

NB VPN Reference Manual

Remote Access for NB HMI Product Series

Version v1.00

OMRON Europe

industrial.omron.eu

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# About this Manual

This manual describes the usage and requirements of the Virtual Private Network (VPN) feature for the NB Human Machine Interface (HMI) Product Series. The following NB Series products support VPN:

|  |  |
| --- | --- |
| **Series** | **Model numbers** |
| NB Series (Ethernet) | NB3Q-TW01B |
|  | NB5Q-TW01B |
|  | NB7W-TW01B |
|  | NB10W-TW01B |

The following software versions are required installing before using the VPN feature.

|  |  |
| --- | --- |
| **Software** | **Version number** |
| NB-Designer (one of these versions) | 1.38  1.39  1.41 |
| NBDProxy Software | 1.0.4.0 |

Note: NB-Designer version 1.37 and older does not support the VPN feature.

Please read this manual and all related manuals and be sure you understand information provided before attempting to program or use NB HMI Product Series.

**Precautions** provide a list of precautions for the Virtual Private Network feature in the NB HMI Product Series.

**Section 1** describes transferring project files from NB-Designer to remote HMI.

**Section 2** describes transferring project files from remote HMI to NB-Designer.

The **References** provides a list of document names that compliment this manual.

# OMRON Product References

All OMRON products are capitalized in this manual. The word “Unit” is also capitalized when it refers to an OMRON product, regardless of whether or not it appears in the proper name of the product.

The abbreviation “HMI” means Human Machine Interface. “VPN” is used in this manual, and means Virtual Private Network.

# Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent):

* Personnel in charge of installing automation systems
* Personnel in charge of designing automation systems
* Personnel in charge of managing automation systems and facilities

# Read and Understand this Manual

Please read and understand this manual before using the VPN feature of the NB HMI Product Series.

# Precautions

* Software Requirements

|  |  |
| --- | --- |
| **Software** | **Version number** |
| NB-Designer (one of these versions) | 1.38  1.39  1.41 |
| NBDProxy Software | 1.0.4.0 |

**Note**: NB-Designer version 1.37 and older does not support the VPN feature.

* Update Kernel and Rootfs of the unit using NB-Designer version 1.38 or newer.
* The following precautions are applicable for NBDProxy:
  1. Requires .NET Framework 4.5.
  2. Only supports downloading NB-Designer project files.
  3. Communication time-out setting for this software is 5 seconds.
  4. Communication time-out setting is fixed in this software.

# Section 1 Transferring Project Files from NB-Designer to remote HMI

The NBDProxy Software (henceforth called “NBDProxy”) is the supplementary software for downloading project data from NB-Designer to the NB Unit in the VPN environment.

## 1.1 Installing NBDProxy

**How to Install**

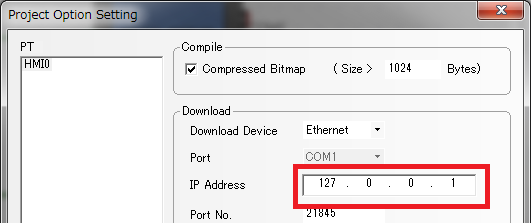
NBDProxy is provided in a zip file, and thus there is no need to perform a special install work. Save the NBDProxy.exe file stored in the zip file in a suitable location in your PC.

