **<Finish>**.
11. When the deployment of the *dashboard.ovf* is complete, close the "Deploy OVF Template" window by clicking the "X" in the upper right corner.
12. In the VMware vSphere Client window, select the "**dashboard**" VM from the left column.



13. Click the Power on button.
14. Click on the **Console** tab.

**Note:** During the remaining procedures using the Console window, the mouse may be confined to the console pane. Press <Alt><Ctrl> to release it at any time. The following window displays.

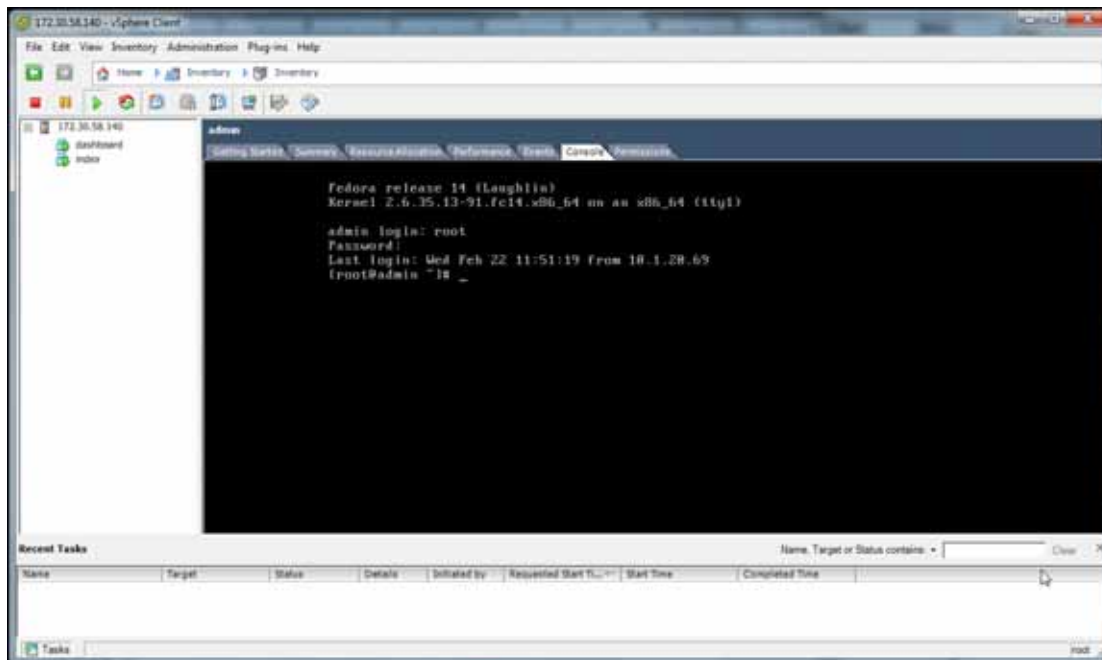


15. Login using ID “root” and password “64^5377”.

admin login: root

Password: 64^5377

The following screen displays.



16. To set the IP address of the admin VM, enter the following at the prompt and press <Enter>:

```
vi /etc/sysconfig/network-scripts/ifcfg-eth0
```

17. Press <i> to enter insert mode.

18. Using the arrow keys to navigate the file, and edit the following lines:

- IPADDR=<your admin IP address>
- GATEWAY=<network gateway>
- DNS1<network DNS>
- DNS2=<network secondary DNS>

**Note:** If you do not have a DNS configured in your network, insert a “#” before the line. For example,

```
#DNS1=DNS1
```

```
#DNS2=DNS2
```

19. Press <Esc>, then type “:wq”, and press <Enter>.

This saves your changes and displays the Admin VM prompt.

20. To start the network services, enter the following and press <Enter>.

```
service network start
```

21. To enable network services to automatically start on reboot, enter the following and press <Enter>:

```
chkconfig network on
```

Importing the new Dashboard VM is complete.

## Verifying the CIS Upgrade

You can log into the NN-ISR Dashboard to verify that the upgrade was successful.

### To log into the NN-ISR dashboard:

1. Open your Internet Web browser (see compatible browser requirements in Net-Net ISR Dashboard Requirements).
2. Enter the following IP address of your NN-ISR in your network:  
 http://172.455.34.22  
 The Login page displays.



3. In the “**Email**” and “**Password**” fields, enter the your applicable email and password, respectively. The default email and password are:

**Email:** isradmin@acmepacket.com

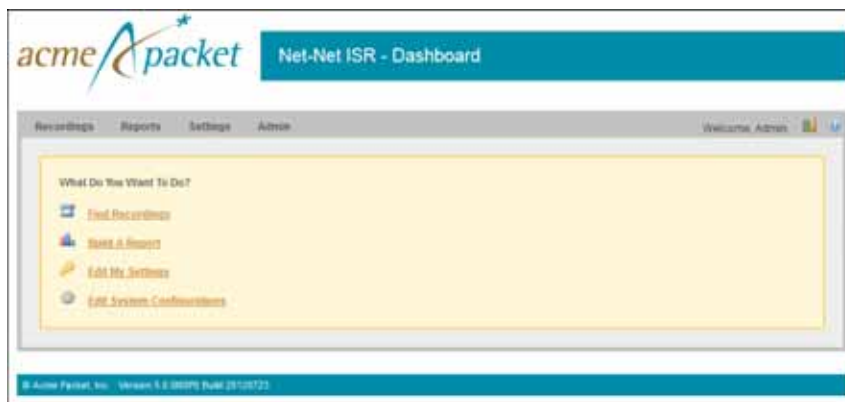
**Password:** admin123

**Note:** If you changed your password from the default in your prior software, then enter that password in the “Password” field. The password from the prior software has been saved to your new version software. You can skip Step 4 and proceed to Step 5.

If you did not change the default password in your prior software, then you have the option of changing it in the new version of software. On your initial login, you are prompted to change your password.

4. Respond to the prompts as applicable to change your password.
5. Verify that the NN-ISR version number is visible in the blue bar at the bottom of the window.

The following page displays after logging in.



You can now use the Dashboard as required.

