



# **Norman Virus Control for Workstations Version 5.7**

## **Administrator's Guide**

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## System requirements

This version supports installation of NVC v5 on Windows 95/98/Me, Windows NT/2000/XP/2003 machines, Linux, OS/2 Warp 4, OS/2 Warp Server, Workspace On-demand, and eComStation.

For Windows 95, Internet Explorer 4.0 or higher is required. WinSock2 must be installed.

For Windows NT, version 4 with SP4 (or higher) and Internet Explorer 4.0 (or higher) are required.

For OS/2 we recommend Warp 4 fp 15 (or higher) and Java 1.1.8.

For Linux, glibc 2.2 is required.

## Who is this manual for?

This manual is intended for system administrators with an overall responsibility for maintenance of the network, including installation and distribution of software to the workstations.

## Technical support

Norman provides technical support and consultancy services for NVC and security issues in general. Technical support also comprises quality assurance of your anti-virus installation, including assistance in tailoring NVC to match your exact needs.

Note that the number of services available will vary between the different countries.

Check the Norman web sites for more information. Click on the Norman icon in the system tray and select **Contact information** from the menu to display a list of Norman's subsidiaries and distributors.

# Prerequisites

To take full advantage of all the functions in Norman Virus Control, you should have a good understanding of the different modules in NVC and how they work together. Please refer to the NVC manual *Reference Guide* for more details.

In addition, you should have detailed knowledge about the operating system(s) on servers and workstations as well as the network installation in your organization.



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# Installing NVC in a network

## Read this before you install

If you follow the instructions in this manual carefully, you will find that the new version is vastly improved also with regard to installation, distribution, and maintenance. For these purposes, adequate administration tools are provided.

## Uninstalling previous NVC versions

Regardless of platform, the installation program will remove earlier versions of NVC (NVC v4.7x or v4.8x) if they are detected during setup. Anyway it is wise to remove shares on folders in earlier NVC installations before running setup.

If you're running the distribution program N\_DIST, make sure that you remove all N\_DIST entries from the login script.

## Installation overview

Installing NVC involves running the setup procedure, distribution, and preparation before use. On the next pages you'll find detailed procedures for all these tasks. We recommend that you follow the procedures closely.

The procedure includes running a test installation on a designated machine before you distribute the program to all workstations, and how you use the tools *SelfXWiz* (see page 52) and *NDesk* (see page 31) to distribute NVC to Windows 95/98 and Windows NT/2000/XP workstations, respectively.

Any anti-virus program needs frequent updates. NVC provides *Norman Internet Update* (NIU) for this task.

**Note:** Before you run NIU for the first time, you must run *NIUcf*. Please refer to page 52.

# Zanda - Norman's distribution agent

The agent, `zanda.exe` – short for Zero Administration Network Distribution Agent, deserves special consideration. Even though it is relatively unnoticeable, it is the backbone of NVC and fundamental to basic functions of the program, like installation/distribution and updates. The agent resides locally, i.e. on the workstation, and should always be running. It fetches software updates as well as new configuration and task files, and ensures that the installation and configuration is in accordance with the administrator's specification for each and every machine in the network.

## Update intervals and network traffic

Software updates are replicated from the distribution server about 3 minutes after you log in, then once every hour on workstations and once every 5 minutes on distribution servers. Configuration and task files are replicated every 5 minutes. These are the default settings, but as of NVC v5.5 you may configure other update schemes.

⇒ The LAN/WAN section for the **Installation settings** module in the *Reference Guide*.

The 5 minute interval may give an administrator the impression that network traffic increases significantly, but it does not. The check for updates consists of a timestamp check, where software or distribution and task files on the distribution server are compared to those residing locally. Then any available updates are downloaded. The CPU usage on the distribution server is minimal; the bandwidth usage varies with the size of the updates, but will hardly be noticed. Update checks are always carried out asynchronously, to avoid a situation where all machines log on the server at exactly the same time.

## eLogger

If you run into a distribution problem or receive error messages from Zanda, `eLogger.exe` (located in `...\norman\NVC\bin`) is a handy tool for monitoring the agent.

See 'Using eLogger' on page 87 for more details.

## Zanda—updating and user privileges

Zanda “rides” on the credentials (user name and password) of the currently logged on user. There are two requirements for successful updating:

1. The users must have *read access* to the share where NVC is installed on the distribution server.
2. To avoid that machines that are *logged off*—but not *turned off*—miss updates, it is imperative that you create an NVC user account in your domain or on your server. Set up and define this account in the configuration as described on page 20. Else Zanda will not be able to log on and fetch updates during non-working hours, or if a logged on user for some reason doesn't have read access to the Norman share. This may in turn become a major security hole.

In versions prior to NVC v5.5, Zanda required its own logon in order to update Windows NT4/2000/XP installations. As a consequence, Zanda's operations made approximately 20% more connections to the server than the actual number of concurrently logged on users. The new update scheme is both faster than in previous versions, as well as the new design eliminates the connection problem.

## Zanda—updating from different distribution servers

As of NVC v5.5 a new switch for Zanda enables roaming users to update from different distribution servers using environment variables. The new switch is `/setenv`:

**Example:** The site where NVC is installed consists of several buildings—A, B, and C. All users in the network have their own laptop. Sometimes they work in Building A, sometimes they

work in building B. When working in Building A, the laptop should update from the server in Building A. When working in Building B, the laptop should update from the server in Building B.

To manage this, you may issue the following command in the login scripts of Building A and B:

Building A

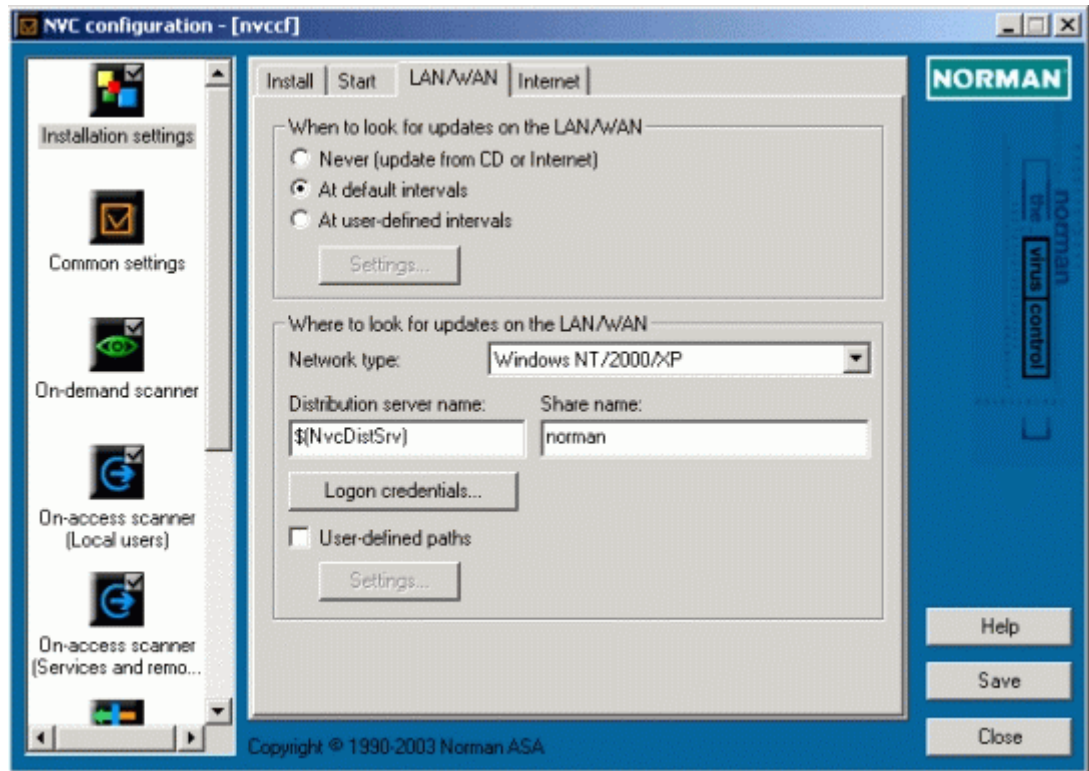
```
C:\Norman\Nvc\Bin\Zanda /setenv:NvcDistSrv=SrvBuildingA
```

Building B

```
C:\Norman\Nvc\Bin\Zanda /setenv:NvcDistSrv=SrvBuildingB
```

The path to Zanda is of course dependant on the target directory you have selected for NVC on the clients. The default is `c:\norman`, but you may well use `d:\norman` or `c:\Program Files\Norman` instead.

The field for **Distribution server name** in the network configuration file, `default.ndf`, must then contain the name of the environment variable like this:



## ISDN routers and NetBIOS

The agent can be configured to fetch updates (software, configuration, and tasks) from a share on the network (e.g. from `\\<Server name>\<nvc share>\. . .`). If the server (server name) is available on the network through NetBIOS, all is well, but if the server is down or the server name is misspelled in the configuration file, Windows will perform a DNS lookup on the server name. If Windows is configured to use a DNS server outside the LAN, Windows will route the DNS lookup through the gateway. If this gateway happens to be an ISDN router, a phone call connection will be established.

Unfortunately, it is not possible to turn off NetBIOS over TCP/IP in Windows 95/98/Me. In Windows NT/2000/XP/2003 this setting is default "on". However, most ISDN routers can be

configured to ignore NetBIOS over TCP/IP packets. If this is not possible, it is necessary to confirm that the configuration of NVC is correct, to use a DNS server on the LAN, or to make an entry in the hosts file (e.g. 127.0.0.1 Server name). The last two methods should also handle servers temporarily off-line.

To avoid useless connections through an ISDN router, which may result in oversized phone bills, it's imperative that you confirm that the NVC configuration is correct - both for the tab **LAN/WAN** (in "Installation settings") and for **Message routing**.

You may experiment from a DOS prompt when the router is passive to confirm that Zanda's activities don't activate your router. Log on to a workstation as the NVC user and try to copy a file from the UNC-path

```
\\<Server name>\<share name>\distrib\download.
```

If this activates the router, you have to investigate your NVC and NetBIOS settings further.

## NJeeves

NJeeves is a module introduced in NVC v5.3. The name is inspired by the celebrated comedy *Jeeves and Wooster*. Mr. Jeeves is the egghead providing the right answers and solutions to save Wooster when he runs into trouble. NJeeves has relieved the agent, Zanda, from several of its previous tasks:

## Quarantine maintenance

On an hourly basis, NJeeves makes sure that NVC's quarantine folder is OK. It calculates the size of the quarantine folder, and checks that the maximum size specified in the configuration file is not exceeded. If so, NJeeves will remove files that have been quarantined for longer than the minimum time. NJeeves also checks the time stamp for files in the quarantine area, to assure that no files are stored here longer than the maximum time specified in the configuration file.



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## Message handling

NJeeves is also in charge of NVC's messaging system (see 'Messaging' on page 99). It acts as a server listening to port 2868 for messages. Don't worry if your firewall asks to accept NJeeves as a server. In fact, you must accept this request, or else everything using the messaging system will be blocked. This includes NDesk, E-mail, SMS and SNMP in addition to NMP messages (NMP=Norman Message Protocol). Another of NJeeves' tasks is, on an hourly basis, to make sure that the message catalog, "...\\norman\\msg", doesn't contain expired messages.

## NDQ

NDQ (NDesk Query) is a command line utility introduced with the NVC v5.3 *Administration tools*. With NDQ you can query NVC installations to acquire information about NVC components and their state, for example check that virus definition files are up-to-date all over the network. NDQ is installed in the ...\\Norman\\NVC\\Bin folder if you select the *Administration tools* during installation (only available for corporate users).

### Usage

Create a log file from the logon script:

```
\\server\norman\nvc\bin\ndq.exe %computername%  
>\\server\logs\%computername%.log
```

Query one particular computer in the network:

```
c:\norman\nvc\bin>ndq.exe computername /verbose  
or  
c:\norman\nvc\bin>ndq.exe ip-address /verbose
```

## LNQ

LNQ (Local NDesk Query) is a command line utility introduced with NVC v5.7. Like NDQ, you can use LNQ to query the local

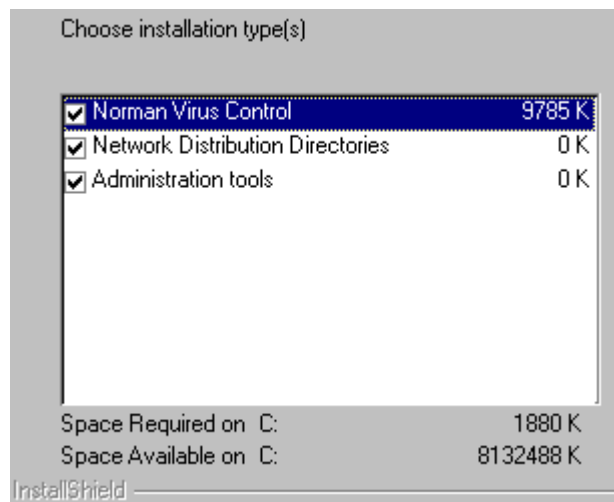
NVC installations to acquire information about NVC components and their state, for example check that virus definition files are up-to-date. LNQ is installed in the . . . \Norman\NVC\Bin folder. As LNQ does *not* use the built-in NVC messaging system—NPT—it can only be used for local queries. A primary difference between LNQ and NDQ is that the latter employs NPT to retrieve the information and thus can obtain it over the network. You should use NDQ if you want to query other computers in your network.