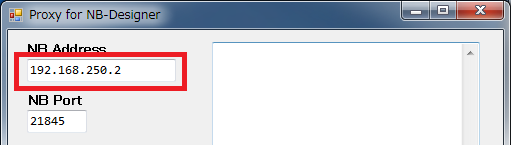
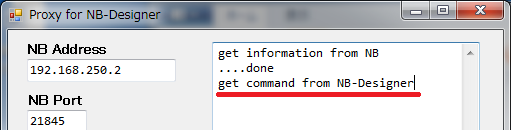
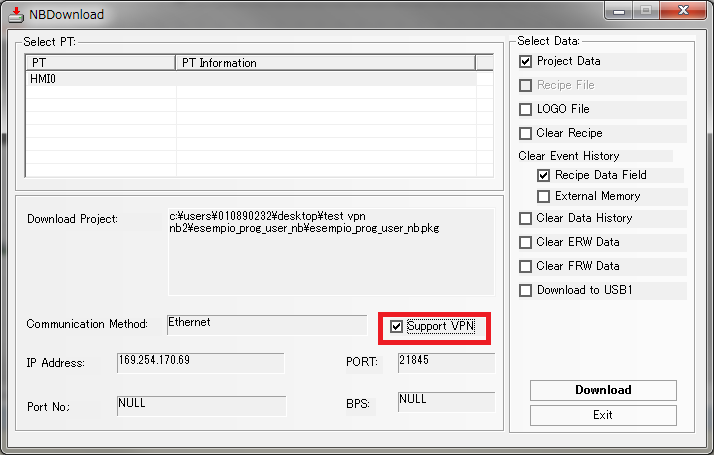
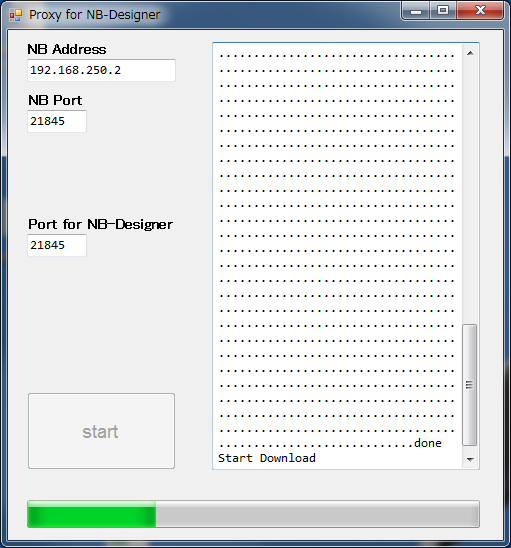
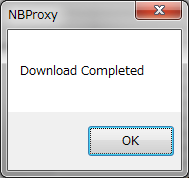
**How to Uninstall**

Delete NBDProxy.exe and the folder “%AppData%\NBDProxy” and files in it.

## 1.2 Transferring Project Files

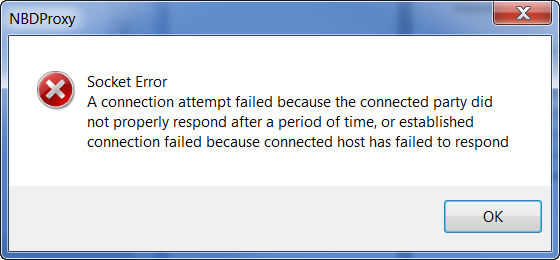
1. Start NBDProxy and NB-Designer.
2. To perform downloading using NBDProxy, select [Tool] - [Transmission Setting] in the NB-Designer menu to display the Project Option Setting dialog box. Enter IP Address as 127.0.0.1 in the dialog box.

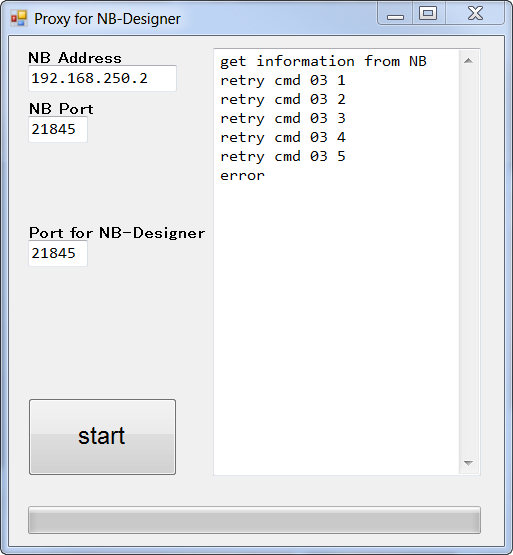


1. In NB Address, enter the IP address of the NB Unit as destination, and then click the [Start] button.  
     
   Example: when the IP address of the remote NB Unit is 192.168.250.2
2. After a while, NBDProxy waits for the project to be downloaded from NB-Designer, showing text: get command from NB-Designer.  
   
