



# **Mellanox WinOF for Windows Installation Guide**

Rev 1.10

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Mellanox WinOF for Windows Installation Guide

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## 1 Overview

This document describes how to install and test **Mellanox WinOF for Windows** on a single host machine with Mellanox InfiniBand hardware installed. The document includes the following sections:

- This overview
- [“Web Page and Documentation” \(page 3\)](#)
- [“Hardware and Software Requirements” \(page 3\)](#)
- [“Identifying Mellanox HCAs on Your Machine” \(page 4\)](#)
- [“Downloading Mellanox WinOF” \(page 5\)](#)
- [“Installing Mellanox WinOF” \(page 5\)](#)
- [“Installation Results” \(page 10\)](#)
- [“Modifying Configuration After Installation” \(page 11\)](#)
- [“Updating Firmware After Installation” \(page 11\)](#)
- [“Uninstalling Mellanox WinOF” \(page 13\)](#)

## 2 Web Page and Documentation

Please visit the Mellanox WinOF Web page at [http://www.mellanox.com/products/MLNX\\_WinOF.php](http://www.mellanox.com/products/MLNX_WinOF.php) to download the package and to reference documentation such as release notes, user manuals, FAQ, troubleshooting, and archive. After installing Mellanox WinOF (see “Installing Mellanox WinOF” below), you will find release notes and user manuals under “Program Files\Mellanox\MLNX\_WinOF\Documentation”.

## 3 Hardware and Software Requirements

### 3.1 Hardware Requirements

#### Required Disk Space for Installation

- 100MB

#### Platforms

Any computer system with an x86 or x64 CPU architecture, and with a PCI adapter card based on one of the following Mellanox Technologies’ InfiniBand HCA devices:

- ConnectX™ (firmware: fw-25408 v2.5.000 or later)
- InfiniHost™ III Ex (firmware: fw-25218 v5.3.000 or later for Mem-Free cards, and fw-25208 v4.8.200 or later for cards with memory)
- InfiniHost™ III Lx (firmware: fw-25204 v1.2.000 or later)
- InfiniHost™ (firmware: fw-23108 v3.5.000 or later)

Note: For the list of supported architecture platforms, please refer to the *Mellanox WinOF for Windows Release Notes* file under the “Documentation” folder.

## 3.2 Software Requirements

### Installer Privileges

The installation requires administrator privileges on the target machine.

### Operating Systems

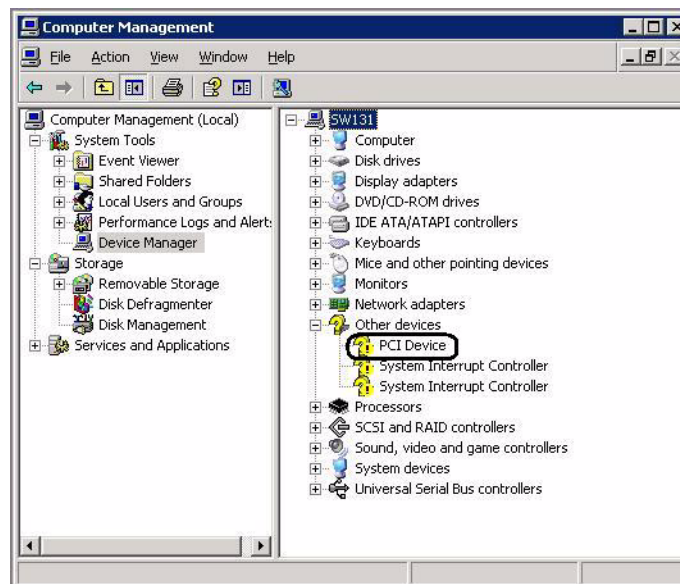
- Windows XP
- Windows Server 2003
- Windows Server 2008

Note: For the list of supported operating system distributions and kernels, please refer to the *Mellanox WinOF for Windows Release Notes* file under the “Documentation” folder.