LNQ is a fast and efficient tool and may be used to collect status information from all computers in the network. You may for example compare collected information with a template (Norman does not provide applications for this purpose), and take action when NVC installations in your network don't comply with the template.

# Installing and distributing on NT server

## Installing NVC on a server in a NT domain

1. Run setup and follow the instructions on the screen. Make sure you enter the corporate key in the **Authentication key** field.
2. During setup you can choose to install Norman Virus Control, Network Distribution Directories and Administration tools. We recommend that you select all three alternatives.



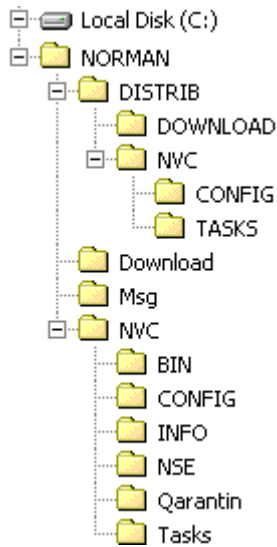
The ***Network Distribution Directories*** option will install the following folders:

...\distrib

...\distrib\download - Containing all software to be distributed in the network.

...\distrib\nvc

...\distrib\nvc\config - Containing the default



configuration file for the network. In this folder you may later add diverse configuration files for specific users or groups. For details, see ‘Configuration’ on page 90.

... \distrib\nvc\tasks - Where scheduled tasks created using the **Task Editor** are placed.

The **Administration tools** option will copy the programs *SelfXWiz*, *NDesk*, and *NIUcf* to the ... \nvc\bin folder. You will need these files later in the installation process to update and distribute NVC.

Your complete directory structure for NVC should now look like the illustration in the margin.

3. Create a share of the target directory that you specified during setup. Default is c:\norman.
4. Create a user for NVC in your domain/on your server. This user will log on the distribution agent transparently from all computers with NVC installed in order to keep the installation updated. The user must have the following properties:

☒ **User Cannot Change Password**

☒ **Password never Expires**

Make sure that you *don't* select **User Must Change Password at Next Logon**. However, you must define a password because the distribution server does not accept a blank password.

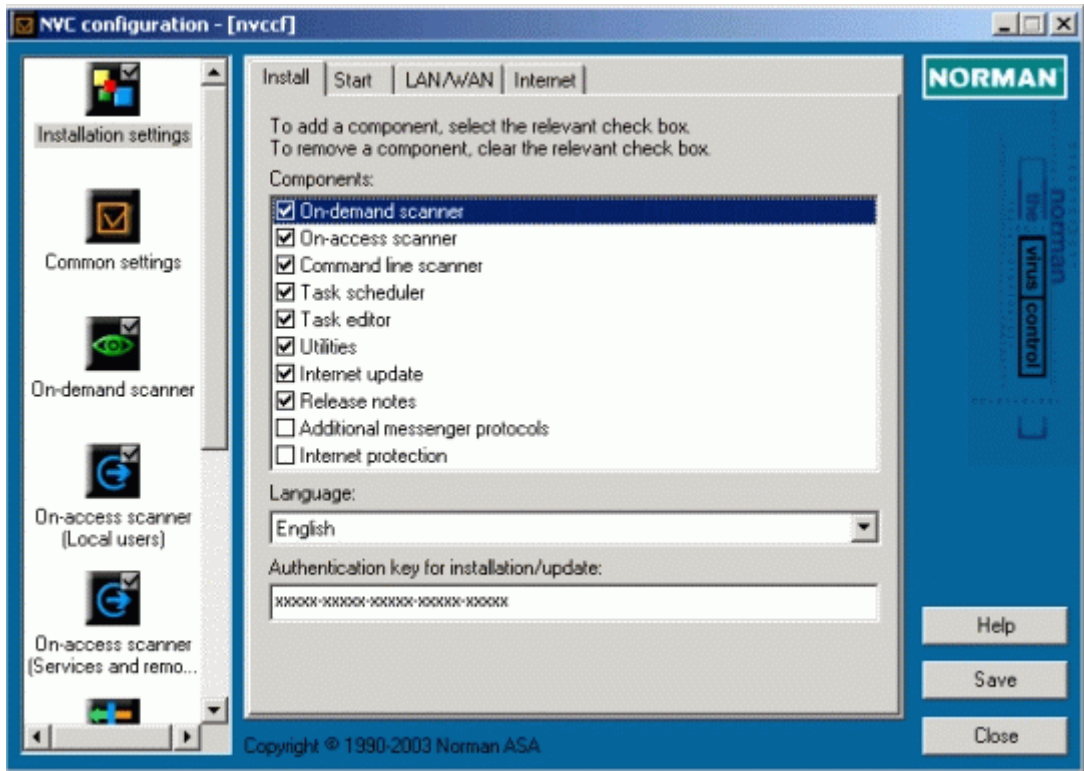
The NVC user should be granted read permission to the share you created in step 3.

The groups “Everyone” and “Domain Users” must have Read access.

In addition, you should give full control to the Administrator.

5. From the root of the Norman directory (specified as Target directory during setup) ... \distrib\nvc\config, double-click the file `default.ndf`.

6. From the **Installation settings** module, select the **Install** tab. Make sure that the authentication key matches the one you entered in step 1.



7. In the tab **LAN/WAN**, select *Windows NT/2000/XP/2003* as network type, and specify distribution server and share name. If you for example enter *nvc5server* as distribution server name, and *nvc5share* as share name, NVC automatically resolves the information like this:

**Software:**

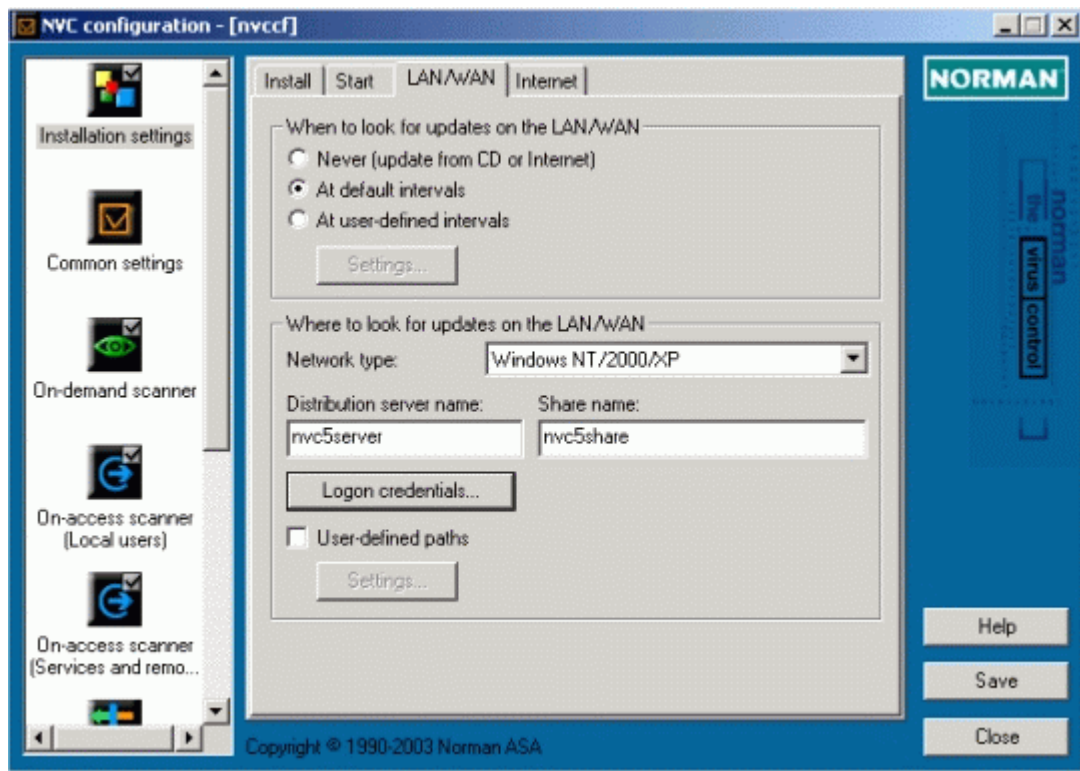
\\nvc5server\nvc5share\distrib\download

**Config:**

\\nvc5server\nvc5share\distrib\nvc\config

**Tasks:**

\\nvc5server\nvc5share\distrib\nvc\tasks



8. Click on **Logon credentials** and enter the same information as you did in step 4.
9. Select possible other configuration options you want to include. Note that there are no default values for **Message routing**. See the *Reference Guide* for details.
10. Save the configuration file (default.ndf).
11. Run the Niucf.exe file from the local [NormanPath] \Nvc\Bin folder and follow the instructions on the screen.  
Make sure that you include all platforms, products and NVC languages in the network. See also 'NIUcf' on page 25.
12. Run **Internet Update** by selecting Start|Programs|Norman Virus Control|Internet Update.

**Note:** After updates have been downloaded, you should always wait for 10 minutes before you run a manual virus scan on the server. The agent needs this time to unzip and install the updates. A scan that is performed during this interval will therefore use the old virus signature files. If a scan is started while the agent is trying to update the files, the server **must** be rebooted in order for the new files to be installed.

## Why is reboot sometimes required?

Updating NVC is normally done without any user interaction. A run-of-the-mill update comprises an updated scanning engine and signature files. The characteristic update happens behind the scenes, transparent to the user.

From time to time, however, other modules are also included. Even on such occasions, the NVC agent (Zanda) usually supervises the update without involving the user.

On rare occasions, however, NVC will notify the user that a reboot is required to complete the update. This happens when Zanda detects that it cannot stop a module that is flagged for update. These are the situations that trigger a reboot:

1. There is a new version of Zanda itself. The only way to replace the running Zanda, i.e. update itself, is to reboot the system.
2. There is a new version of the filter driver. The On-access scanner on Windows NT/2000/XP/2003 applies a file filter driver to monitor file operations. The architecture of Windows NT/2000/XP/2003 does not allow file filter drivers to unload themselves. When they are loaded they will run until system shutdown. A reboot is thus the only way to perform update on a loaded file filter driver.
3. Zanda cannot update an active component. During an update any open NVC consoles are not automatically closed, and an open console is by definition “in use”. Therefore, make it a habit to close all NVC consoles after use to avoid unnecessary reboot situations.

4. NVC's *Reference Guide* describes how Norman Internet Protection (NIP) is inserted in winsock processes through NIPHK.DLL. Some applications, like Instant Messaging software and IRC, are constantly active. Such applications may not let NIP "unhook" until the application is closed, not even when Zanda has instructed NIP to unload. That's when the problem arises - when an update arrives, a situation as described in #3: Zanda cannot update an active component. In this case because a hook mechanism may be in use at the time, namely NIPHK.DLL. If it is busy it will block the update and force a reboot.

You should therefore consider the need carefully for using NIP on:

- Mail servers, mail gateways and servers in general
- Installations considered critical to reboot

The only way to be sure that NIP does not invoke a reboot, is to keep it away from the server. As suggested in the Reference Guide, NIP is primarily a workstation module.

Whenever an updated version of NVC that requires a reboot is in the offing, you will be notified in advance by a special edition of NVC's Release Notes that pops up on the screen.

## Automatic updates

It's strongly recommended that you update NVC on a regular basis. In networks with direct/router based connection to the Internet, follow the steps below to fully automate the update process. (The server will now download updates for itself as well as other servers and workstations in the network where NVC is installed.)

1. Open the local configuration file for the server, `nvccf.ndf`, by selecting Configuration Editor from the tray icon menu or by double-clicking on `nvccf.ndf` in the `...\Norman\Nvc\Config` folder.
2. Go to the tabbed dialog **Internet** in the Configuration editor and select
  - **On direct connection at specified times.** Enter the desired scheduled time.



3. If there is a firewall or proxy server in the network, enter the necessary information in the tabbed dialog **Internet**.
4. Save the new settings.

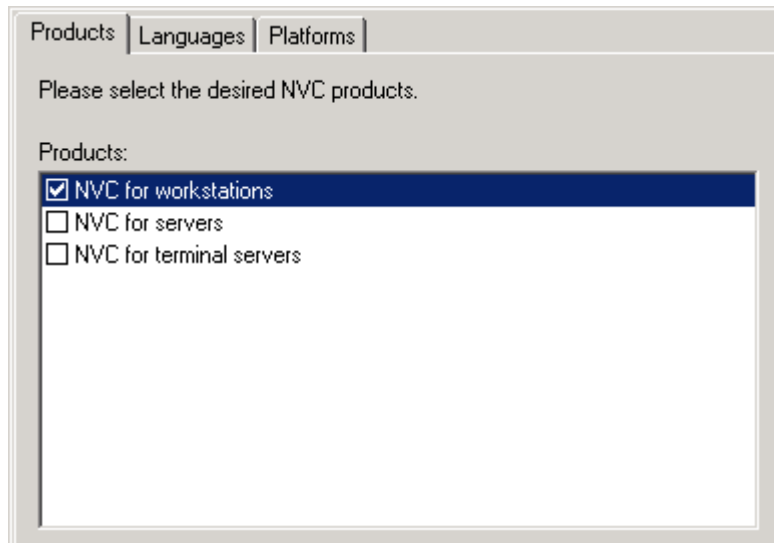
## NIUcf

*Norman Internet Update* (NIU) is a program that checks Norman's product server for new or updated products. Refer to the *Reference Guide* for more information on this program.