3. With NB-Designer, select [Tool] - [Download] from the menu and click the [Download] button.  
   At this point, make sure that the Support VPN checkbox is checked.  
   
4. Short while later, the download from NB-Designer is completed, and then the download from NBDProxy to the NB Unit will start.  
   
5. The download status is displayed in the progress bar. When the transfer is completed, the following dialog box appears. Click the [OK] button.  
   
6. This completes the procedure for downloading a project using NBDProxy.

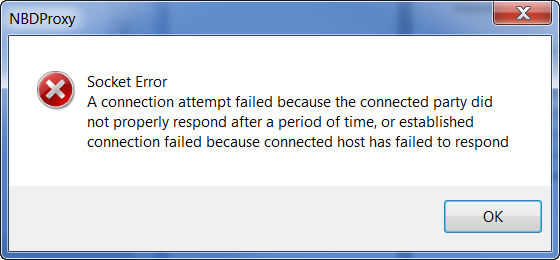
## 1.3 Troubleshooting

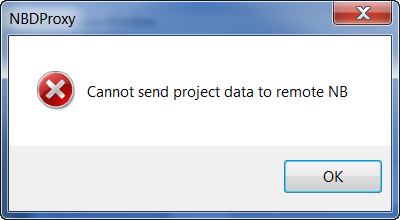
* The following message is shown when NBDProxy fails to connect with the NB unit:

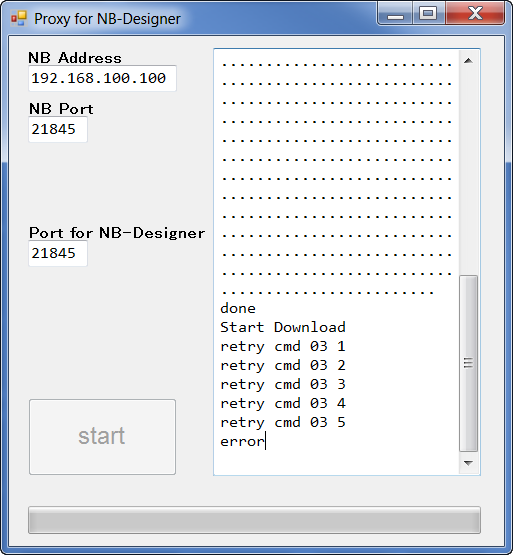




* NBDProxy retries downloading the NB-Designer project files **5** times. The following message will be shown after 5 reattempts:







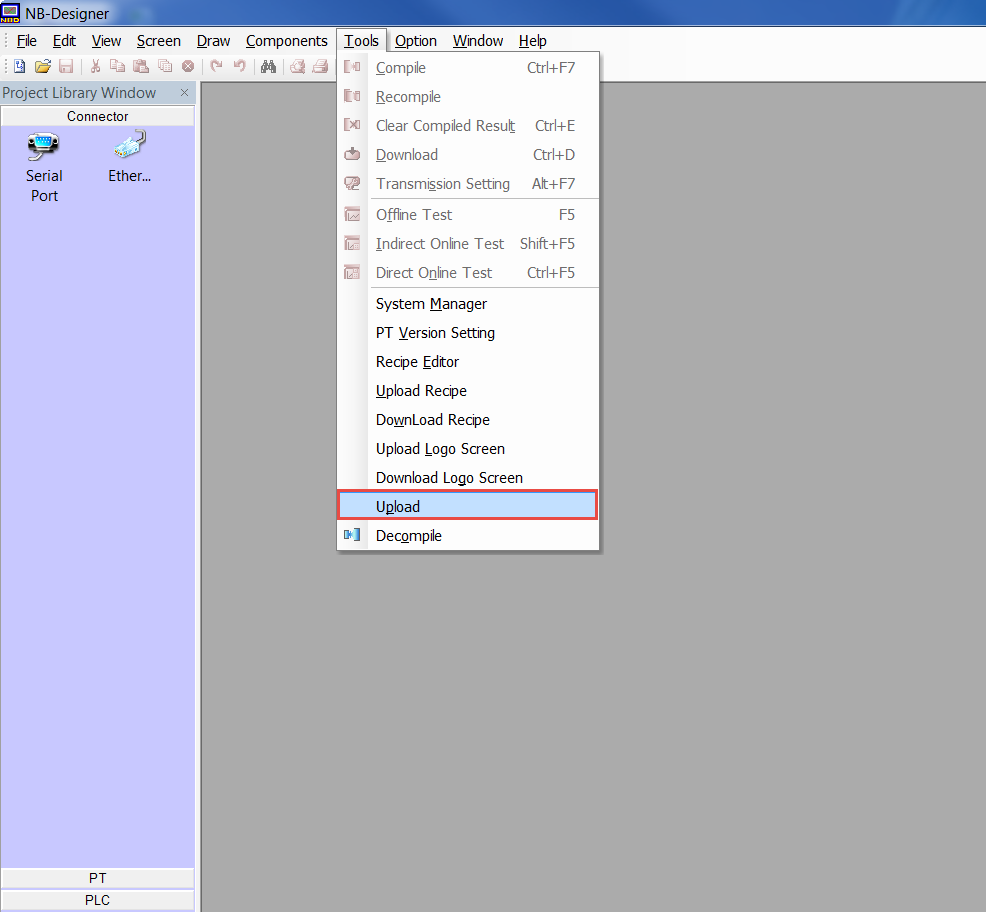
# Section 2 Transferring Project Files from remote HMI to NB-Designer

The following section describes how to transfer project files from a remote HMI to NB-Designer.

## 2.1 Transferring Project Files

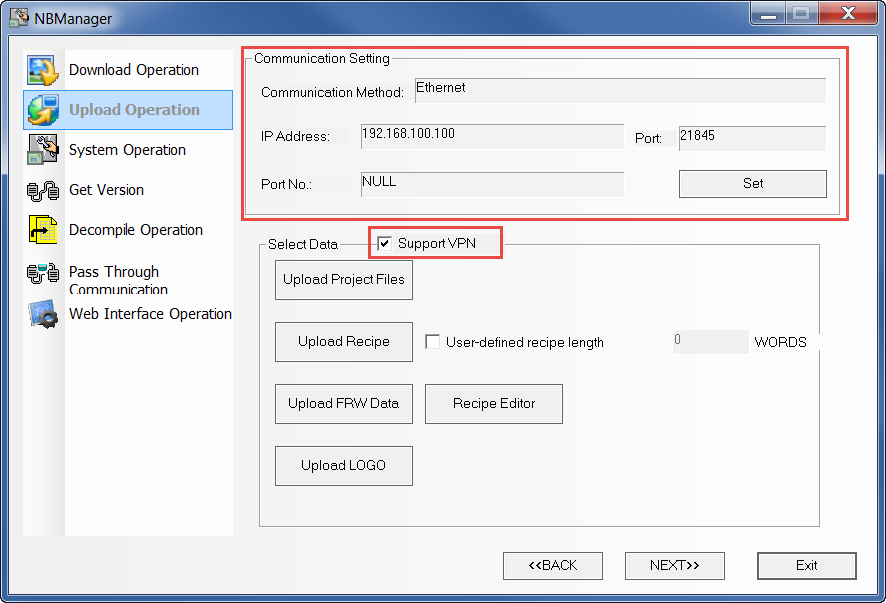
Please follow the steps below in order to understand how to transfer the files.