## 4 Identifying Mellanox HCAs on Your Machine

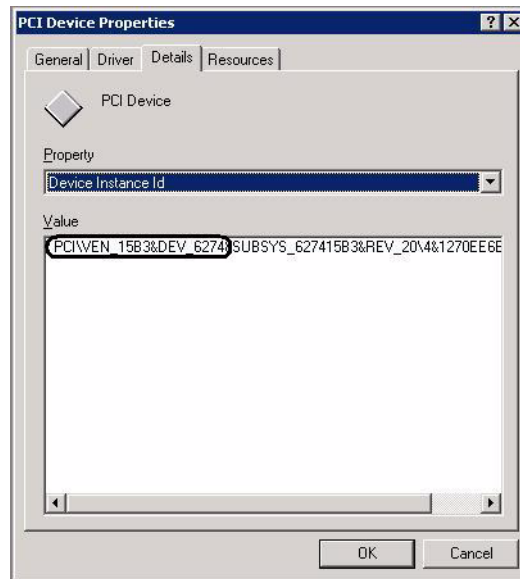
Step 1. Check the Device Manager display for PCI devices. If the device driver has not been installed, check under Other Devices.

Note: If you cannot find any PCI device, make sure that the HCA card(s) is correctly installed in the PCI slot. If no PCI device is identified after your check, try installing the HCA card into a different PCI slot.



Step 2. Select a PCI Device entry, right-click and select Properties to display the PCI Device Properties window.

Step 3. Click the Details tab and select Device Instance ID from the Property pull-down menu.



Step 4. In the Value display box, check the fields VEN and DEV (fields are separated by '&'). In the display example above, notice the sub-string “PCI\VEN\_15B3&DEV\_6274”: VEN is equal to 0x15B3 – this is the Vendor ID of Mellanox Technologies; and DEV is equal to 6274 – this is a valid Mellanox Technologies PCI Device ID.

Note: The list of Mellanox Technologies PCI Device IDs can be found in the PCI ID repository at <http://pci-ids.ucw.cz/iii/?i=15b3>.

Step 5. If the PCI device does not have a Mellanox HCA ID, return to [Step 2](#) to check another device.

Note: If you cannot find any Mellanox HCA device listed as a PCI device, make sure that the HCA card(s) is correctly installed in the PCI slot. If the HCA device remains unidentified, try installing the adapter card into a different PCI slot.

## 5 Downloading Mellanox WinOF

Download the appropriate MSI to your host from the Mellanox WinOF Web page at [http://www.mellanox.com/products/MLNX\\_WinOF.php](http://www.mellanox.com/products/MLNX_WinOF.php).

The MSI's name has the format `MLNX_WinOF_<arch>_<version>.msi`, where *arch* can be either x86 or x64.

## 6 Installing Mellanox WinOF

This sections provides instructions for two types of installation:

- “Attended Installation” on page 6  
An attended installation is an installation procedure that requires frequent user intervention.
- “Unattended Installation” on page 9  
An unattended installation is an automated installation procedure that requires no user intervention.

## 6.1 Attended Installation

Note: The installation requires administrator privileges on the target machine.

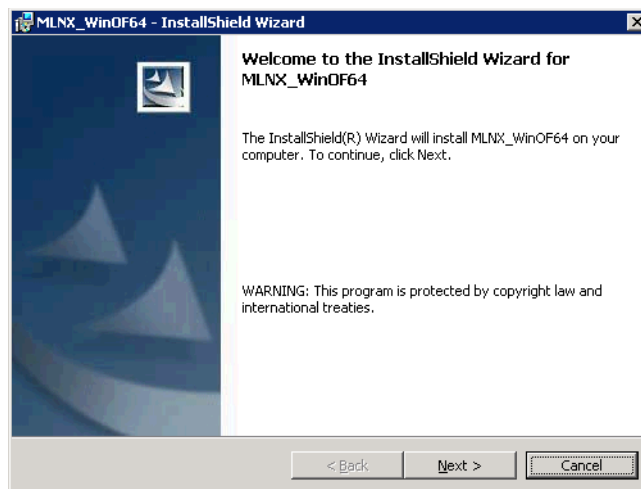
For operating systems *other* than Windows 2008, double click the MSI and follow the GUI instructions to install Mellanox WinOF.