In a network, you must run the program `niucf.exe` before you run NIU for the first time. When you run NIUcf, a file called `niucf.ndf` is created in the folder `...\nvc\config`. This file is an ordering form where all necessary information about platform, language and products is stored. NIU makes sure that everything in the file appears on the list for eligible updates, provided that your licence covers the ordered items.

### Products, languages, and platforms

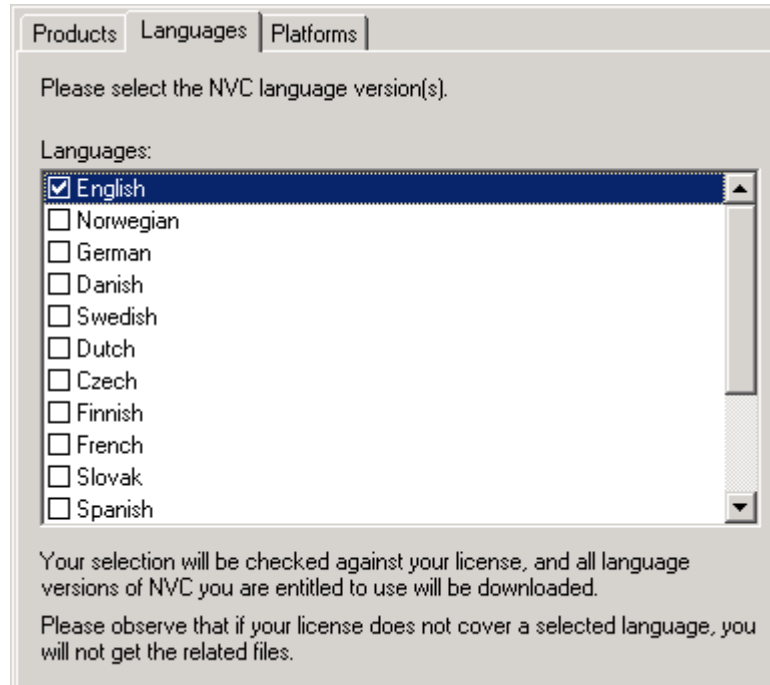
Specify which products you wish to update by selecting from this list:



The screenshot shows a dialog box with three tabs: "Products", "Languages", and "Platforms". The "Products" tab is selected. Inside the dialog, there is a text prompt "Please select the desired NVC products." followed by a section labeled "Products:". Below this, there is a list of three items, each with a checkbox: "NVC for workstations" (checked), "NVC for servers" (unchecked), and "NVC for terminal servers" (unchecked). The "NVC for workstations" item is highlighted with a blue background.

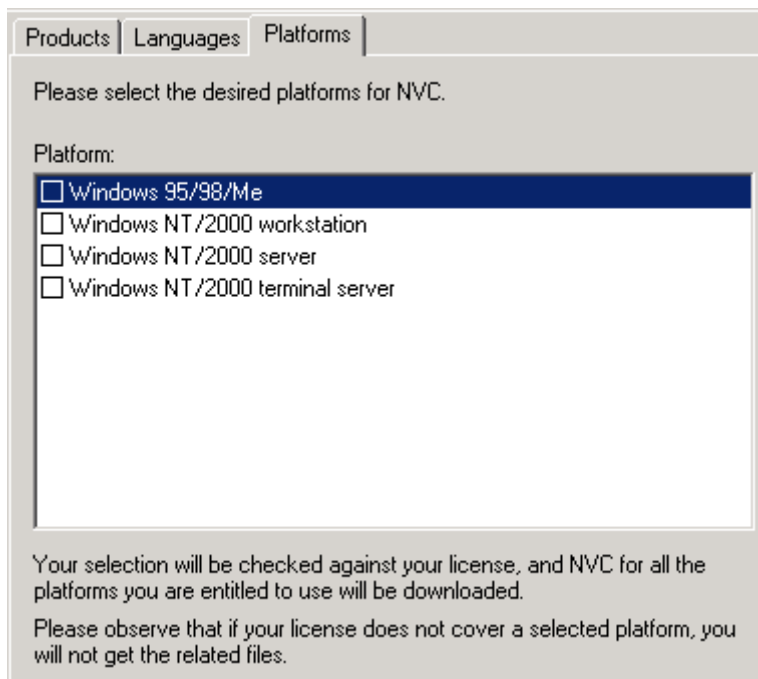
### Languages:

The current release is available in many different languages. New languages are added at irregular intervals. Contact your Norman dealer for information about NVC in your language.



**Platforms:**

Specify which products you wish to update by selecting from this list:



The screenshot shows a window with three tabs: 'Products', 'Languages', and 'Platforms'. The 'Platforms' tab is selected. The text inside the window reads: 'Please select the desired platforms for NVC.' Below this, there is a label 'Platform:' followed by a list of four options, each with a checkbox. The first option, 'Windows 95/98/Me', is highlighted with a blue background. The other options are 'Windows NT/2000 workstation', 'Windows NT/2000 server', and 'Windows NT/2000 terminal server'. At the bottom of the window, there is a paragraph of text: 'Your selection will be checked against your license, and NVC for all the platforms you are entitled to use will be downloaded. Please observe that if your license does not cover a selected platform, you will not get the related files.'

Whenever you wish to make changes to any of the three groups, you must run NIUcf again to update the list. Depending on the changes, you may have to change your licence agreement to get access to other components.

## Distributing NVC to Windows 95/98/Me workstations

Regardless of platform, the installation program will remove earlier versions of NVC (NVC v4.7x or v4.8x) if they are detected during setup.

If you're running the distribution program N\_DIST, make sure that you remove all N\_DIST entries from the login script.

**Note:** You can also use this procedure for Windows NT/2000/XP/2003 if the users have local administrator's rights.

SelfXWiz is a wizard that assists you to create the initial package that will be distributed to all machines. If you wish to use a tree structure for distributing NVC, you need to create different initial packages for different locations in the tree where a package should be installed.

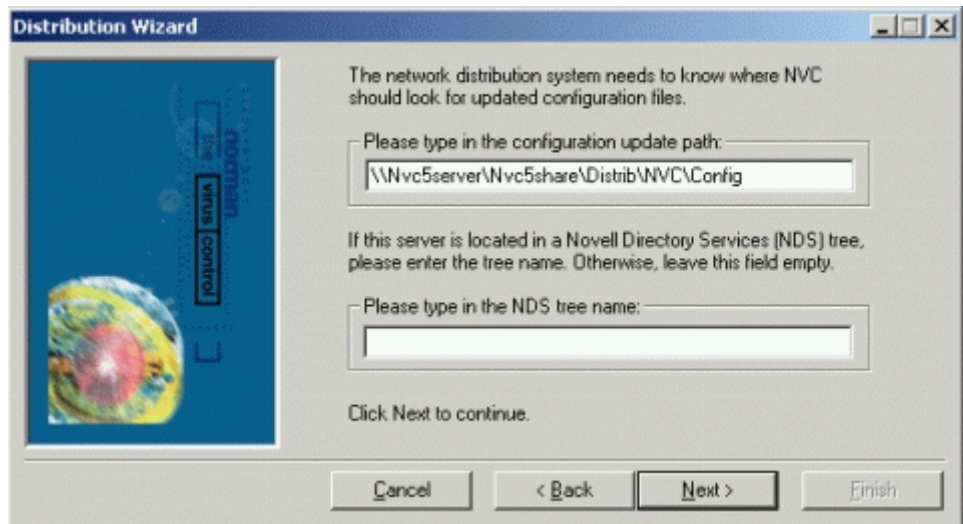
This procedure uses the program SelfXWiz to create a self extracting distribution file. SelfXWiz will use the file `nvcz0001.zip`, which must reside in the `distrib\download` folder locally or on the server.

**Note:** The values suggested by the wizard are only examples. The examples serve the purpose of informing you what kind of information that is requested, as well as the correct syntax. You must enter your system's actual server names etc. yourself whenever system specific information is needed. Do not click the **Next** button until you have verified that the present information is correct.

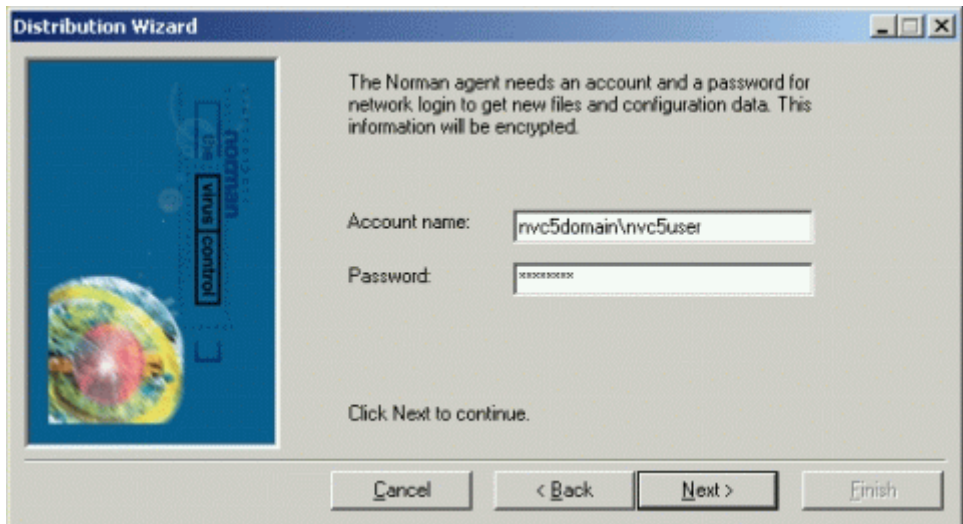
1. Run `selfxwiz.exe` from `<norman>\nvc\bin` and follow the instructions on the screen. When the wizard asks for configuration update path, make sure that you enter exactly the same path as displayed in the field Update configuration files from. This path appears when you select **User defined paths** and click **Settings** in the tabbed dialog **LAN/WAN** in the network configuration file (`default.ndf`):

Update configuration files from:

`\\nvc5server\nvc5share\distrib\nvc\config`



2. The account name must be entered with the correct syntax.



3. An .exe file is created when you are done. You can decide the file name yourself (default is nvc5w32.exe). This file is intended to be run from the login script.

4. Run this executable file from a machine where you want NVC installed.  
Wait for approximately 10 minutes.  
NVC should now be installed, possibly with an instruction to reboot. If installation fails, go through the entire procedure and make sure that all the information you have entered is correct.
5. When you have established that NVC installs correctly, update the login script to run `nvc5w32.exe` or whatever you specified as file name in step 1.
6. For users who employed `N_DIST` for distribution in earlier NVC versions: replace the line in the login script that refers to `N_DIST` with the name of the executable file.

### Verify that NVC is installed:

Check that the *Norman Virus Control* appears on the Start menu and that the Norman icon is in the system tray. If you click this icon you will see some menu options. Select **Active components**. By default, “Agent”, “On-access scanner”, “Task scheduler”, and “Messenger and other services” should be on the list.

**Note:** In client's terminal sessions on terminal server installations you will not find this icon. The check above should therefore be performed on the server console on such installations.

7. If installation fails, go through the entire procedure and make sure that all the information you have entered is correct. You will probably find some useful hints on Norman's web site or in the troubleshooting section later in this chapter.
8. When you have established that NVC installs correctly, update the login script to run `nvc5w32.exe` or whatever you specified as file name in step 1.
9. For users who employed `N_DIST` for distribution in earlier NVC versions: replace the line in the login script that refers to `N_DIST` with the name of the executable file.

---

## Using NDesk to administer NVC

NDesk is a tool for administering a network installation of NVC5 from a single workstation, including remote installation on the Win NT/2000/XP/2003 platform.

Important notes about NDesk:

1. You can only use NDesk to **distribute** NVC to Windows NT/2000/2003 and Windows XP Professional machines.
2. NDesk can only **run** on a Windows NT/2000/XP/2003 machine.
3. However, NDesk can **administer** and **monitor** Windows 9x workstations as well as NT/2000/XP/2003.

Based on the requirements above, the primary functions that NDesk offers are:

- NVC Remote installation on the NT/2000/XP/2003 platform
- Monitor NVC installations on *all* Windows machines
- From one central point, you can run updates, start scans etc. from the right-click menu
- NVC Configuration management
- NVC Task file management

Each of these functions can be performed from one of the three tabbed dialogs that are displayed when the application starts.

