Installation Guide for Cisco Industrial Network Director, Release 1.6.x

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This installation guide contains the latest information about installing the Cisco Industrial Network Director (IND) application on a Microsoft Windows Operating System (OS) and details accessing the application after installation.

Organization

This guide includes the following sections:

- Conventions

- System Requirements

- Before You Begin

- Installation Steps

- Logging in to Cisco IND Application

- Installing IND Device Packs

- Supported Utilities

Conventions

This document uses the following conventions.

Conventions	Indication
bold font	Commands and keywords and user-entered text appear in **bold** font.
italic font	Document titles, new or emphasized terms, and arguments for which you supply values are in *italic* font.
[ ]	Elements in square brackets are optional.
{x	y	z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x	y	z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
courier font	Terminal sessions and information the system displays appear in courier font.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note: Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

System Requirements

Table 1   System Requirements for the IND Application

Desktop Requirements	Minimum Requirement
Windows Operating System (OS)	Windows 7 Enterprise or Professional with Service Pack 2 Windows 10 **Windows Server Support:** Windows 2012 R2 Server Windows 2016 Server (64-bit version) **Note:** When using Windows 2016 Server (64-bit version), you may not be able to select the **Uninstall** option from the Windows Start program window. If this occurs, do the following: – Log out of Windows 2016 and then log in again. If you do not see the **Uninstall** option in the Windows menu, then **Restart** the PC.
Browser	Chrome: Version 50.0.2661.75, 53.0.2785.116 Firefox: 55.0.3, 57.0.4,63.0.3 or above
CPU	Quad-Core 1.8 GHz
RAM	8 GB
Storage	50 GB

Before You Begin

Before you install the IND software package, confirm that:

- No other FTP server is running and listening on port 21

- No other instance of PostgreSQL is installed on port 5432 or any other port on the system

- The host name of the Windows machine **must** start with a letter of the alphabet (A-Z or a-z).

  – You may use special characters within your password such as digits (0-9), minus sign (-), and period (.) as well as alpha characters.

- The following ports are open for both inbound traffic on the firewall:

  TCP ports:

  – 21 – FTP active port for ODM file transfer in regular mode

  – 8088 – HTTP for PnP

  – 8443 – HTTPs for Web UI and PnP

  – 50000-50050 – FTP passive ports for ODM file transfer in regular mode

  UDP port:

  – 30162 – SNMP traps

- The following ports are open for outbound traffic on the firewall:

  TCP ports

  - 443 – HTTPs for WSMA/JSON-RPC in secure mode

  - 80 – HTTP for WSMA/JSON-RPC in regular mode

  - 22 – SSH/SCP in secure mode

  - 23 – Telnet in regular mode

  - 44818 – CIP

  - 102 – PROFINET

  - 502 – ModBus

  - 4840 – OPC-UA

  - 139 – NetBios TCP/IP

  - 1812 – RADIUS

  UDP ports:

  - 161 – SNMP

  - 67 – DHCP server if the IND PnP DHCP helper is being used

  - 2222 – CIP

  - 34964 – PROFINET

  - 4840 – OPC-UA

- The following ports are open for both inbound and outbound traffic on the firewall:

  TCP ports:

  - 8910 – HTTPs for pxGrid

  - 47808 – BacNet

  Note: The above listed ports are default ports. If any of the above ports are customized as part of installation or in access profile then the corresponding ports should be open in the firewall.

When You Employ PnP in Your Network

PnP requires that you start and run an NTP server in the network either on a separate Windows server or on the laptop or desktop where IND is installed.

- When you run the NTP server on a separate Windows server in the network (distinct from the IND server), ensure that the NTP service is up and running at all times.

  - When running an IE1000 switch in your network, you must also add the NTP server IP address in the DHCP option43 field to be able to support PnP.

- When you run the NTP server on the IND server (laptop or desktop), perform the following steps to start the Windows Time Service and ensure that it is running all the time:

a. Go to the Start button and click on **Search program and files**.

b. Type *services.msc*.

c. Locate Windows Time, observe the current status, and open to make changes.

d. Set the Startup type to *Automatic*.

Installation Steps

Please review all content in this section before installing the IND application.