For Windows 2008, install the MSI by opening a CMD console (click Start-->Run and enter 'cmd') and entering the following command:

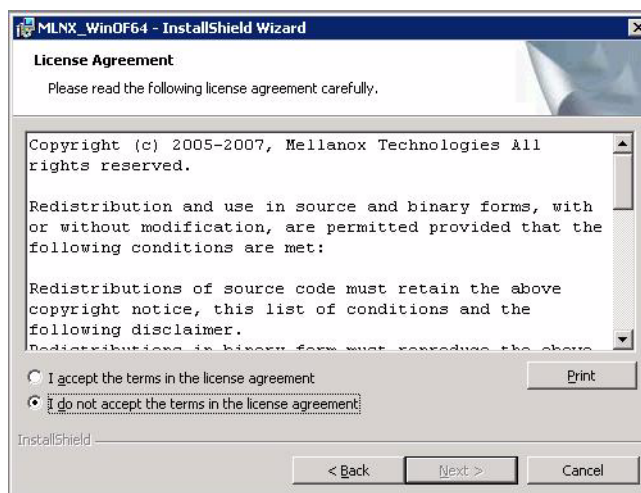
```
> msisexec.exe /i MLNX_WinOF_<arch>_<version>.msi
```

The following is an example of a Mellanox WinOF x64 installation session.

Step 1. Click Next in the Welcome screen.



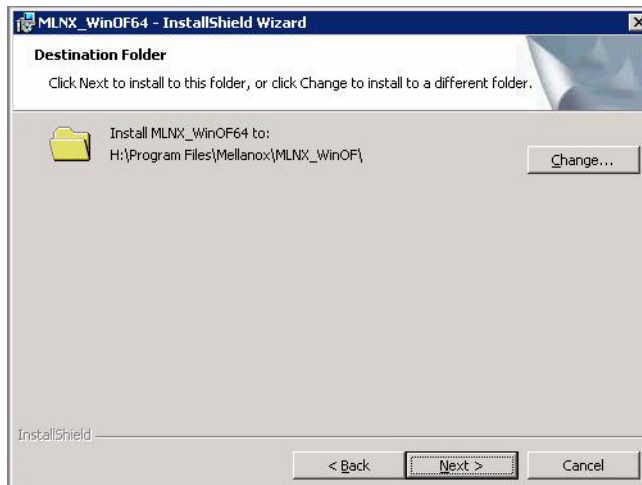
Step 2. Select the "accept" radio button and click Next.



Step 3. Enter the registration information and click Next.



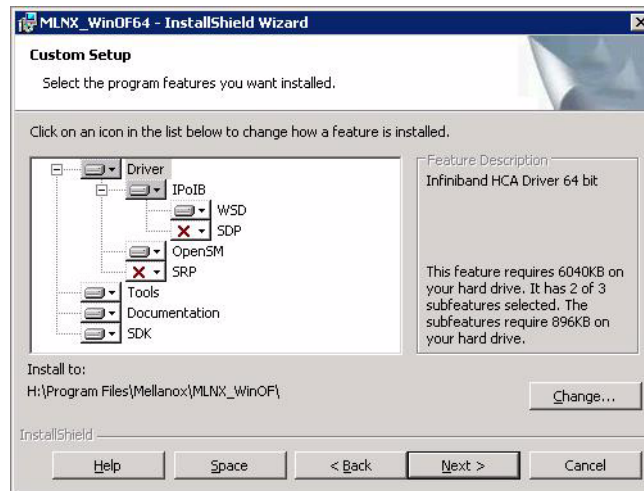
Step 4. Select the destination folder for Mellanox WinOF and click Next.



Step 5. Select the type of installation: Typical or Custom.