The following sections will explain how you can use NDesk to install NVC to Win NT/2000/XP/2003 machines, and how you can administer configuration and task files in the network from one single point.

### NDesk vs PushWiz

If you distribute NVC to Windows NT4/2000/XP/2003 machines in a network where the ping functionality is enabled, NDesk is the recommend distribution tool. If ping is disabled, and you for some reason don't want to enable it, you must install NDesk's predecessor PushWiz. Download `Pushwiz.zip` and unzip the file to the `\Norman\NVC\Bin` folder. PushWiz is described in

Appendix A (Distribution from NT servers) on page 111 and Appendix B (Distribution from Novell Netware servers) on page 114. You can download PushWiz from [here](#).

## Installation

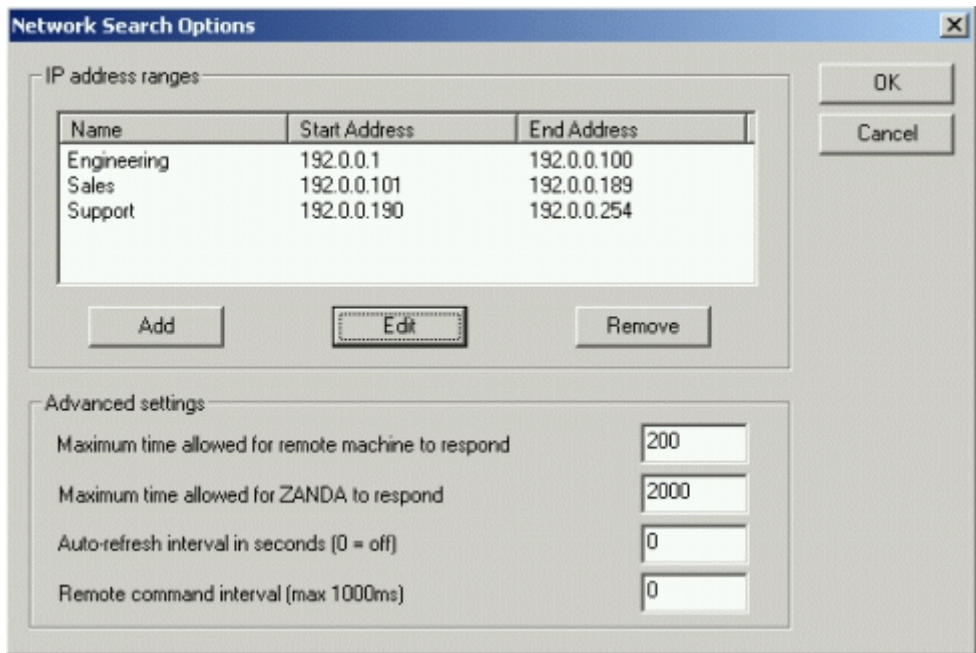
For NDesk to run successfully, the following prerequisites have to be met:

- Microsoft Windows NT, Windows 2000, Windows 2003 or Windows XP Professional edition must be installed on the machine where NDesk is running.
- NVC message routing must be enabled (select ☒ **Reply to broadcasts and enable message routing** in the module Message routing in the Configuration editor) for installation management functions to work.
- The currently logged on user must have (domain) administrator privileges.

**Note:** When installing across domain borders, the same rules as installing within Workgroups apply. It is an absolute requirement that the currently logged on user has local administrator privileges on the machine NDesk is running on. Also, the logged on user must have write access to the distribution share. In addition, identical users (same user name and password) must exist with local administrator privileges on all the target machines.



The first time NDesk (ndesk.exe) is run, you will see the dialog for specifying network search parameters:



This dialog allows you to refine the network search parameters that will be used for populating the list control.

NDesk has automatically calculated the first address range that is displayed from the machine's IP address and mask. You can change the values by pressing the **Edit** button. Additional ranges can be entered by pressing the **Add** button.

NDesk assigns default names to the address ranges, starting with `Network_1`, then `Network_2` etc.. You can specify names that are easily recognized instead.

The advanced settings allow further refining of the search efficiency by setting the ping and the Zanda (agent) check time-outs. By decreasing the ping time-out, the search can be performed more quickly but there is a danger that some machines may not appear in the list. By decreasing the Zanda time-out, the search can be performed more quickly but some machines may display an incorrect status.

NDesk can be configured to periodically refresh the installation page in the background. Use the **Auto-refresh** option to specify at what intervals NDesk should refresh. Note that during an auto-refresh, the options **Refresh list** and **Refresh selected** (see page 42) are disabled.

The **Remote command interval** is specified in milliseconds. In larger networks, the server may not be capable of handling **Update now** for numerous machines simultaneously. Therefore, you can define a throttle of x milliseconds and make the machines stand in line waiting for their turn to come. The default value is 0.

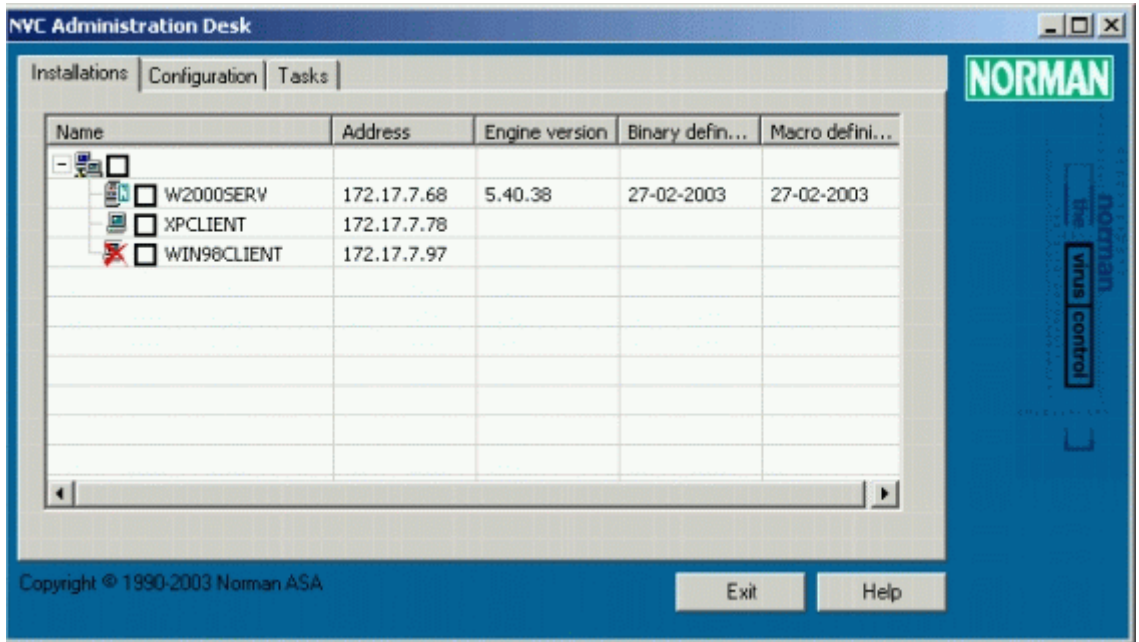
## Analyzing the network installation

When you have clicked **OK** in the Options dialog, a network search (“ping”) is launched. While the search is in progress, a blue eye is visible in the “Name” column.

**Note:** The network search is performed by first sending a ping to each address in the address ranges.

If the ping is successful, the machine at that IP address is checked for a running NVC service (Zanda). If the machine has a Zanda service running, the version and definition file dates for NVC 5 are displayed in the list. This provides an immediate record of the installation status of NVC across a network, as you can see in the figure below.

If you have specified more names and address ranges, they will appear in this dialog as a tree structure.



For all items on a list like this, you can view the IP address, the engine version, and the creation date for the **Binary** and **Macro** definition files. In addition, the illustration clearly shows that

- W2000SERV is a server where Zanda is installed and that is working normally.
- XPCLIENT has no Zanda installed, but this is Windows NT/2000/XP/2003 machine and eligible for NDesk installation.
- WIN98CLIENT has no Zanda installed and it cannot be installed by NDesk. The red cross demonstrates that the Service Control Manager (SCM) is not found. SCM is a feature for Windows NT/2000/XP/2003 only, and the absence of SCM on WIN98CLIENT suggests that this is a Windows 95/98/Me machine and hence not eligible for NDESK installation.

The different status symbols you can receive are:



Zanda is running on this machine, and you can see the date and version number for the scanning engine, and when the binary and macro virus definition files were last updated.



Zanda is installed but cannot report status for NVC.



Zanda is not installed, but this is a Windows NT/2000/XP/2003 machine and eligible for NDesk installation.



Zanda is not installed and cannot be installed by NDesk. This is either a Windows 95/98/Me machine or a Windows NT/2000/XP/2003 machine with file and print services disabled. Unless file and print services are enabled, installation is not possible on Windows NT/2000/XP/2003 machines. In addition, the default shares for administrative use (i.e. IPC\$, C\$) must exist. Use SelfXWiz for remote installation of NVC5 on Windows 95/98/Me machines. See more on SelfXWiz on page 28 (NT server) and page 67 (NetWare).



A workstation that is awaiting a restart during an update.



A workstation with one or more components reporting install or update errors.



A server that is awaiting a restart during an update.



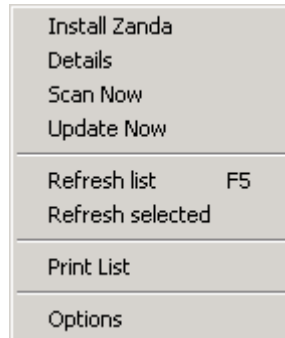
A server with one or more components reporting install or update errors.



A server that is working normally.

### Context menu

A context menu for this screen can be accessed by selecting a machines and clicking the right mouse button which provides the following functions.



### Install Zanda

Selecting this option launches a dialog to enter the information required to install NVC 5 to the selected machines.

**Install Progress**

Installation parameters

Account: Domain\Username

Password: [masked]

NDS Tree: [empty]

Distribution source: \\Servername\NVCshare

Target root folder (e.g C:\Norman): C:\NORMAN

☐ Overwrite existing NVC5 installations

The install parameters can be placed in a self-extracting installer file. This file can be run from a log-in script to install the Agent on non-NT machines. Press the Save button to perform this action.

Buttons: Install, Close, Help, Save

Machine Name	Status
--------------	--------

**Note:** If you try to install to a machine running Windows 95/98/ME, the following error message appears in the **Status** field:  
*Unable to install - not NT or WIN 2000*

### Account

Enter *domain\username*, making sure that the correct syntax is used (see illustration above). An account for the user name and password must exist in the domain and must have read access to the share on the server.

### Password

Enter the password for the domain/user specified in the **Account** field.

**NDS tree**

In a NetWare environment, you must enter the name of the NDS tree.

**Distribution source**

Enter the full path of the NVC server with a syntax like demonstrated in the illustration.

**Target root folder**

Enter the intended Norman root directory to be used on the remote machine. If this field is left blank, the program will default to C : \Norman.

**☐ Overwrite existing NVC5 installations**

Normally, an existing installation of NVC 5 or the agent Zanda cannot be overwritten. This can be overridden by selecting this option.

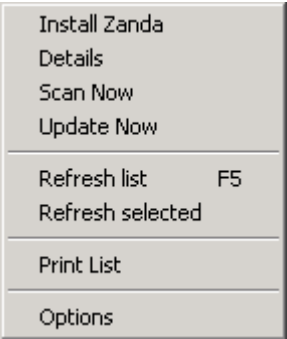
When you click on **Install**, NDesk will validate the information entered. If the information is valid, NDesk will install NVC to all the selected machines. Each selected machine will be listed in the list control and the installation status will be shown in the second column. The progress bar will appear for each installation taking place.

**Note:** The bar displays the progress of the installation of **Zanda**. After the agent is installed, it takes approximately 10 minutes before NVC is fully installed. Refresh the list to check that everything is OK. The first time NVC is installed, the program is not visible for the user until a logoff/logon has been performed.

**Save**

If you click **Save**, NDesk creates a self-extracting installer file with the parameters specified in this dialog. If you use this option, you don't need to use SelfXWiz (discussed on page 28). Note that the suggested name of the installer file created by the Save command in NDesk is identical to the name that is proposed for the SelfXWiz file—`nvc5w32`. If you have a packet created earlier that you want to keep, you must take appropriate action to prevent it from being overwritten.

