# Installing the IX-API SDK

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**Intel Corporation**
1350 Villa Street
Mountain View, CA 94041-1126
Tel: 650.567.9800
Fax: 650.567.9810
www.intel.com

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# About This Guide

This guide describes how to install the Intel® IX-API SDK software developer's kit (SDK).

## Audience

This guide is intended for individuals who are installing the IX-API SDK as a prerequisite to developing policy-enforcement applications.

## In This Guide

This guide includes the following chapters and appendices:

- **Chapter 1, "Before Installing the IX-API SDK,"** provides prerequisites for installing and using the IX-API SDK.
- **Chapter 2, "Instructions for the Windows NT Operating System,"** provides instructions for installing the IX-API SDK on a Windows NT operating system and for removing a previous installation if necessary.

## Other Sources of Information

This guide is part of the Intel IX documentation set, which also includes:

- *IX-API SDK Reference*, which describes the Intel IX-API SDK (software developer's kit), including both the standard host API (application programming interface) for supported operating systems and the API for the Policy Accelerator, which consists of the Action Services Library (ASL) and the Network Classification Language (NCL™)
- *Developing Applications Using the IX-API SDK*, which provides programmers with conceptual descriptions and instructions on writing network policy-enforcement applications using the IX-API SDK

- *IX-API SDK Release Notes*, which lists information about the latest software release
- *Installing a Policy Accelerator 100 Board*, which describes how to install a Policy Accelerator PCI board into a PC
- *Customizing a NIC Driver Using the ODX Protocol*, which describes how to use the optimal data exchange (ODX) protocol for PCI to customize your standard NIC driver for communication with the Policy Accelerator through a direct PCI bus interface

In addition, the Intel Web site provides valuable information on products, support, and the company. See "Contacting Intel" on page vi.

## Typographic Conventions

This document uses the following typographic conventions to help you locate and identify information:

| | |
|---|---|
| *Italic text* | Used for new terms, emphasis, and book titles; also identifies arguments in syntax descriptions. |
| **Bold text** | Identifies keywords and punctuation in syntax descriptions. |
| `Courier font` | Identifies file names, folder names, and text that either appears on the screen or that you are required to type. |

✓ **NOTE:** Provides extra information, tips, and hints regarding the topic.

**CAUTION:** Identifies important information about actions that could result in damage to or loss of data or could cause the application to behave in unexpected ways.

**WARNING!** Identifies critical information about actions that could result in equipment failure or bodily injury.

## Contacting Intel

You can reach Intel's automated support services 24 hours a day, every day at no charge. The services contain the most up-to-date information about Intel products. You can access installation instructions, troubleshooting information, and general product information.

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- General online support services are on the World Wide Web at:

  `http://support.intel.com`

- Online support services for the Policy Accelerator 100 are on the World Wide Web at:

  `http://support.intel.com/support/network/adapter/pa/pa100/`

For specific types of information and services, go to the following Web and internet sites:

- **Corporate:** `http://www.intel.com`
- **Network Products:** `http://www.intel.com/network`
- **Intel IX Information:** `http://developer.intel.com/design/ixa/`
- **IX-API SDK:** `http://developer.intel.com/design/ixa/software/index.htm`
- **Policy Accelerator:** `http://developer.intel.com/design/ixa/pa100/index.htm`
- **ASIC:** `http://128.11.21.45/scripts/mardev/product/ixe100.asp`
- **FTP Host:** `download.intel.com`
- **FTP Directory:** `/support/network/adapter`

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  `http://support.intel.com/support/9089.htm`

# Chapter 1
# Before Installing the IX-API SDK

## Introduction

This chapter specifies what you need to know or to do before you can install the IX-API SDK software.

This chapter contains the following sections:


- "System Requirements for Using this Release" on page 1
- "Obtaining the Installation Files" on page 2


## System Requirements for Using this Release

The following table lists the minimum system requirements for the SDK 3.0 release.

| Type | Minimum Requirement |
|---|---|
| Operating Environment | ■ Windows NT 4.0 with Service Pack 4 or 5 |
| Compilers | ■ WIndows NT: Microsoft® Visual Studio™ 6.0 Development System with Service Pack 1 |
| Document viewer | Choose your method for viewing the IX-API SDK documentation:<br>■ Internet Explorer 4.0 or later, to view IX-API SDK documentation as compiled HTML Help pages<br>■ Netscape Navigator 4.0 or later, or Internet Explorer 4.0 or later, to view IX-API SDK documentation as standard HTML pages<br>■ Adobe Acrobat Reader, to view or print IX-API SDK documentation in PDF |

# Obtaining the Installation Files

Before you can install the IX-API SDK, you must obtain the installation file set.