- New Installation
- Upgrade an Existing IND Application
- Uninstall an Existing IND Application

New Installation

1. Download the Cisco Industrial Network Director (IND) software package from Cisco.com to your system from the Cisco Download Software page https://software.cisco.com/download/navigator.html by following the path below to the IND software:

   Products > Cloud and Systems Management > IoT Management and Automation > Cisco Industrial Network Director

2. Click the **Download** button to download the IND installer file to your system.

3. Double-click the installer file (for example, *ind-1.6.0-438.installer.exe*) or at the User Account Control window that appears, click **Yes** to allow the installer.exe file to be installed on your system.

4. At the Language Selection window that appears, the Language option is selected by default and no user intervention is required to change the language. Click **OK**.

5. At the Setup Wizard screen that appears, click **Next**.

6. At the License Agreement screen, click the **I accept the agreement** radio button, and then click **Next**.

7. At the Installation Directory screen, click **Next** to confirm the destination directory. You may specify your own directory or accept the default directory defined in the install script.

8. After you select the directory, the next screen allows you to customize the install to adapt to available memory resources, if necessary. There are 2 options: Regular Profile (Default) and Micro Profile (For a low memory system).

9. At the Ready to Install screen, click **Next** to begin installation of the IND application on your system.

   Note: For New installs, if the installer detects that TCP port 8443 is already in use, an Error pop-up window appears asking for you to specify a different port. You can enter any available port.

   Note: The installer detects for port 8088 as well. If the installer detects that the port is already in use, a pop-up window appears for the user to re-enter a new available port value.

   Note: During IND installation, a postgres file is installed. If the IND installation process attempts to overwrite an existing third-party postgres file, a popup window appears alerting you to the conflict. Additionally, you are instructed to remove that existing postgres file to allow the IND installation to continue.

   Note: During IND Installation, an indeterminate progress popup displays until all IND Services initialize and are ready and accessible. **Please wait for the initialization progress popup to complete**. Depending on your PC configuration, IND Services may take up to 8 minutes to initialize.

IMPORTANT: When IND Installation completes, a window appears with:

■ Your initial login information: Username and Password

■ URL for the Application

    – **Be sure to capture this information before you exit the screen by selecting Finish.**

Upgrade an Existing IND Application

Note: The IND upgrade to 1.6 upgrades the PostGres from 10.5 to 10.6. Therefore, before you start the IND upgrade to 1.6, be sure to close any windows, command prompts, PgAdmin and any other applications and services using the IND DB installation directory and/or files to run the PostGresSQL upgrade smoothly.

After you complete the actions summarized in the note above, you are ready to upgrade from IND 1.5 to 1.6 by following the steps listed below:

1. Double-click the installer file (for example, *ind-1.6.0.-xxx.installer.exe*) or click the **Download** button to download the IND installer file to your system.

2. At the Language Selection window that appears, a default language appears in the drop-down menu by default. The selected language will be **same** language that you selected at the original install. Click **OK**.

3. A pop up window appears, asking you to confirm you want to upgrade your current IND application to a new version. Click **Yes** to upgrade. Click **No** to cancel the upgrade.

4. At the Setup Wizard screen that appears, click **Next**.

5. At the License Agreement page, click the **I accept the agreement** radio button; and, then click **Next**.

6. At the Ready to Install screen, click **Next** to begin installation of the IND application on your system or for upgrades you can choose the Customize option with an option for system profile selection. After the upgrade, the same system profile you selected during the initial install will be applicable.

   Note: During an IND upgrade, an indeterminate progress popup displays until all IND Services initialize and are ready and accessible. **Please wait for the initialization progress popup to finish.** Depending on your PC configuration, IND Services may take up to 8 minutes to initialize.

   IMPORTANT: When Setup completes, a window appears with:

   – URL for the Application login-**Be sure to capture this information, before you exit the screen by clicking Finish)**.

Uninstall an Existing IND Application

On your system:

1. From the Windows system, go to the Control Panel and choose **Programs > Uninstall a Program > Programs and Features**.