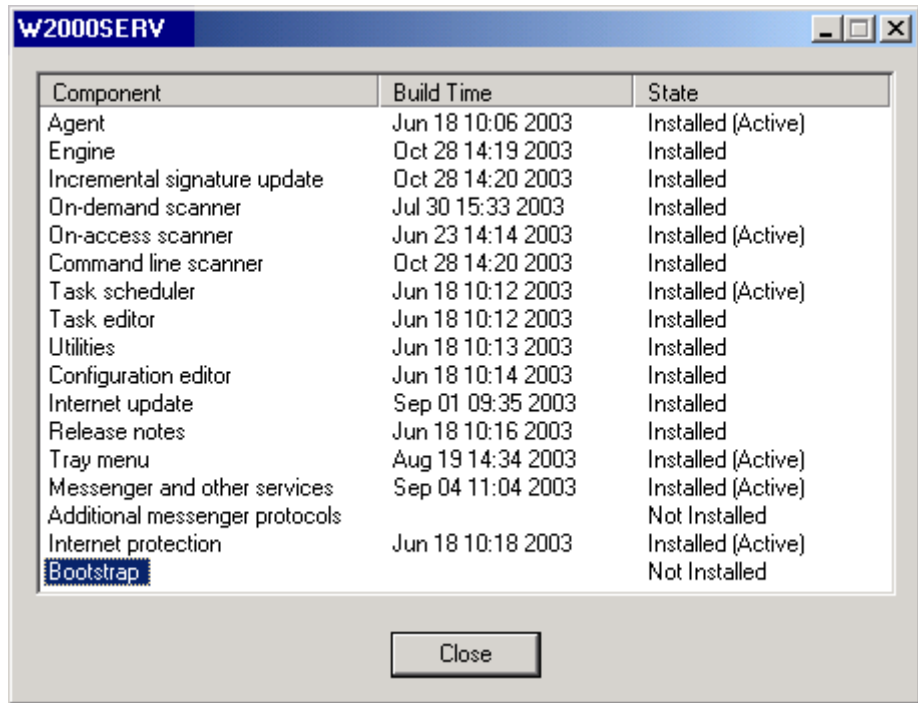
**Note:** You **must** have write access to the location where you want to save the new installer file to. No error message will warn if you select a location to which you don't have write access.



**Details**

Full details of the NVC installation on selected machines can be displayed using this option. Each installation report will be displayed in a separate dialog as shown below:





Component	Build Time	State
Agent	Jun 18 10:06 2003	Installed (Active)
Engine	Oct 28 14:19 2003	Installed
Incremental signature update	Oct 28 14:20 2003	Installed
On-demand scanner	Jul 30 15:33 2003	Installed
On-access scanner	Jun 23 14:14 2003	Installed (Active)
Command line scanner	Oct 28 14:20 2003	Installed
Task scheduler	Jun 18 10:12 2003	Installed (Active)
Task editor	Jun 18 10:12 2003	Installed
Utilities	Jun 18 10:13 2003	Installed
Configuration editor	Jun 18 10:14 2003	Installed
Internet update	Sep 01 09:35 2003	Installed
Release notes	Jun 18 10:16 2003	Installed
Tray menu	Aug 19 14:34 2003	Installed (Active)
Messenger and other services	Sep 04 11:04 2003	Installed (Active)
Additional messenger protocols		Not Installed
Internet protection	Jun 18 10:18 2003	Installed (Active)
<b>Bootstrap</b>		Not Installed

Close

The dialog displays **Build Time** and **State** for all components. The only four components that NDesk reports 'Active' as **State** is for the Agent, the On-access scanner, the Task Scheduler, and the Messenger and other services.

**Note:** Components that have not been selected will appear as "Not installed", for example 'Additional messenger protocols'. You select components from the Install tab in the **Installation settings** module. The exception is 'Bootstrap', which is a packet that the distribution tools employ initially during installation. It's only relevant for machines where the distribution tools are running. Since Bootstrap is not an optional component, it will appear as not installed.

### Scan now

Scan the hard disks on the selected machine(s).

**Update now**

Initiates updates from the NVC distribution server in the local network. *Do not confuse this option with NIU updates.* In a situation of virus epidemics, for example, **Update now** is a valuable function. The default interval for updates from distribution server is once an hour. In a worst case scenario of virus epidemics, this may be insufficient. However, do not request too many machines to run an **Update now** at the same time. In large networks you should use the **Remote command interval** option (see page 34) to avoid server overload.

**Refresh list**

Selecting this option triggers a new network search.

**Refresh selected**

Refresh only the selected items in the list.

**Note:** During an **Auto-refresh** (see page 33), the **Refresh list** and **Refresh selected** options are disabled.

**Print list**

Select this option to print the current list.

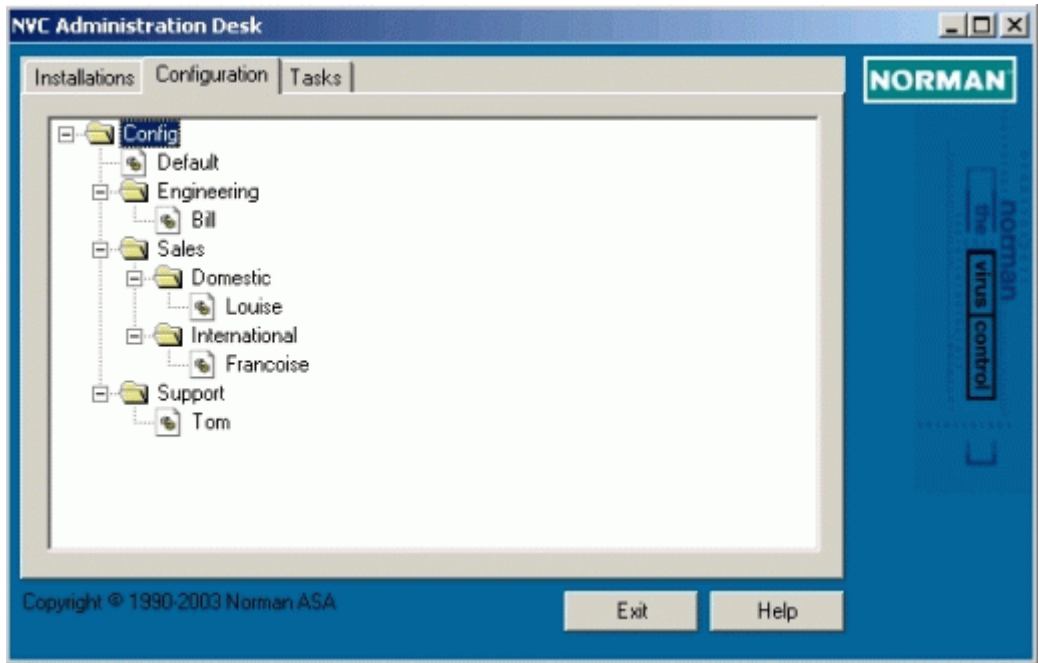
**Options**

You can manage address ranges by selecting this option. The **Network Search Options** dialog (page 33) is displayed. New ranges are added by pressing the **Add** button; existing ranges are edited by selecting a range and pressing the **Edit** button; ranges can be removed by selecting a range and pressing the **Remove** button.

## Configuration file management

NDesk cannot *install* on Win9x machines, but configuration files can be handled just as on Windows NT/2000/XP/2003 machines.

Each installation of NVC 5 can be configured separately from a central point. These configuration files are stored on the distribution server and can be organized into groups by placing the files into a directory tree as shown here:

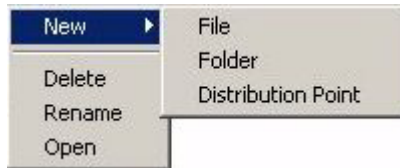


**Note:** Each configuration file is named after the machine to which the configuration applies. The only name that can be duplicated is the `default.ndf`.

When a machine's agent - Zanda - searches for a configuration file, it looks in the Config tree for a file with the same name as the machine. If that is unsuccessful, the nearest `default.ndf` is used.

Configuration files and folders can be moved using drag and drop on the tree control shown in the figure above. A context menu is also available by selecting an item and clicking the right

mouse button. The context menu provides the functions described below.



### **New**

Select this option to create a new configuration file, folder or distribution point. If a new file is being created, the file name must be unique. To create a new distribution point, you must right-click the *root* of the Config folder. The new folder is empty, so you must remember to create a configuration file for the new distribution point.

### **Delete**

A configuration file or folder can be deleted using this option.

### **Rename**

A configuration file or folder can be renamed using this option. The file name must be unique

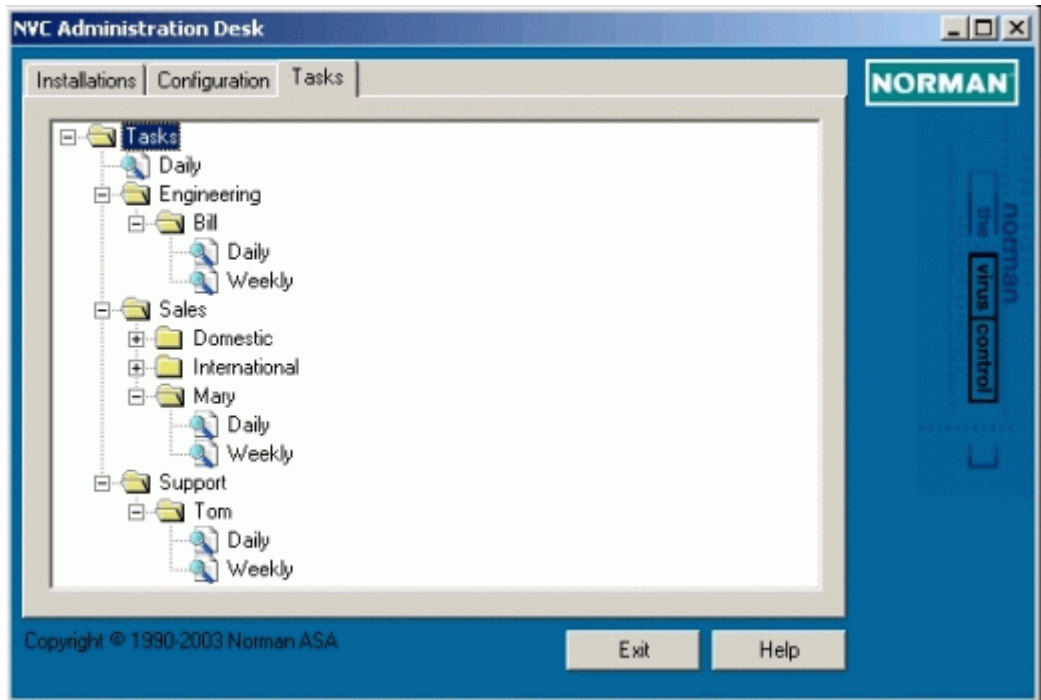
### **Open**

If the selected item is a configuration file, selecting this option will launch the configuration file editor.

## Task file management

NDesk cannot *install* on Win9x machines, but task files can be handled just as on Windows NT/2000/XP/2003 machines.

Individual on-demand scans can be scheduled and run from a task file. Any number of task files can exist for a machine. These files are organized in a similar fashion to configuration files with the exception that the task files are stored in folders whose name follows that of the machine on which these tasks are to be run. Because of this, the folder name must be unique:



As with configuration file management, files and folders can be moved using drag and drop on the tree control. The restriction here is that the machine folder names must be unique. A context menu can be activated by selecting an item and clicking the right mouse button. This menu provides the same function as configuration file management:

### **New**

A new task file or folder can be created using this option. If a new folder is being created, the name must be unique.

### **Delete**

A task file or folder can be deleted using this option.

### **Rename**

A task file or folder can be renamed using this option. The folder name must be unique

### **Open**

If the selected item is a task file, selecting this option will launch the task file editor.

## **Installing and distributing NVC in peer-to-peer environments**

You may also install and distribute NVC in peer-to-peer environments and client/server networks that are not domain-based. Characteristic for peer-to-peer networks is that each node may have both client and server capabilities.

The installation procedure for such networks is quite similar to the procedure in domain-based networks. These paragraphs therefore focus on things that are different from domains.

## **Using a Windows NT/2000/XP workstation as distribution point for NVC**

Check the following list of requirements and preparations before you start the installation:

- You must create an account for the agent on the workstation that operates as server for the NVC installation.
- You must be aware that the maximum number of simultaneous connections to shared resources on NT/2000/XP workstations is 10.

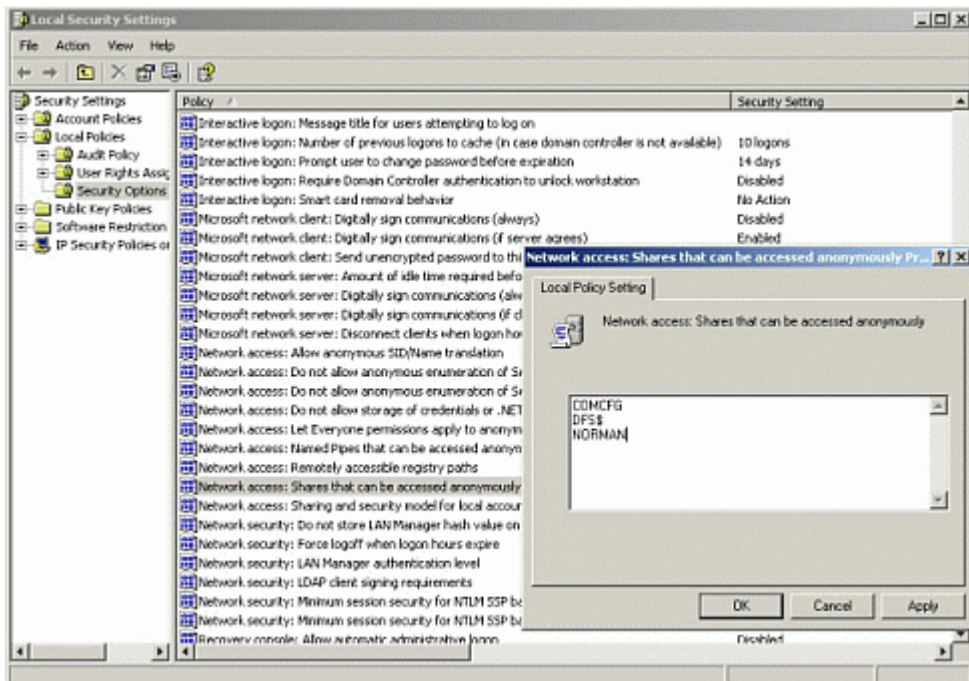
## **Installation procedure**

Please refer to 'Installing NVC on a server in a NT domain' on page 19 for directions regarding installation. Remember to select *Workgroup or peer-to-peer* as network type.