### SDK Installation Files

The IX-API SDK allows you to develop, test,and run a policy-enforcement application.

The SDK installation files are located at the top level of the the SDK developer's release media, such as a CD-ROM.

### Run-Time Installation Files

The IX-API SDK run-time software allows you to run a policy-enforcement application even when you are not the application's developer.

If you are installing the run-time software from the SDK developer's release media, such as a CD-ROM, the run-time installation files are located under the `Runtime` directory.

If you are installing the run-time software as a prerequisite to installing a policy-enforcement application from third-party software developer, contact the developer for download or distribution information.

The developer might ask you to download the installation file set directly from the Intel Web site (see "Contacting Intel" on page vi) or from another location, or might provide the file set as part of the policy-enforcement application distribution.

# Chapter 2
# Instructions for the Windows NT Operating System

This chapter describes how to install the IX-API SDK software on a PC that has a Policy Accelerator installed in it and that uses the Windows NT operating system.

This chapter contains the following sections:


- "Removing a Previous Installation" on page 3
- "Installing the IX-API SDK" on page 4
- "Testing the IX-API SDK Installation" on page 6
- "Installation Problems" on page 7
- "Installing an ODX-Customized NIC Driver" on page 7


## Removing a Previous Installation

This section describes how to remove a previously installed IX-API SDK from your system, which you must do before installing the latest version.

There are two steps in this process. Before you remove the IX-API SDK software, you must remove all the Policy Accelerator device drivers from the system.

### Step 1: Remove the Drivers

You must remove each instance of the Policy Accelerator drivers using the Network control panel. When all instances of the Policy Accelerator devices are removed, all Policy Accelerator driver information is removed from the registry so that none of the drivers will be installed for subsequent restarts.

To remove the Policy Accelerator devices:

1. Open the Network Control Panel.
2. Select the Adapters tab.

3. Select the Policy Accelerator device you want to remove, for example `hwpe0A`.
4. Click Remove.
5. Repeat Step 3 and Step 4 for each Policy Accelerator device.
6. Select the Bindings tab.

   This forces a Binding recalculation.
7. Click Close.
8. Restart the system when asked.

**Step 2: Remove the IX-API SDK Software**

1. Exit the IX-API SDK Resolver by right-clicking on the Resolver icon in the lower right corner of your screen and selecting Exit.

**NOTE:** The latest icon, , differs from that of previous versions:

2. Open the Add/Remove Programs control panel.
3. Select NetBoost SDK, NetBoost Runtime, or both (if they both appear) from the list and click Add/Remove. (If you are removing an earlier installation of the 3.0 or 4.0 release, the names are Intel SDK and Intel Runtime.)

The IX-API SDK software is now removed from the system. If any files remain, reboot the system, then remove the previous installation directory.

## Installing the IX-API SDK

To install the IX-API SDK:

1. Install the Intel Policy Accelerator.

   See *Installing a Policy Accelerator 100 Board*.

**CAUTION:** If you have previously installed IX-API SDK, you must remove it as described in the previous section before attempting to install the new version. Failure to do so can cause errors in the installation or difficulty running the IX-API SDK.

2. Start the IX-API SDK installation using the InstallShield program by running `Setup.exe`.
   - If your installation files are on a CD-ROM, this file is located at the top level of the CD-ROM.

- If you downloaded the installation files from the Intel Web site or from your vendor, this file is at the top level at the download location.

3. In each dialog box, click Next as appropriate until the InstallShield program begins copying files onto your system.

   Wait for the copying to finish.

4. When asked whether to install Acrobat Reader, click Yes if it is not already installed.

   This allows you to read the PDF version of the documentation.

5. When asked whether to bring up the Control Panel Network Applet, click Yes.

   This pauses, then displays the Network control panel Adapters tab. Set up your drivers as follows:

   a. Click Add, which displays a new window.

   b. Click Have Disk.

   c. Enter the path where the `oemsetup.inf` file for the Policy Accelerator drivers is located.