2. In the panel that appears, double-click **Cisco Industrial Network Director.**

3. At the uninstall confirmation window, click **Yes**. A window appears showing removal of the files.

4. When the uninstall completes, a window appears confirming completion.

Logging in to Cisco IND Application

Note: After an initial install or upgrade, a Setup complete screen displays a check box to launch Cisco Industrial Network Director. Click **Finish** to launch the IND Login URL using the default browser of the system on which IND is installed.

IND is a server application and it can be accessed by any client machine that has connectivity to the system on which IND is installed.

Chrome and Firefox are supported browsers. See System Requirements.

1. On the client machine, open your browser window.

2. Enter the URL <https://a.b.c.d:portNum> provided at the end of the IND install, where <a.b.c.d> is the IP address of the system where IND was installed.

   Note: By default, portNum is 8443. If the 8443 value is not available during install, you can enter any available port number.

3. At the login window that displays, enter the initial Login and Password values provided at completion of the application install.
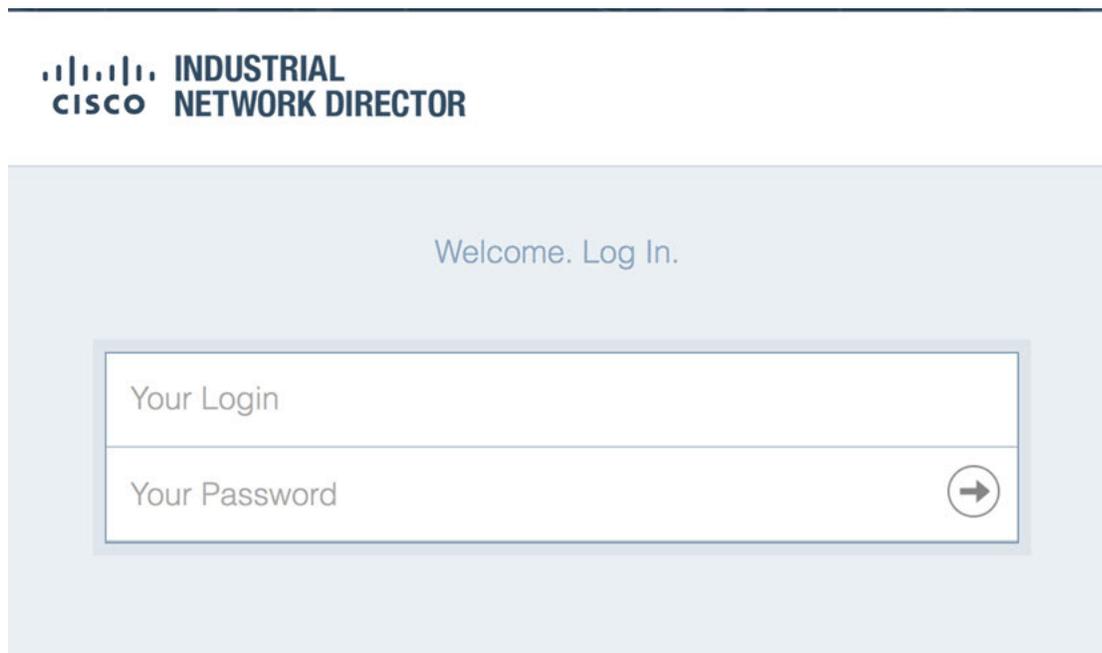

4. Click the arrow in the Your Password field. A window appears requesting you to define a new password.

5. After you define a new password, the application automatically logs you out. You must reenter your login and password to reenter the application.