## File system considerations when distributing NVC from a Windows XP workstation

When installing Windows XP, the installation default suggests NTFS as file system. However, if you have chosen FAT32, you must create a nullsessionshare on the XP workstation that you intend to use as a distribution point for NVC:

- Open **Control Panel** (Start|Settings|Control Panel).
- Select **Performance and Maintenance** and then **Administrative Tools**.
- Select **Local Security Policy**.
- Expand **Local Policy** and select **Security Options**.
- Edit the setting for **Network access: Shares that can be accessed anonymously**, by adding the name of your Norman share like on the illustration





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## Using a Windows 95/98/Me workstation as distribution point for NVC

We do not recommend that you use a Windows 9.x workstation as distribution point if a Windows NT4/2000/XP machine is available for this purpose.

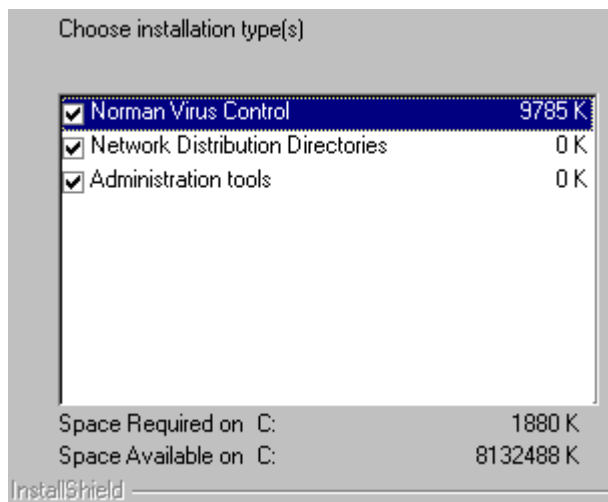
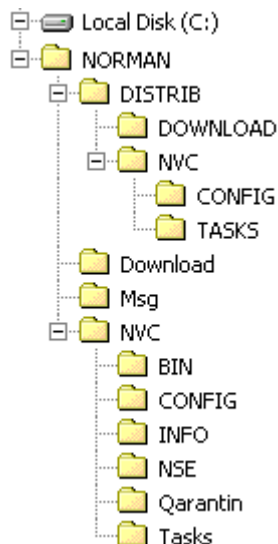
Make sure the following conditions are met before you start the installation:

- Enable file sharing in Windows.
- Give 'Read only' access to the Norman share, but don't password restrict this access.
- You must use SelfXWiz as distribution tool (NDesk/ Pushwiz) will not work.

The account that you define in Default.ndf and SelfXWiz is just a fictitious account in this scenario. It is not an account that you have defined—neither on the distribution 'server' nor on the clients that you are distributing to.

### Installation procedure

1. Run setup and follow the instructions on the screen. Make sure you enter the corporate key in the **Authentication key** field.
2. During setup you can choose to install Norman Virus Control, Network Distribution Directories and Administration tools. We recommend that you select all three alternatives.



The **Network Distribution Directories** option will install the following folders:

... \distrib

... \distrib \download - Containing all software to be distributed in the network.

... \distrib \nvc

... \distrib \nvc \config - Containing the default configuration file for the network. In this folder you may later add diverse configuration files for specific users or groups. For details, see 'Configuration' on page 90.

... \distrib \nvc \tasks - Where scheduled tasks created using the **Task Editor** are placed.

The **Administration tools** option will copy the programs *SelfXWiz*, *NDesk*, and *NIUcf* to the ... \nvc \bin folder. You will need these files later in the installation process to update and distribute NVC.

Your complete directory structure for NVC should now look like illustrated in the margin.

3. Create a share of the target directory that you specified during setup. Default is c: \norman. Give 'Read only' access to the share, and don't set a password.

4. From the root of the Norman directory (specified as Target directory during setup) `...distrib\nvc\config`, double-click the file `default.ndf`.
5. In the tab **LAN/WAN**, select *Workgroup or peer-to-peer* as network type, and specify distribution server and share name. If you for example enter *nvc5server* as distribution server name, and *nvc5share* as share name, NVC automatically resolves the information like this:

**Software:**

```
\\nvc5server\nvc5share\distrib\download
```

**Config:**

```
\\nvc5server\nvc5share\distrib\nvc\config
```

**Tasks:**

```
\\nvc5server\nvc5share\distrib\nvc\tasks
```

6. If you have Windows NT4, 2000 and/or XP workstations in your workgroup, you must insert a fictional **User name** and **Password** in the LAN/WAN tab (**Logon credentials** button) in `Default.ndf` and in the distribution wizard (`SelfxWiz`). Else, the distribution will not work on these platforms.

The screenshot shows a standard Windows-style dialog box titled "Network Logon Credentials". It has a blue title bar with a close button (X) in the top right corner. The dialog contains three text input fields stacked vertically. The first field is labeled "User name:" and contains the text "Username". The second field is labeled "Password:" and contains seven "x" characters. The third field is labeled "Retype password:" and also contains seven "x" characters. To the right of these fields are three buttons: "OK", "Cancel", and "Help". The "Help" button is highlighted with a dashed border.

7. Select possible other configuration options you wish to include. Note that there are no default values for **Message routing**. See the *Reference Guide* for details.
8. Save the configuration file (`default.ndf`).
9. Run the `Niucf.exe` file from the local `[NormanPath]\Nvc\Bin` folder and follow the instructions on the screen.

10. Run **Internet Update** by selecting  
Start|Programs|Norman Virus Control|Internet Update.

## Cascading distribution points

**Note:** This feature is available for Windows NT/2000/XP/2003 servers only.

From one server, you can make any other server in the network that is updated from this NVC server into a NVC distribution point.

While NVC v5.0 distributed NVC to other servers without making them NVC distribution points, you can now create subdirectories (see 'How it works' below) on the server you install to rather than physically access the servers you want to act as NVC distribution points.

The basic structure for distributing configuration and task files remains the same:

norman\distrib\download, where the zip files reside,  
and

norman\distrib\nvc\config, where all configuration  
files (.ndf) are placed.

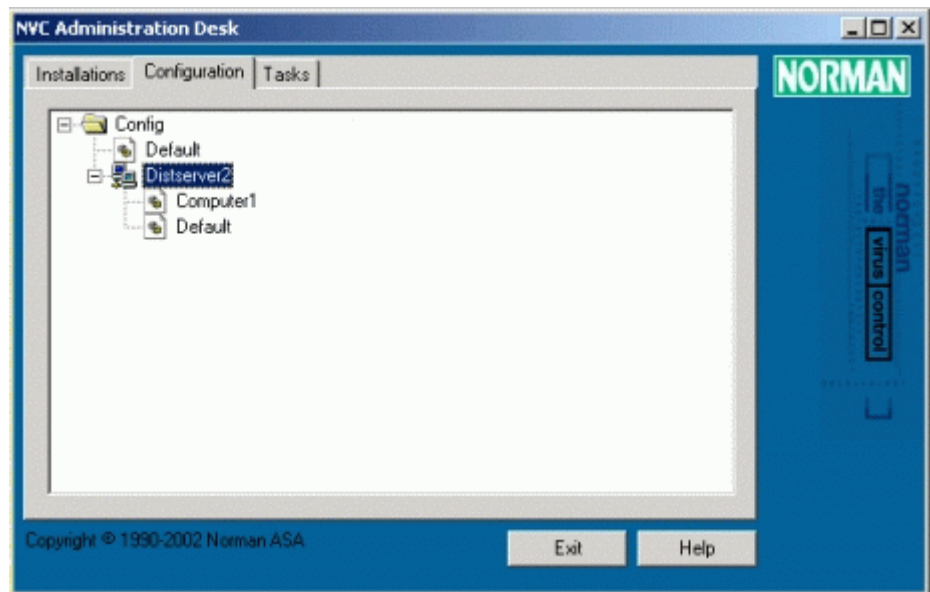
The same applies to ... \task and the .sdf files that reside here.

The new feature will copy the entire content of the subdirectory you create (see below) onto any server you wish.

## How it works

On the current NVC distribution server, where the administration tool NDesk is installed, follow this procedure:

1. Open NDesk and select the **Configuration** tab.
2. Right-click the location where you want a new distribution point and select New|Distribution point. Name your new distribution point, for example Distserver2, where 'Distserver2' is the name of the server where NVC is being installed and which – in turn – will become a new distribution server.
3. From the new distribution point you should create a default.ndf configuration file in addition to possible machine specific configuration files for PCs connected to 'Distserver2'. (See page 93.)



## How it works

1. All distribution points will appear in your folder structure as folders, all with names ending with '.s'.

**Example:** If your 'primary' distribution server is called 'Distserver1', 'Distserver2' will appear as a folder named 'Distserver2.s' in 'Distserver1's' ... \Distrib\Nvc\Config folder.

2. Once the folder 'Distserver2.s' is created on the current distribution server (Distserver1), the NVC agent detects the new '.s' subdirectory and downloads the entire content of Distserver1's ... \Norman\Distrib\Nvc\Config\Distserver2.s directory onto <Distserver2>.
3. In this process, the NVC agent instructs <servername1> to act as a NVC distribution point.
4. When - in turn - the clients of Distserver2 log on, they will look for their NVC updates (software, configuration, and tasks) in the ... \Norman\Distrib\... folder on Distserver2.
5. You may well include servers further down in the hierarchy. Under the 'Distserver2', you can create a new distribution point, 'Distserver3', and so on. Remember to include necessary information like configuration and task files for the clients of Distserver3 etc.
6. For task files; follow the same procedure and create distribution points from the tabbed dialog **Tasks** in NDesk.

**Note:** The process of creating new distribution points is not reversible from the top server of the hierarchy, only from the newly established NVC distribution point servers.

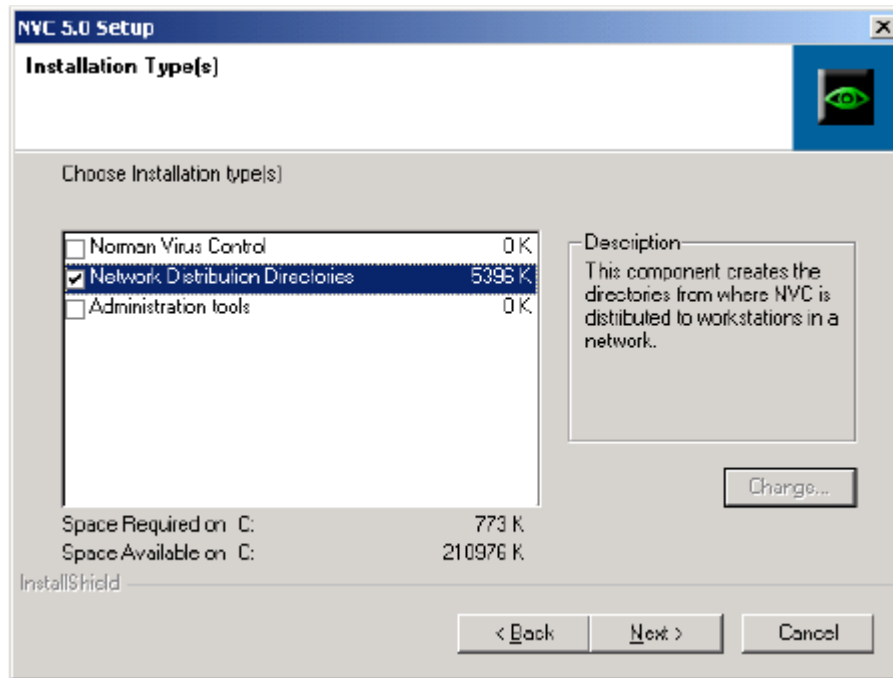
# Installing and distributing on Novell NetWare

## Installing NVC in a Novell NetWare network

**System requirements:** The workstations must run Novell's NetWare client rather than the Windows version to ensure a successful installation.