      For example, if the IX-API SDK software is installed in the default directory:

      ```
      C:\IXSDK
      ```

      then enter the following path into the dialog box:

      ```
      C:\IXSDK\drivers
      ```

   d. Click OK.

      This opens a window with a list of possible devices to install. The only entry is “Intel PA100 Adapter”.

   e. Select this entry and click OK.

      This displays a Settings window, for example, nbether2 Settings, for the first of the two Policy Accelerator interfaces.

   f. Select a Connection Type to indicate the speed and duplex of the interface—we suggest using AutoSense—and click OK.

      This setting takes effect only when the Resolver runs. Each time the Resolver restarts, the speed and duplex for each port is set.

   g. Repeat for the second interface.

   h. Click the Bindings tab, which automatically updates the driver list.

Both interfaces are now in the list under the Adaptors tab; for example:

```
Intel PA100 Adapter (hwpe0A)
Intel PA100 Adapter (hwpe0B)
```

i. Click the Protocols tab to display a list of available protocols.

j. Double-click TCP/IP Protocol.

   This displays a TCP/IP Properties dialog with a pull-down list of Adapter interfaces.

k. Select each Policy Accelerator interface and set its address; for example:

   Set `hwpe0A` to 192.168.0.1 with a netmask of 255.255.000.000.

   Set `hwpe1A` to 192.168.0.2 with a netmask of 255.255.000.000.

l. Click OK and then click CLOSE.

6. When asked whether to restart the system, click Yes.

   After the system restarts, the Resolver icon appears in the lower right-hand corner of your screen. This indicates that the driver software is installed.

7. After installing the IX-API SDK, and after each system restart, you must start the Resolver software. To start the Resolver, right-click the Resolver icon and choose Start Resolver from its pop-up menu.

**NOTE:** To determine whether the Resolver is already running, position your mouse pointer over the Resolver icon. If the icon is enabled and displays “Resolver is running,” you do not need to start the Resolver. If the icon is disabled and displays “Resolver is NOT running,” start the Resolver as described here.

You can also verify that the Resolver is running by looking for `resolver.exe` in the Windows NT Task Manager. Right-click on the task bar to start the Task Manager.

## Testing the IX-API SDK Installation

After you have installed the IX-API SDK, you can test it as follows:

1. Connect the two Ethernet interfaces of the Policy Accelerator with a 10/100BT crossover cable.

2. Execute the LoopApp program:

   a. Open a command window.

b. Enter:

```
cd %NBPATH%\demos\LoopApp\winnt\release
loopapp
```

If the loop executes correctly, it displays a series of dots and “Loopback Passed.” If the program displays “Loopback failed,” there is a problem with the driver installation, with the Policy Accelerator, or with the 10/100BT crossover cable.

**NOTE:** You must exit from the LoopApp program before you exit from the Resolver, or unexpected system behavior can result.

## Installation Problems

**Problem:** One of the following messages might appear:

```
An error occurred during the move data process.
```

—or—

```
Cannot find C:/IXSDK/bin/NBControlService.exe
(or one of its components).
```

**Cause:** This indicates that some IX-API SDK files were not removed correctly before starting the installation. This can occur if you did not exit the Resolver before removing the previous installation, or if you skipped the step of removing the previous installation.

**Solution:** Attempt to remove the previous installation again, verify that all IX-API SDK files and folders are deleted, and reinstall.

## Installing an ODX-Customized NIC Driver

This release includes a driver for the Intel® Pro/1000 NIC that has been customized for communication with the Policy Accelerator using the Optimal Data Exchange (ODX) Protocol for PCI. If you have installed this NIC, use these instructions to install the customized NIC driver on your PC.

1. Install the IX-API SDK as described in “Installing the IX-API SDK” on page 4. When the installation is complete, reboot as recommended.
2. Open the Windows NT Network Control Panel.

3. In the Adapters tab, click Add, then click Have Disk. Enter the path in your IX-API SDK installation where the NIC driver is located:

   `SDKinstallpath\drivers\anic\nbe1000`

4. Select the ODX Adapter to install it.
5. In the Bindings tab, find and disable all network bindings for the Intel PA100 Adaptor and for the Intel Adapter for NetBoost.
6. Reboot the system.

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**Intel Corporation**
1350 Villa Street
Mountain View, CA 94041-1126
Tel: 650.567.9800
Fax: 650.567.9810
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