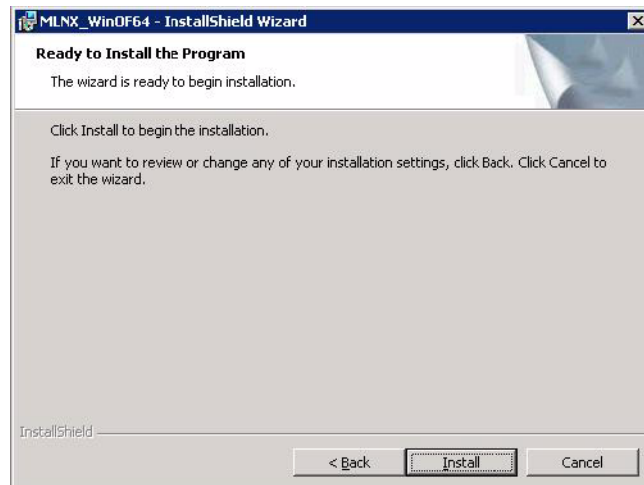


If you select Custom and click Next, you will get the screen below. To install/remove a component, left-click the component and enable/disable it for installation.



To continue, or if you select Typical and click Next, advance to the next step.

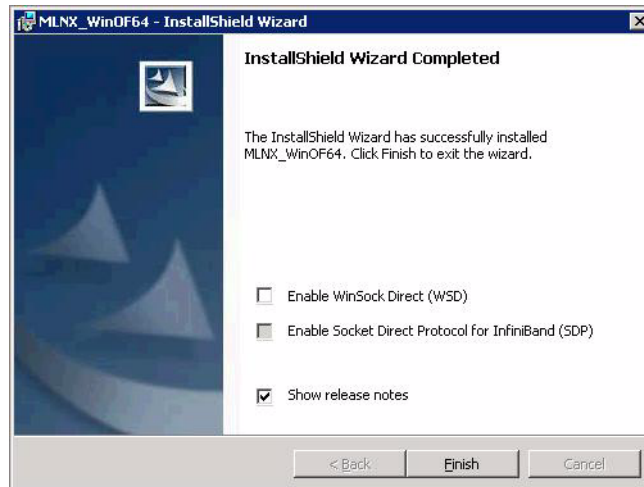
Step 6. To install the chosen components, click Install.



Step 7. In the following window, enable the components you need (if any). To complete the installation, click Finish. (See figure on the next page.)

Note: Even if you do not enable any of the displayed components in this step, you will be able to enable components after the installation completes – see the file `MLNX_WinOF_README.txt`.





## 6.2 Unattended Installation

Note: The installation requires administrator privileges on the target machine.

To perform a silent/unattended installation, open a CMD console (click Start->Run and enter 'cmd') and enter the following command:

```
> msiexec.exe /i MLNX_WinOF_<arch>_<version>.msi /qn [Parameter]
```

where **Parameter** is:

**ADDLOCAL** Provides the list of components (separated by commas) to install. Available components are: Driver, IPoIB, WSD, SDP, OpenSM, SRP, Tools, Docs, and SDK. You can also provide ADDLOCAL=ALL to install all components.

Note: If you do *not* provide the ADDLOCAL parameter, the script will install the following list of default components: Driver, IPoIB, WSD, OpenSM, Tools, Docs, and SDK.

**WSDENABLE** Enable WSD by adding the parameter WSDENABLE=True. (The installation procedure installs WSD but does not enable it.)

Note: For all command options, enter 'msiexec.exe /?'.

## Usage Examples

- The following command installs MLNX\_WinOF in the default configuration:

```
> msiexec /i MLNX_WinOF_x86_1_1_0.msi /qn
```

- The following command installs MLNX\_WinOF with all the available components:
 

```
> msixexec /i MLNX_WinOF_x86_1_1_0.msi /qn ADDLOCAL=ALL
```
- The following command installs MLNX\_WinOF with the default components plus SRP:
 