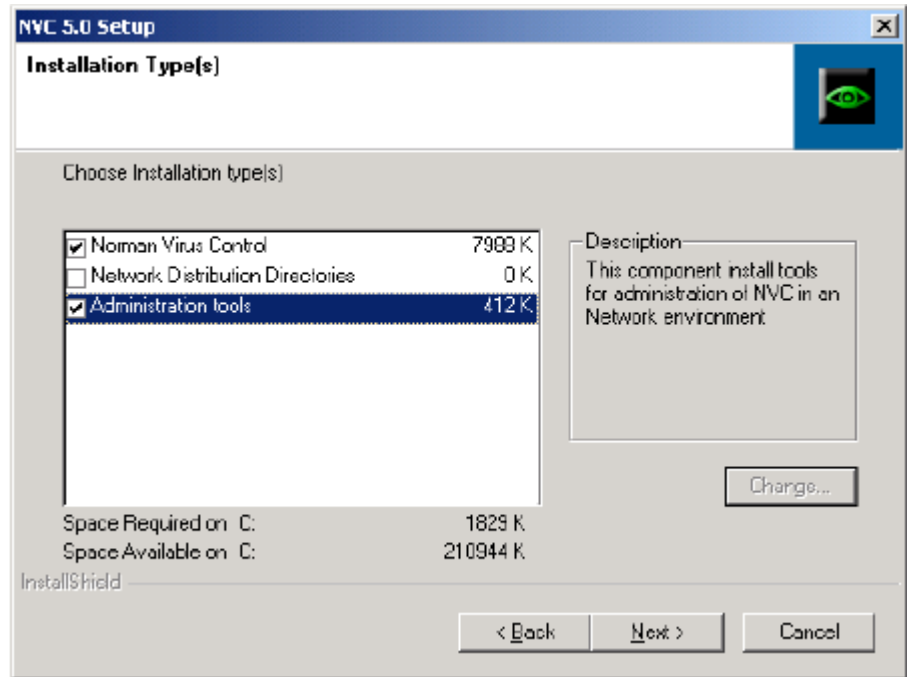
**Note:** As described below, this procedure requires that you run setup twice; first to install *Norman Network Directories*, then to install *Norman Virus Control and Administration tools*.

1. Log on with administrator's privileges, run setup and follow the instructions on the screen. Make sure you enter the correct corporate key in the **Authentication key** field.
2. In the *Installation type(s)* dialog, select **Network Distribution Directories** only:



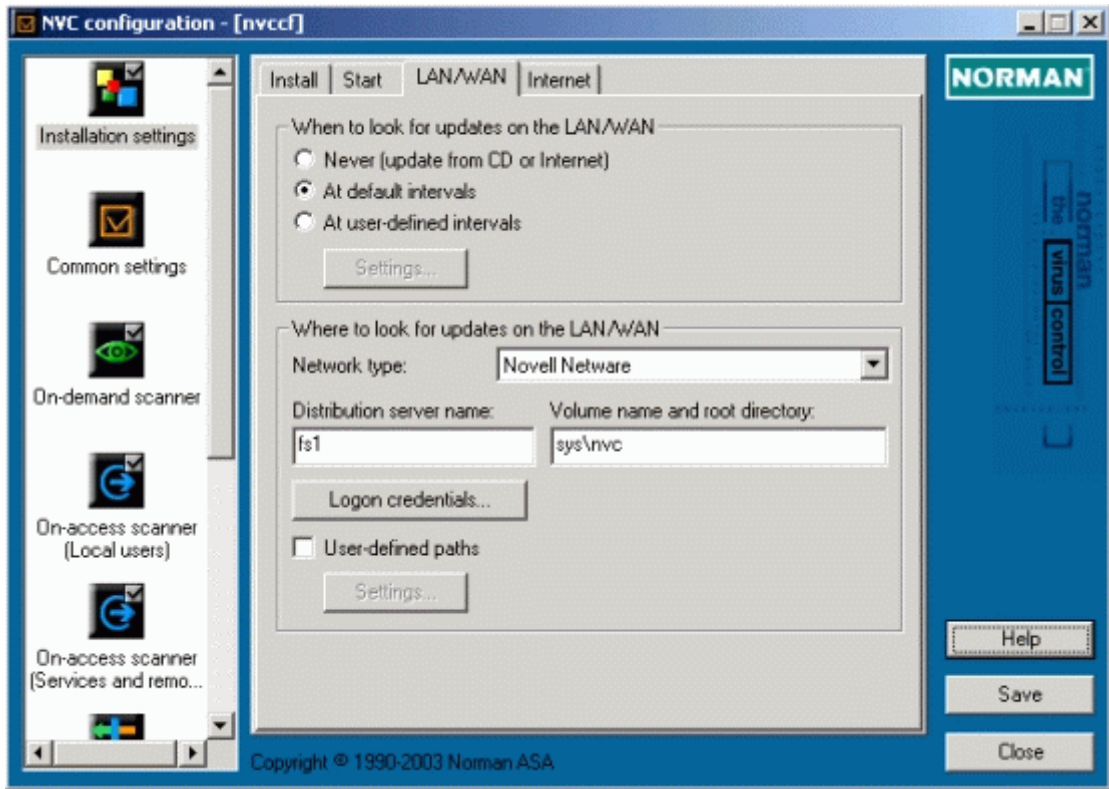
3. Install to a destination folder on the NetWare server where all users have read and file scan access.
4. Files are being copied to the specified folder.
5. Follow the instructions on the screen. When you click on **Finish** in the final screen, you have completed the first part of the setup procedure.
6. Run setup again. When you reach the *Installation type(s)* dialog this time, select to install *Norman Virus Control* and *Administration tools*:





7. Install these components to your *local* hard drive.
8. Follow the instructions on the screen. When you click on **Finish** in the final screen, you have completed the second part of the setup procedure. Note that you may be instructed to reboot your machine.
9. Start the **Configuration Editor** by pressing Start|Programs|Norman Virus Control|Configuration Editor.  
**Note:** Do not start the Configuration editor from the tray icon at this point.
10. From the **Installation settings** module, select the **Install** tab. Make sure that the authentication key matches the one you entered in step 1.

11. In the tab **LAN/WAN**, select *Novell Netware* as network type, and specify *Distribution server* and *Volume name and root directory*.



***distribution server name*** is the name of the server you installed to,

***volume name*** is the name of the NetWare volume on the server you installed to, and

***root directory*** is the name of the directory on the NetWare volume you installed to.

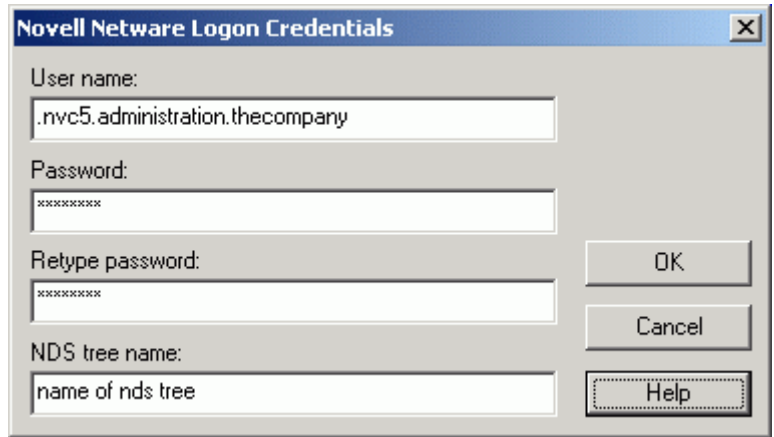
**Example:** If the server name is “FS1”, the volume installed to is “SYS”, and the Norman directory is called “NVC”, NVC automatically resolves the file path to:

```
\\fs1\\sys\\nvc\\distrib\\download
```

and you can view the file path when you select **User defined**

**paths** and click **Settings** in the tabbed dialog **LAN/WAN**

12. Click on **Logon credentials** and complete all fields.



The image shows a Windows-style dialog box titled "Novell Netware Logon Credentials". It contains four text input fields and three buttons. The "User name:" field contains ".nvc5.administration.thecompany". The "Password:" field contains "xxxxxxx". The "Retype password:" field contains "xxxxxxx". The "NDS tree name:" field contains "name of nds tree". To the right of the fields are three buttons: "OK", "Cancel", and "Help".

**User name:** Enter the name that NVC will use to log on to the distribution server.

**Note well:** The name must include the leading dot ‘.’.

- For NDS environments (NetWare 4 and later), the user name must be the fully distinguished name. Either it can be typeless, i.e.  
`.nvc5.administration.thecompany`, or  
 typeful, i.e.  
`.cn=nvc5.ou=administration.o=the company`.
- For Bindery environments (NetWare 3.x), enter the user name, i.e. NVC5.
- Make sure this user is granted “Read” and “File scan” rights to “normandirectory”. In addition, you should make sure that you assign the same rights to all users eligible for distribution.

**Note:** We recommend that you create a new user for this purpose instead of using an existing user.

The configuration program does not create the user for

you. You must do this manually by using the appropriate NetWare tools.

**Password:** Enter the user's password.

**NDS tree:** Enter the name of the NDS tree if applicable.

13. From the Configuration editor, select possible other configuration options you wish to include. Note that there are no default values for Message Routing. See the *Reference Guide* for details.
14. **Save** the configuration file. The configuration file is now saved as `default.ndf` on the server, while an identical configuration file is saved as `nvccf.ndf` locally.

Note that if you later wish to change the configuration file, you must open the server version (`default.ndf`), because you will not have write access to the local configuration file.

15. Run the `Niucf.exe` file from the local `[NormanPath]\Nvc\Bin` folder and follow the instructions on the screen.  
Make sure that you include all platforms, products and NVC languages in the network. See also 'NIUcf' on page 63.
16. Run Internet Update by selecting Start|Programs|Norman Virus Control|Internet Update.

## Why is reboot sometimes required?

Updating NVC is normally done without any user interaction. A run-of-the-mill update comprises an updated scanning engine and signature files. The characteristic update happens behind the scenes, transparent to the user.

From time to time, however, other modules are also included. Even on such occasions, the NVC agent (Zanda) usually supervises the update without involving the user.

On rare occasions, however, NVC will notify the user that a reboot is required to complete the update. This happens when Zanda detects that it cannot stop a module that is flagged for update. These are the situations that trigger a reboot:

1. There is a new version of Zanda itself. The only way to replace the running Zanda, i.e. update itself, is to reboot the system.
2. There is a new version of the filter driver. The On-access scanner on Windows NT/2000/XP/2003 applies a file filter driver to monitor file operations. The architecture of Windows NT/2000/XP/2003 does not allow file filter drivers to unload themselves. When they are loaded they will run until system shutdown. A reboot is thus the only way to perform update on a loaded file filter driver.
3. Zanda cannot update an active component. During an update any open NVC consoles are not automatically closed, and an open console is by definition “in use”. Therefore, make it a habit to close all NVC consoles after use to avoid unnecessary reboot situations.
4. NVC’s *Reference Guide* describes how Norman Internet Protection (NIP) is inserted in winsock processes through NIPHK.DLL. Some applications, like Instant Messaging software and IRC, are constantly active. Such applications may not let NIP “unhook” until the application is closed, not even when Zanda has instructed NIP to unload. That’s when the problem arises - when an update arrives, a situation as described in #3: Zanda cannot update an active component. In this case because a hook mechanism may be in use at the time, namely NIPHK.DLL. If it is busy it will block the update and force a reboot.

You should therefore consider the need carefully for using NIP on:

- Mail servers, mail gateways and servers in general
- Installations considered critical to reboot

The only way to be sure that NIP does not invoke a reboot, is to keep it away from the server. As suggested in the Reference Guide, NIP is primarily a workstation module.

Whenever an updated version of NVC that requires a reboot is in the offing, you will be notified in advance by a special edition of NVC’s Release Notes that pops up on the screen.

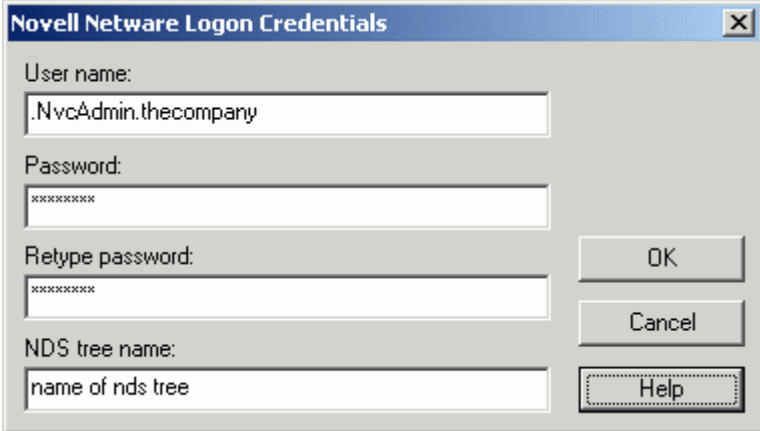
## Automatic updates

It's strongly recommended that you update NVC on a regular basis. In networks with direct/router based connection to the Internet, follow the steps below to fully automate the update process.

Pick a workstation, preferably the administrator's, where you can schedule *Norman Internet Update*.