6. When the IND opens, the **Operate > Dashboard** for the Groups Root page appears. There are four summary panels within that page: Alarms, Assets, Traffic Utilization, and Port Counts.
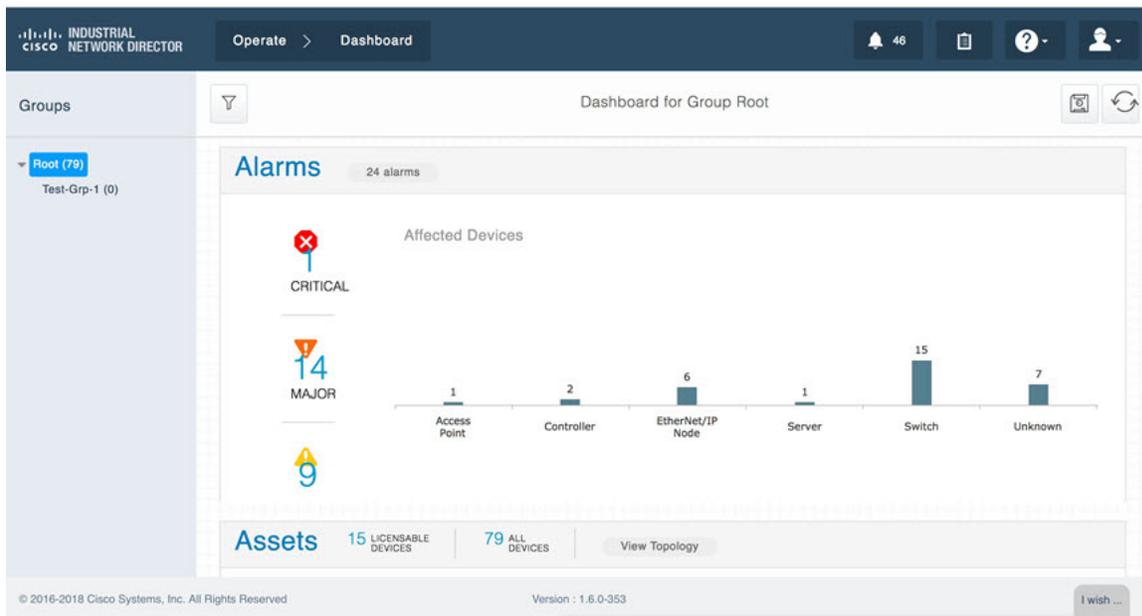
7. To set up the system:

   a. Click on question (**?**) mark icon in the top right-hand corner of the screen to display menu options: *Dashboard Help, Guided Tours, Download Logs, API Tool*

   b. Click on the **Guided Tours** option to access step-by-step setup instructions for the system.

7
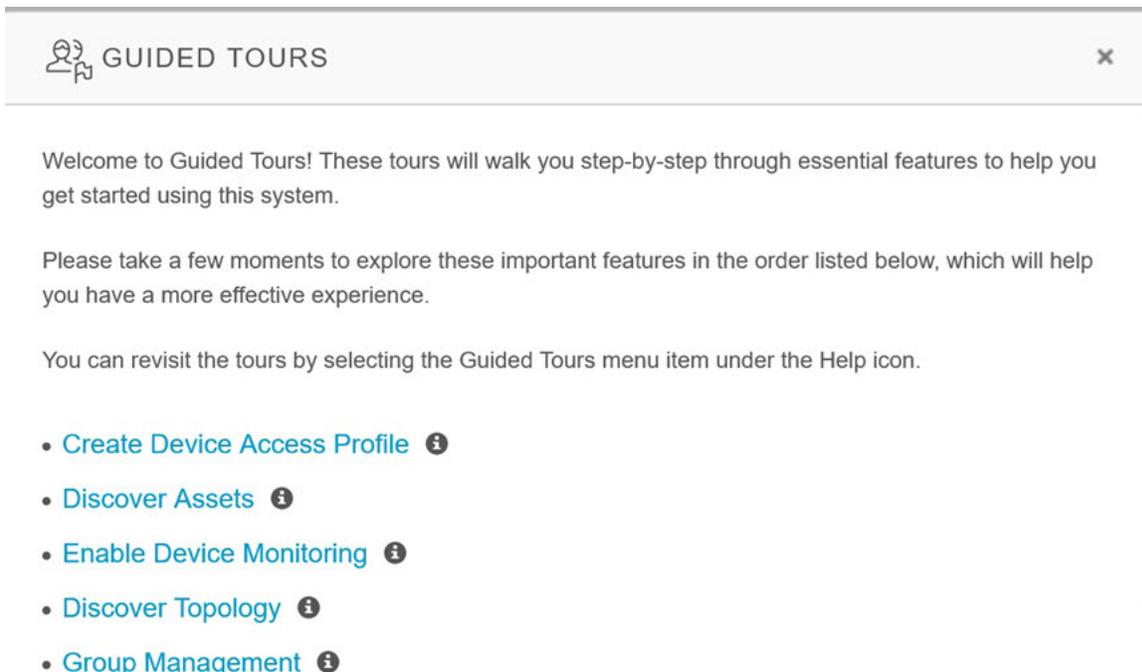
Installing IND Device Packs

Note: IND Device Packs can only be installed with the IND application that has a matching *version* number, and the *release number* **must be** the same or greater than the IND release number.