1. Navigate to ‘Tools’ → ‘Upload’ using the drop-down-menu.

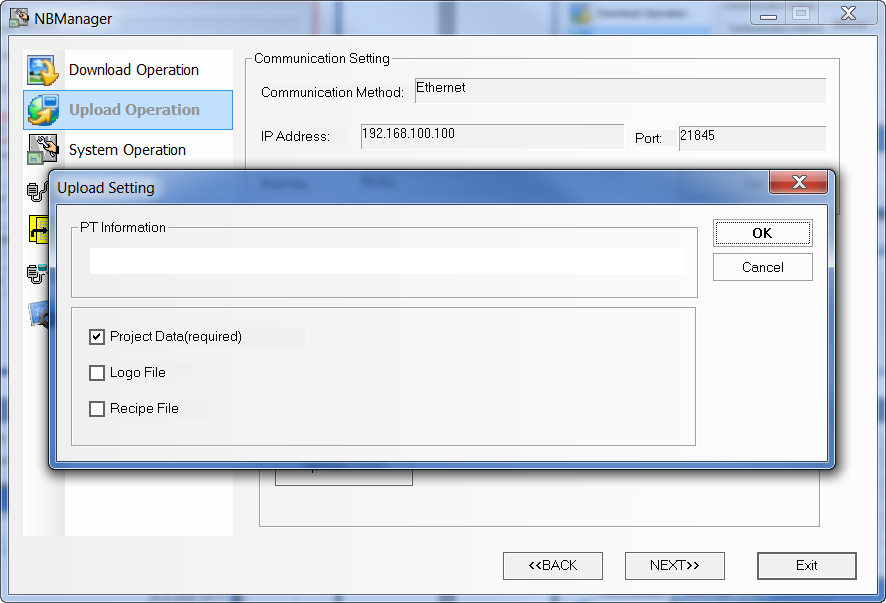


1. Set the communication settings accordingly.

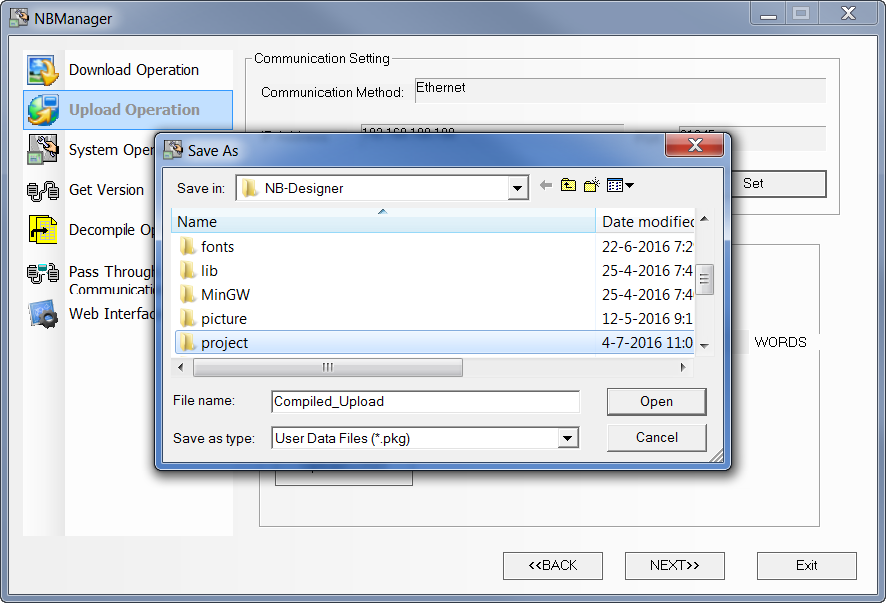
**Note**: enabling ‘Support VPN’ lowers the maximum package size (**M**aximum **T**ransmission **U**nit). This setting is not mandatory to successfully transferring the project files. However it is recommendable to select ‘Support VPN’. The VPN connection adds additional headers to the Ethernet packet. As affect the package size can exceed the maximum package size. Packets exceeding the maximum package size are dropped, resulting in communication time-outs.



