# Introduction

This release notes document contains information about downloading and installing the latest Intelligent Node (iNode) 2.x release. It also provides information about the hardware/firmware support, limitations, restrictions, and caveats for the iNode software.

**Note** For correct operation, the node RPD must be running RPD software version v4.1 or later.

iNode 2.x release is compatible with iNode Manager 2.0 or later release.

We recommend that you view the field notices for this release to see if your software or hardware platforms are affected. If you have an account on Cisco.com, you can find field notices at http://www.cisco.com/en/US/customer/support/tsd_products_field_notice_summary.html .

If you do not have a Cisco.com login account, you can find field notices at http://www.cisco.com/en/US/support/tsd_products_field_notice_summary.html .

This chapter includes the following sections:

## Software

The following release images are available on Cisco.com.

### Intelligent Node Software 2.0.8

- Intelligent Node
    - inode-oib.02.00.08.tar.gz
    - inode-oib.02.00.08.tar.gz.signature

- If you are performing a Field upgrade U-Boot, the following images are available:
    - u-boot.02.00.08.tar.gz

- u-boot.02.00.08.tar.gz.signature

- Intelligent Node App (version 1.1 or later) from a trusted source, such as App Store or Google Play

# Intelligent Node Software 2.0.7

- Intelligent Node

  - inode-oib.02.00.07.tar.gz

  - inode-oib.02.00.07.tar.gz.signature

- If you are performing a Field upgrade U-Boot, the following images are available:

  - u-boot.02.00.07.tar.gz

  - u-boot.02.00.07.tar.gz.signature

- Intelligent Node App (version 1.1 or later) from a trusted source, such as App Store or Google Play

# Intelligent Node Software 2.0.6

- Intelligent Node

  - inode-oib.02.00.06.tar.gz

  - inode-oib.02.00.06.tar.gz.signature

- If you are performing a Field upgrade U-Boot, the following images are available:

  - u-boot.02.00.06.tar.gz

  - u-boot.02.00.06.tar.gz.signature

- Intelligent Node App (version 1.1 or later) from a trusted source, such as App Store or Google Play

# Intelligent Node Software 2.0.5

- Intelligent Node

  - inode-oib.02.00.05.tar.gz

  - inode-oib.02.00.05.tar.gz.signature

- If you are performing a Field upgrade U-Boot, the following images are available:

  - u-boot.02.00.05.tar.gz

  - u-boot.02.00.05.tar.gz.signature

- Intelligent Node App (version 1.1 or later) from a trusted source, such as App Store or Google Play

## Intelligent Node Software 2.0.3

- Intelligent Node
  - inode-oib.02.00.03.tar.gz
  - inode-oib.02.00.03.tar.gz.signature

- If you are performing a Field upgrade U-Boot, the following images are available:
  - u-boot.02.00.03.tar.gz
  - u-boot.02.00.03.tar.gz.signature

- Intelligent Node App (version 1.1 or later) from a trusted source, such as App Store or Google Play

## Intelligent Node Software 2.0.1

- Intelligent Node
  - inode-oib.02.00.01.tar.gz
  - inode-oib.02.00.01.tar.gz.signature

- If you are performing a Field upgrade U-Boot, the following images are available:
  - u-boot.02.00.01.tar.gz
  - u-boot.02.00.01.tar.gz.signature

- Intelligent Node App (version 1.1 or later) from a trusted source, such as App Store or Google Play

# Functionality Supported

## Intelligent Node Software 2.0.8

- Improvement on field debugging:
  - Enables SSH support in iNode via RPD shell. This new feature helps Cisco to troubleshoot remotely and possibly reduce the need to direct physical access to the device.
  - Syslog time field update. Before ToD (Time of Day) is received from DHCP server, the time component of Syslog uses the default time which is the image build time. Sometimes it causes confusion when analyzing the log files in identifying the sequence of events. With this enhancement, Syslog will take the last log entry time until correct Time of Day (ToD) is received from DHCP server.
  - Enables iNode manager to fetch boot params-related information from the iNode via iNode REST APIs. Also adds support to provide secondary image of iNode (OIB) along with current active image for iNode manager.

• Supports force upgrade option in DHCP:

When enabled, force upgrade option will upgrade the current image in the following scenario:

- • Current image on the device is not the same as the image configured in DHCP config.

- • The safe image on the device is the same as the image configured in DHCP but declared as INVALID.

The following table describes the iNode image upgrade behaviour for both force upgrade and normal download scenarios based on iNode DHCP configuration file :

| Active image (running) | Secondary/Safe image | Safe ImageValid | Normal Download | Force Download |
|---|---|---|---|---|
| Different from DHCP config | Same as DHCP config | Yes | Switch to Safe image | Download & Switch |
| Different from DHCP config | Same as DHCP config | No | Stay in Current image | Download & Switch |
| Different from DHCP config | Different from DHCP config | Yes | Download & Switch | Download & Switch |
| Different from DHCP config | Different from DHCP config | No | Download & Switch | Download & Switch |
| Same as DHCP config | Same as DHCP config | Yes | No Action | No Action |
| Same as DHCP config | Same as DHCP config | No | No Action | No Action |
| Same as DHCP config | Different from DHCP config | Yes | No Action | No Action |
| Same as DHCP config | Different from DHCP config | No | No Action | No Action |

For software upgrade, specific DHCP options are used to provide the iNode with the IP address of the TFTP server, Vendor identification, and image version information. The force download is one of these DHCP options. Force upgrade option can be enabled by configuring the following value: TLV 44: Sub type = 01 (Force Upgrade) length = 0x00.