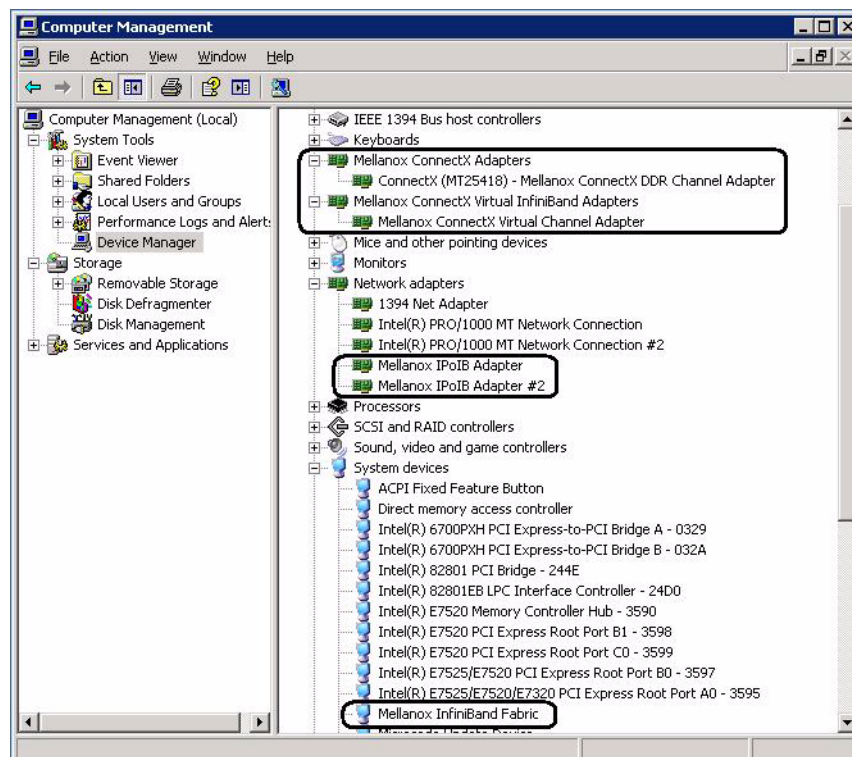
```
> msixexec /i MLNX_WinOF_x86_1_1_0.msi /qn \
  ADDLOCAL=Driver,IPoIB,WSD,OpenSM,SRP,Tools,Docs,SDK
```
- The following command installs MLNX\_WinOF in the default configuration and enables WSD:
 

```
> msixexec /i MLNX_WinOF_x86_1_1_0.msi /qn WSDENABLE=True
```

## 7 Installation Results

### Hardware

Displaying the Device Manager will show the Mellanox HCA devices, the Mellanox InfiniBand fabric, and an IPoIB (network) device for each InfiniBand port.



### Software

- The MLNX\_WinOF package is installed under the directory selected in [Step 4](#) of [Section 6.1](#).
- OpenSM is installed as a disabled Windows service. To enable it, enter at the command line:
 

```
> sc start opensm
```

## 8 Modifying Configuration After Installation

### 8.1 Modifying Mellanox HCA Configuration

To modify HCA configuration after installation, perform the following steps:

- a. Open the Registry editor by clicking Start->Run and entering 'regedit'.
- b. In the navigation pane, expand HKEY\_LOCAL\_MACHINE->SYSTEM->CurrentControlSet->Services.
- c. Expand (in the navigation pane) the HCA driver service entry:
  - 'mtcha' for the InfiniHost family
  - 'mlx4\_hca' and 'mlx4\_bus' for the ConnectX family
- d. Click the Parameters entry in the expanded driver service entry to display HCA parameters.
- e. Double click the desired HCA parameter and modify it. Repeat this step for all the parameters you wish to modify.
- f. Close the Registry editor after completing all modifications.
- g. Open Device Manager and expand the correct InfiniBand Channel Adapters entry (i.e., the adapter with modified parameters).
- h. Right click the expanded HCA entry and left-click Disable. This disables the device.
- i. Right click the expanded HCA entry and left-click Enable. This re-enables the device.

Note: For the changes to take effect, you must disable and re-enable the HCA (steps *h* and *i* above).

### 8.2 Modifying IPoIB Configuration

To modify the IPoIB configuration after installation, perform the following steps:

- a. Open Device Manager and expand Network Adapters in the device display pane.
- b. Right-click the Mellanox IPoIB Adapter entry and left-click Properties.
- c. Click the Advanced tab and modify the desired properties.

Note: The IPoIB network interface is automatically restarted once you finish modifying IPoIB parameters.