1. Select the appropriate data for uploading. For example, Upload Project Files, Upload Recipe, Upload FRW Data or Upload LOGO.
2. Define and set the upload settings accordingly and press OK.

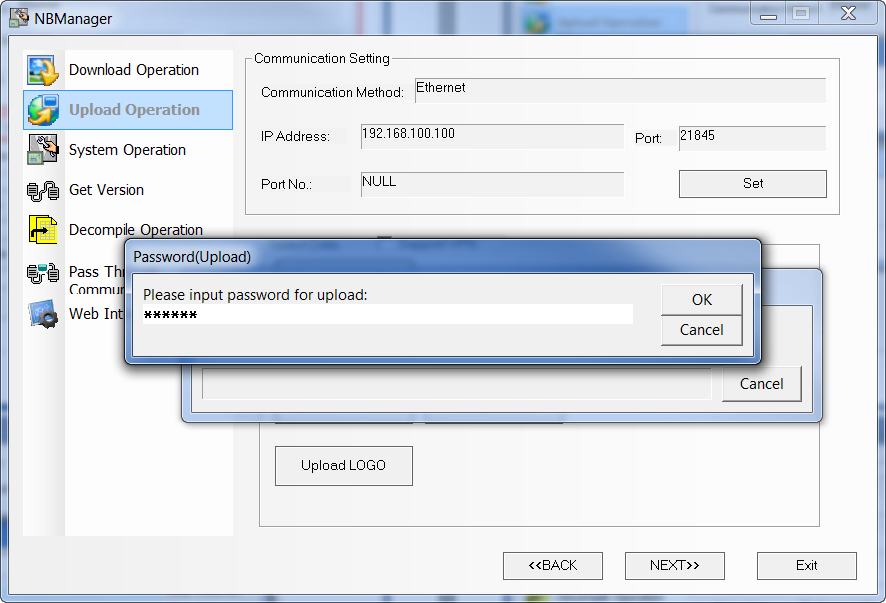


1. Define the save destination location.

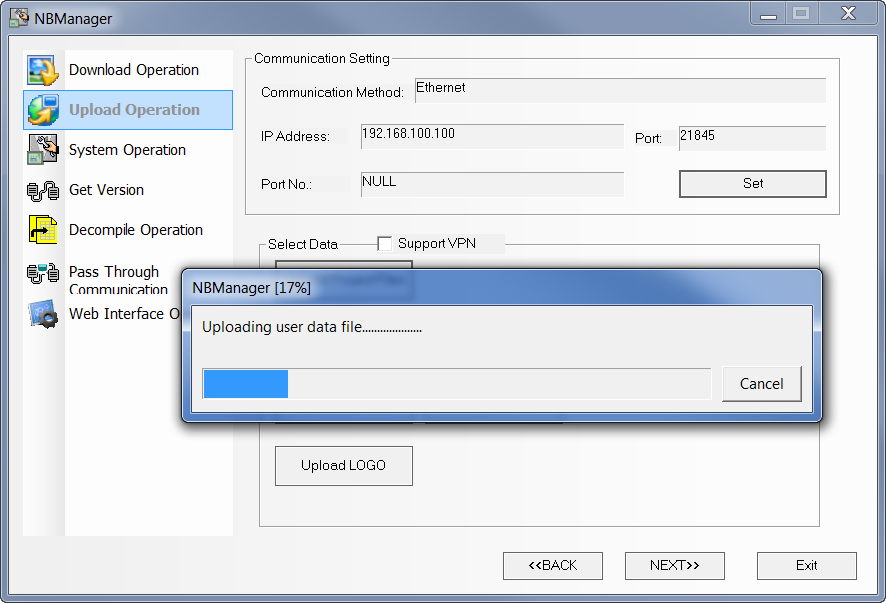


1. Provide the password and press OK.

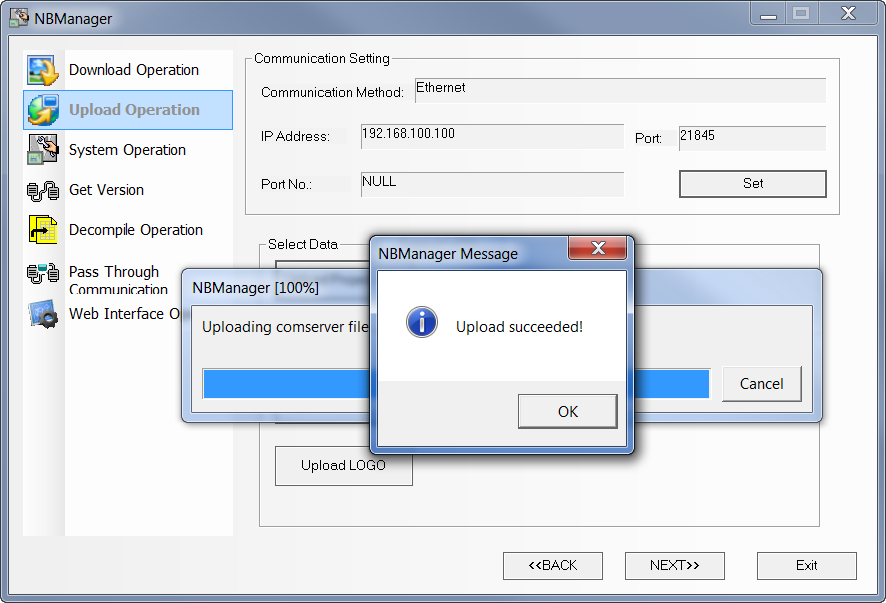
**Note**: the default password is 888888.



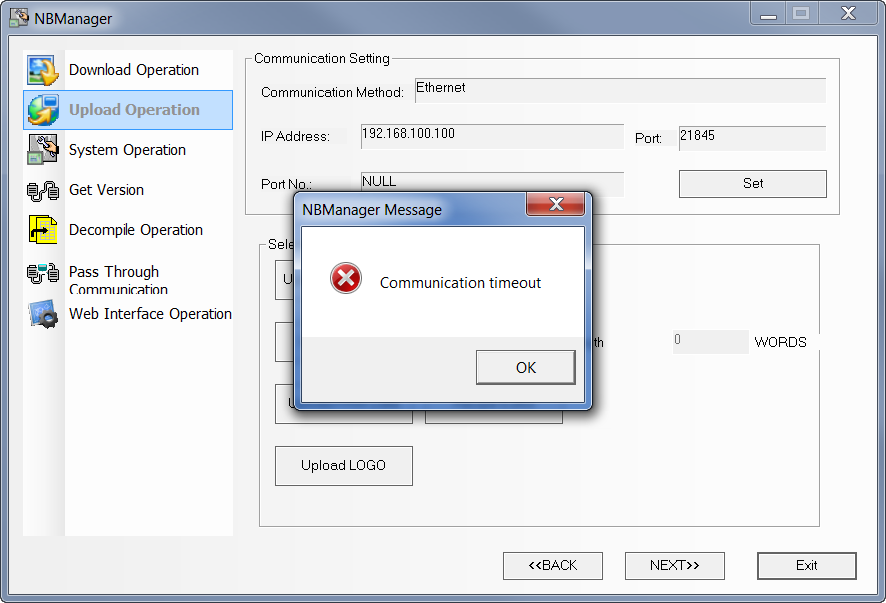
1. The transfer progress is shown.



1. The transfer process has been successfully completed.



**Note**: the following message is shown when the communication has been interrupted:



# References

*Virtual Private Network, Secure Remote Access to machines through VPN.*

White paper retrieved from industrial.omron.eu: https://industrial.omron.eu/en/products/downloads/download-white-paper-vpn

*V107-E1-08 Setup Manual.*

*V106-E1-11 NB-Designer Operation Manual.*

*V108-E1-11 Host Connection Manual.*

*V109-E1-08 Startup Guide Manual.*