For example, in release 1.6.0-xxx, 1.6.0 is the version number and xxx is the release number.

A new device pack must be version 1.6.0 and the release must be xxx or higher.

Note: You can verify the Device Pack version and PID at the **Settings > Device Pack** page.

Device Pack Installation Options

You can install the IND Device Pack through the IND Application Web User Interface *or* directly from an executable file present on the Windows system on which the IND Application is installed. The benefit of installing the Device Pack through the Web User Interface is that the device support is available immediately without having to restart the IND application.

Option 1: To install the Device Pack using the IND Application User Interface:

1. Choose **Settings > Device Pack** page.

   The page displays the current version and release number of the installed Device Pack and when it was installed as well as an "Install New Device Pack" button.

2. To install a new Device Pack, click **Install New Device Pack**. Browse the IND device pack executable list, select the desired device pack, and click **Upload and Install**.

   When installation is complete, support for the new devices is available immediately on the IND application. No restart of the application is required.

Option 2: To install the Device Pack executable file directly from the Windows system:

1. Click on the executable file to start installation of the Device Pack.

2. When installation successfully completes, restart the Cisco IND application to activate the new Device Pack.

Supported Utilities

IND supports the following three utilities:

- Reset System Admin Password
- Reset Database Password
- Restore Database Backup

Reset System Admin Password

As a System Admin, you can reset the password when you are locked out of IND because you have either forgotten your credentials or your credentials have expired.

To reset the System Admin password, you as a System Admin, must have administrative rights to the Windows location where the Cisco Industrial Network Director application is installed:

C:\Program Files\Cisco\Cisco Industrial Network Director\bin <----default location

1. Run the *ind-resetpassword.exe* utility to reset the IND System Admin password.

2. In the password change confirmation panel that appears, click **Next**.

3. In the Reset System Admin Password panel that appears, enter your new password in both the Enter Password and Confirm Password fields. Click **Next**.

   Note: For guidelines on creating IND passwords, click the "**i**" icon next to the New Password field. A panel with password requirements displays.

4. Confirmation panel appears to confirm password update.

5. Click **Save** to accept the password update.

Reset Database Password

During install, the IND application automatically generates a random password, which is not accessible to the user.

If you need to access the database, you **must reset** the IND database password. Additionally, you **must** have administrative rights to the window in which the application runs.

1. Run the *ind-resetdatabasepassword.exe* utility.

2. A window appears asking you to confirm that you want to reset the database password.

   – To stop the rest of the database password, click **No** and close the window.

   – To continue with the database password reset, click **Yes**. A Reset Database Password utility window appears. Click **Next >**. A window displays and prompts you to enter the new password and then confirm the entry.

   – To cancel the reset, click **Cancel**.

   – Click **No** to stop the Reset activity.

   – Click **Yes** to continue the Reset Tool

Restore Database Backup

To restore an IND database from a previous IND backup, you must have administrative rights to the Windows location where the IND application is installed.

1. Run the *ind-restore.exe* utility to restore an IND database from a previous IND database backup.

   A Question panel appears noting that when IND restarts, any date currently present on IND will be overwritten.

   – Click **No** to stop the restore activity.

   – Click **Yes** to continue the Restore Tool.

2. Enter the location of the Database Backup file in the Backup File panel that appears. Click **Next**.

   The following validations will be done on the file path you provide for the Backup File:

   A) Does the file path exist and is it a valid IND backup file?

   B) Is the backup compatible with the IND version running currently?

   Note: A backup is considered incompatible if the IND version currently running supports a **greater** number of PIDs than the last backup version.

   Note: Once all validations complete, data from the backup will be restored to the database and IND will restart.

Supported Utilities