The following figure shows how the contents of the configuration file is displayed using the Excentis DOCSIS Config File Editor. In this example, an IPv4 TFTP server address is also shown but it is not necessary for IPv6.
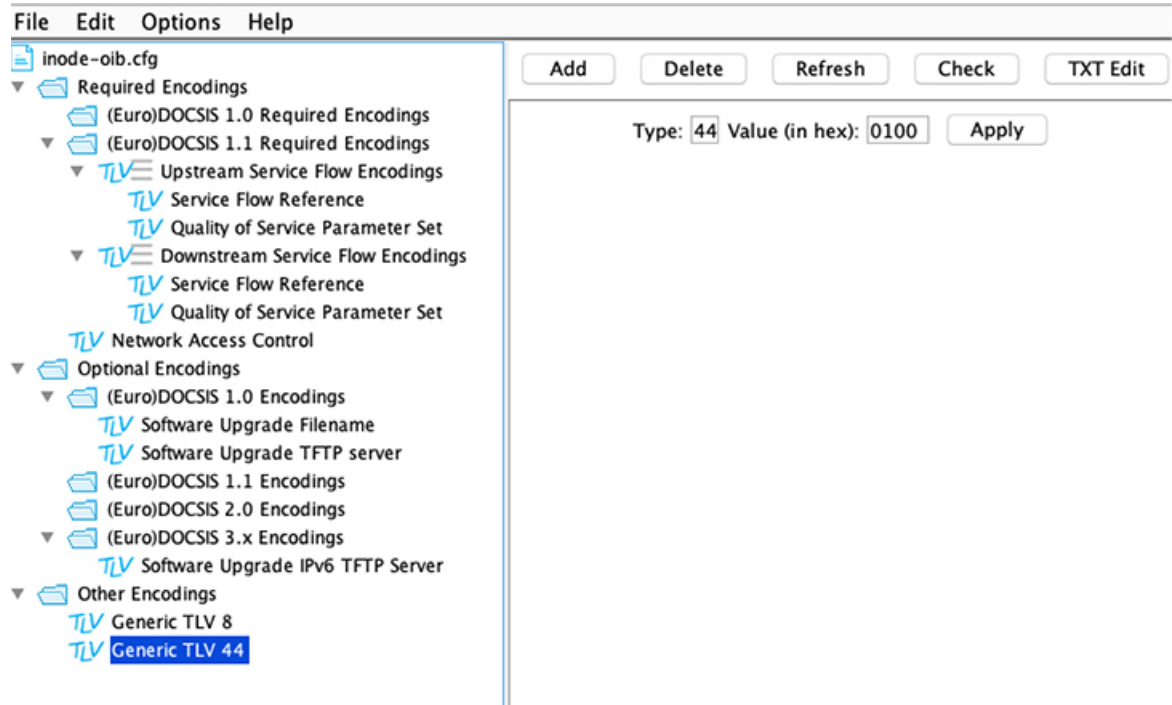
- Supports iNode Manager SMI:

  Supports both iNode Manager SMI (Subscriber Microservice Infrastructure) 3.x.x and iNode Manager Tricoder 2.x.x based releases.

## Intelligent Node Software 2.0.7

- Enables customers to fetch RPD related information from the iNode. Following RDP information is provided via iNode REST APIs:

  - MAC address

  - Serial number

  - IPV4/IPV6 address

  - Current software version

## Intelligent Node Software 2.0.6

- Enables customer to download a new image, such that iNode always has 2 images in its memory location.

## Intelligent Node Software 2.0.5

- Support for configurable periodic Intelligent Node Manager re-registration. This feature automatically re-registers the Intelligent Node with Intelligent Node Manager irrespective of DHCP lease renewal time. This is configurable via an option in the DHCP message.

- Security enhancements

- Bug fixes

# Intelligent Node Software 2.0.3

- Bug fixes

# Intelligent Node Software 2.0.1

- Support for remote access through iNode Manager, which includes the following features:

  - Monitoring and Configuration

  - Spectrum Capture

  - Remote Reset

  - Remote Log File Retrieval

  - Auto-registration with iNode Manager

- IPv6 enhancements include the following features:

  - Solicited-Node multicast packet support

  - Support of Neighbor Discovery for IPv6 ICMPv6 packets

- Ability to set the SNMP community string using LCS or iNode Manager

- Performance improvements including better MER at temperature

- Security updates

# Instructions for DHCP Custom Options

SLAAC is not supported in this release. If the RPD is running a software version 5.2.x or earlier, to avail IPv6 support and download the iNode software successfully, apply the following DHCP custom options.

In addition to the standard DHCP options required by the OIB for software download, the customer must create 2 custom DHCPv6 options and an optional third option if an IPv6 prefix length other than /64 is required for the OIB.

```
# Define custom options to provide IPv6 Default Route, Prefix and any Static Routes:
# this is a short-term work around until you are able to receive RA messages.
option dhcp6.default-route code 214 = array of ip6-address;
option dhcp6.static-routes code 216 = array of ip6-address;
# add if OIB Prefix Length is something other than the /64 default.
option dhcp6.prefix code 215 = unsigned integer 8;
```

`dhcp6.default-route` is assigned two IPv6 address, order is important, the Gateway Router's Link-Local IPv6 address followed by it's Global IPv6 address.

`dhcp6. static-routes` is assigned a list of IPv6 addresses of any servers the OIB needs to reach that are within the same prefix as the OIB.

`option dhcp6.prefix` is the prefix length the OIB would have been assigned by the Router Advertisement message.

SLACC is not supported. The OIB's Global IP address must be assigned by the DHCPv6 server.

# Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see What's New in Cisco Product Documentation .

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the What's New in Cisco Product Documentation RSS feed . The RSS feeds are a free service.