Note: You need to restart `opensm` after modifying IPoIB configuration.

## 9 Updating Firmware After Installation

The following steps describe how to burn new firmware downloaded from Mellanox Technologies' Web pages under [http://www.mellanox.com/support/firmware\\_download.php](http://www.mellanox.com/support/firmware_download.php).

Step 1. Install the firmware tools package, MFT for Windows (WinMFT), on your machine. You can download it from [http://www.mellanox.com/products/management\\_tools.php](http://www.mellanox.com/products/management_tools.php). Please check also the documentation on the same Web page.

Step 2. Open a CMD console. (Click Start-->Run and enter 'cmd'.)

Step 3. Start mst.

```
> st start mst

SERVICE_NAME: mst
        TYPE               : 1  KERNEL_DRIVER
        STATE                : 4  RUNNING
                                (STOPPABLE, NOT_PAUSABLE, IGNORES_SHUTDOWN)
        WIN32_EXIT_CODE       : 0  (0x0)
        SERVICE_EXIT_CODE   : 0  (0x0)
        CHECKPOINT           : 0x0
        WAIT_HINT            : 0x0
        PID                  : 0
        FLAGS                 :
```

Step 4. Identify your target InfiniBand device for firmware update.

a. Get the list of InfiniBand device names on your machine.

```
> mst status

Found 2 devices:
    mt25418_pciconf0
    mt25418_pci_cr0
```

b. Your InfiniBand device is the one with the postfix “\_pci\_cr0”. In the example listed above, this will be mt25418\_pci\_cr0. Use the string “mtXXXXX” to identify the device type by checking the Web page <http://pci-ids.ucw.cz/iii/?i=15b3>. In the example above, mtXXXXX=mt25418, and the device is a ConnectX IB.

c. Now go to the Mellanox firmware download page at:  
[http://www.mellanox.com/support/firmware\\_download.php](http://www.mellanox.com/support/firmware_download.php).

d. Go to the correct firmware download page according to the device type identified in step (b) above.

e. Run ‘vstat’ to obtain the PSID of your HCA card. The PSID is a unique identifier for the HCA card.

Step 5. Using the PSID obtained in [Step 4\(e\)](#), download the appropriate firmware binary image (\*.bin.zip) and unzip it.

Step 6. Burn the firmware image using the **flint** utility (part of your installed WinMFT).

Note: Make sure that you burn the correct binary image to your HCA card. Burning the wrong image may cause severe firmware corruption. Please review [Step 4](#) and [Step 5](#) above.

```
> flint -d mt25418_pci_cr0 -image <image>.bin burn
```

Note: You may need to run ‘unzip’ on the downloaded firmware image prior to the burn operation.

Step 7. Reboot your machine after the firmware burning is completed.

## 10 Uninstalling Mellanox WinOF

### Attended Uninstall

To uninstall MLNX\_WinOF on a single node, perform *one* of the following options:

- a. Click Start->Programs->Mellanox->MLNX\_WinOF->Uninstall MLNX\_WinOF
- b. Click Start->Control Panel-> Add Remove Programs-> MLNX\_WinOF-> Remove

### Unattended Uninstall

To uninstall MLNX\_WinOF in unattended mode, open a CMD console and perform *one* of the following procedures:

- a. If the MSI that was used to install MLNX\_WinOF is available on your machine, enter the following command:

```
> msixec.exe /x MLNX_WinOF_<arch>_<version>.msi /qn /forcerestart
```

- b. Obtain the MLNX\_WinOF GUID (product code) by left-clicking Start->Programs->Mellanox->MLNX\_WinOF.

Now right-click on Uninstall MLNX\_WinOF and select Properties, then copy the GUID from the “Target entry. The GUID is the hexadecimal string that appears after ‘/x’. To uninstall the MSI, enter the following command:

```
> msixec.exe /x <GUID> /qn /forcerestart
```

Note: The ‘/forcerestart’ parameter forces the machine to restart after uninstalling the MLNX\_WinOF MSI. This is recommended action for a complete uninstall procedure.

Note: For all command options, enter ‘msixec.exe /?’.