To enable a workstation to download updates to the `distrib\download` directory on the server, you must:

1. Create an NVC Admin user with Read, Erase, Modify, Write, Create and Filescan access to the `...\distrib` directory on the server.
2. Create a machine specific configuration file, as described in 'Distributing diverse configuration/task files to individual workstations' on page 93.
3. In this file, go to the LAN/WAN tab and select **Logon credentials**. Specify the user created in step 1:

A screenshot of the 'Novell Netware Logon Credentials' dialog box. The dialog has a title bar with the text 'Novell Netware Logon Credentials' and a close button (X). It contains four text input fields: 'User name:' with the text '.NvcAdmin.thecompany', 'Password:' with masked characters 'xxxxxxxx', 'Retype password:' with masked characters 'xxxxxxxx', and 'NDS tree name:' with the text 'name of nds tree'. To the right of the input fields are three buttons: 'OK', 'Cancel', and 'Help'.

4. In the Internet tab, select **On direct connection at specified times**.
5. Make sure that you also select the option **Update distribution server**. Please refer to the *Reference Guide* for detailed information.

The agent will now fetch and install the updates from `...\distrib\download` on all workstations in the network, including the one that is scheduled to download. Note that a logged on workstation is updated according to your specifications in “Installation settings” in the Configuration editor’s **LAN/WAN** tab, and described in detail in the *Reference Guide*.

Make sure that the computer that is running the task is not switched off when the task is scheduled to run. Generally, it’s a good idea to run spot tests to make sure that downloading and updating works as intended.

You must run the program `niucf.exe` **before** you run NIU for the first time.

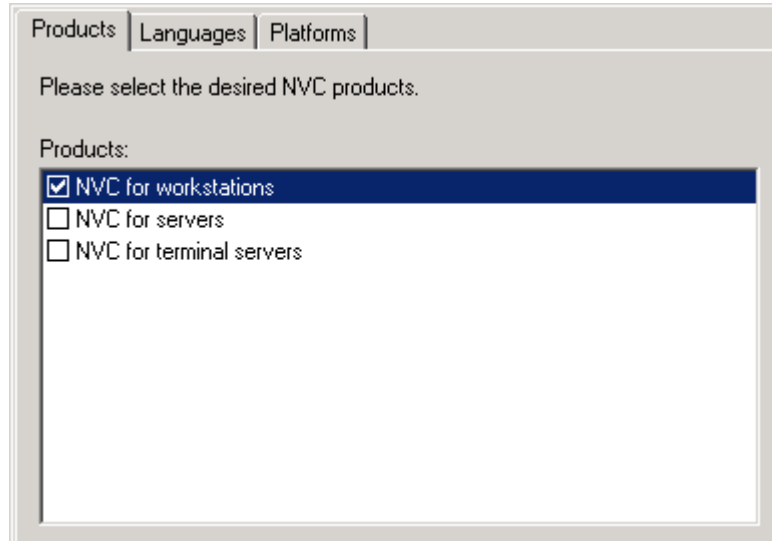
## NIUcf

*Norman Internet Update* (NIU) is a program that checks Norman’s product server for new or updated products. Refer to the *Reference Guide* for more information on this program.

When you run NIUcf, a file called `niucf.ndf` is created in the folder `...\nvc\config`. This file is an ordering form where all necessary information about platform, language and products is stored. NIU makes sure that everything in the file appears on the list for eligible updates, provided that your licence covers the ordered items.

## Products, languages, and platforms

Specify which products you wish to update by selecting from this list:



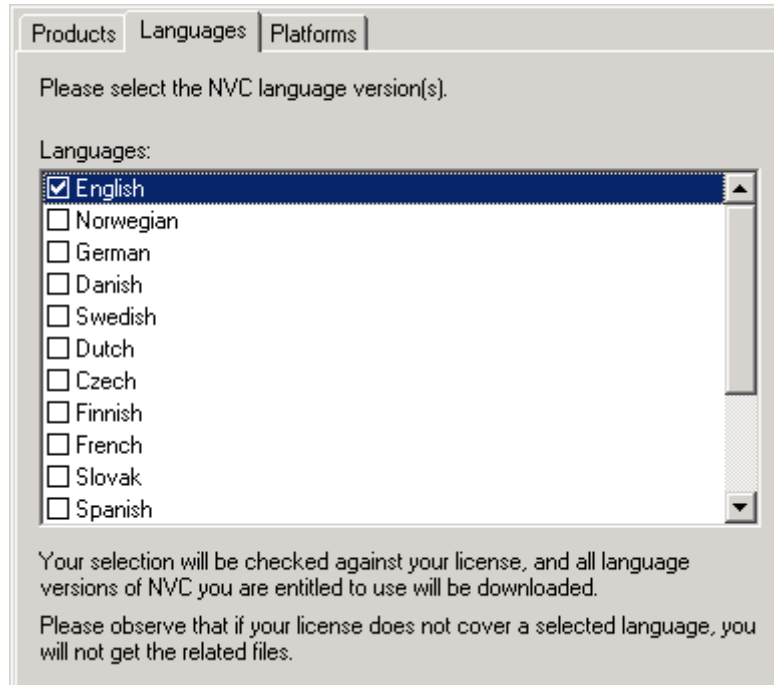
The screenshot shows a window with three tabs: 'Products', 'Languages', and 'Platforms'. The 'Products' tab is selected. Below the tabs, the text 'Please select the desired NVC products.' is displayed. Underneath, the label 'Products:' is followed by a list of three items, each with a checkbox:

- ☒ NVC for workstations
- ☐ NVC for servers
- ☐ NVC for terminal servers



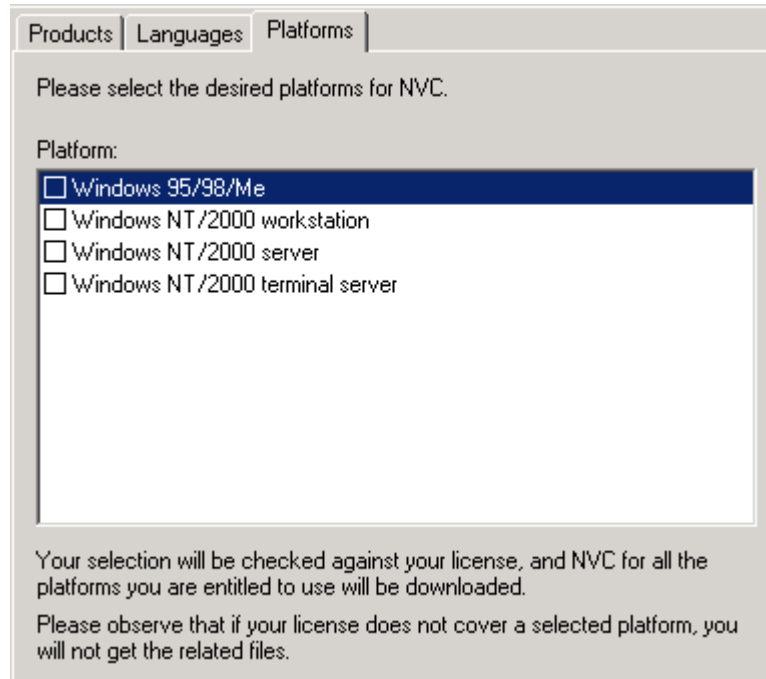
## Languages:

The current release is available in many different languages. New languages are added at irregular intervals. Contact your Norman dealer for information about NVC in your language.



## Platforms:

Specify which products you wish to update by selecting from this list:



The screenshot shows a dialog box titled 'Platforms' with three tabs: 'Products', 'Languages', and 'Platforms'. The 'Platforms' tab is selected. The dialog contains the text 'Please select the desired platforms for NVC.' followed by a label 'Platform:' and a list box. The list box contains four items, each with a checkbox: '\Windows 95/98/Me' (which is selected and highlighted in blue), '\Windows NT/2000 workstation', '\Windows NT/2000 server', and '\Windows NT/2000 terminal server'. Below the list box, there is a paragraph of text: 'Your selection will be checked against your license, and NVC for all the platforms you are entitled to use will be downloaded. Please observe that if your license does not cover a selected platform, you will not get the related files.'

Whenever you wish to make changes to any of the three groups, you must run NIUcf again to update the list. Depending on the changes, you may have to change your licence agreement to get access to other components.

# Distributing NVC to Windows 95/98/Me workstations

Regardless of platform, the installation program will remove earlier versions of NVC (NVC v4.7x or v4.8x) if they are detected during setup.

If you're running the distribution program N\_DIST, make sure that you remove all N\_DIST entries from the login script.

**Note:** You can also use this procedure for Windows NT/2000/XP/2003 if the users have local administrator's rights.

SelfXWiz is a wizard that assists you to create the initial package that will be distributed to all machines. If you wish to use a tree structure for distributing NVC, you need to create different initial packages for different locations in the tree where a package should be installed.

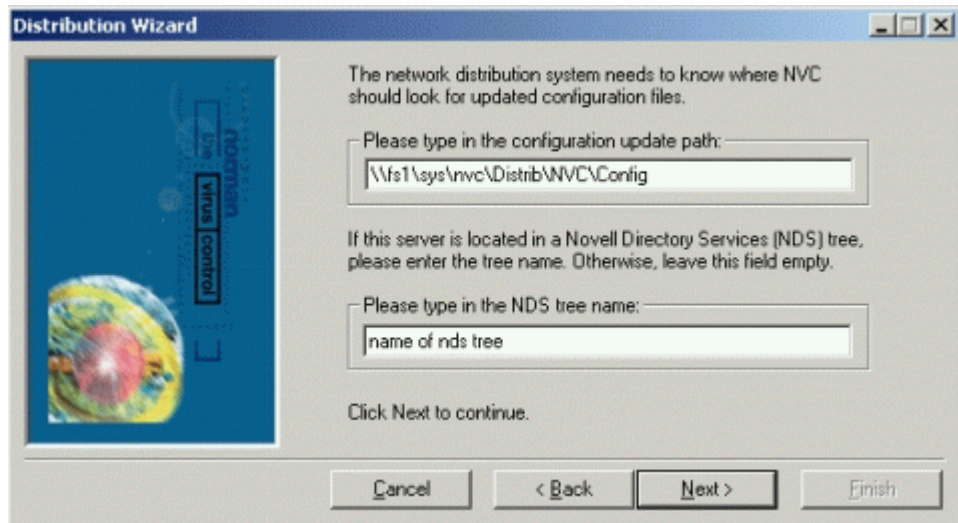
This procedure uses the program SelfXWiz to create a self extracting distribution file. SelfXWiz will use the file nvcz0001.zip, which must reside in the `distrib\download` folder locally or on the server.

**Note well:** The values suggested by the wizard are only examples. The examples serve the purpose of informing you what kind of information that is requested, as well as the correct syntax. You must enter your system's actual server names etc. yourself whenever system specific information is needed. Do not click the **Next** button until you have verified that the present information is correct.

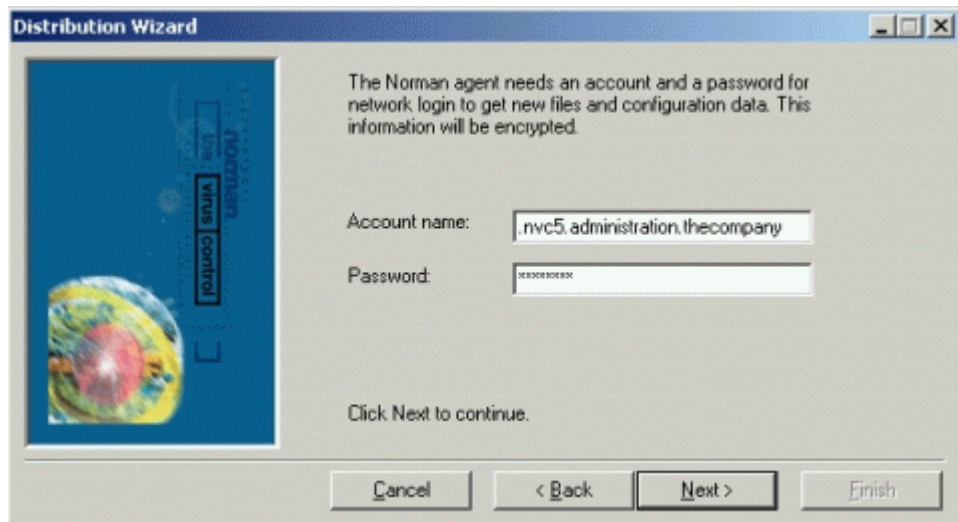
1. Run `selfxwiz.exe` from `<norman>\nvc\bin` and follow the instructions on the screen. When the wizard asks for configuration update path, make sure that you enter exactly the same path as displayed in the field Update configuration files from. This path appears when you select **User defined paths** and click **Settings** in the tabbed dialog **LAN/WAN** in the network configuration file (`default.ndf`):

Update configuration files from:

`\\nvc5server\nvc5share\distrib\nvc\config`



2. The account name must be entered with the correct syntax.



3. An `.exe` file is created when you are done. You can decide the file name yourself (default is `nvc5w32.exe`). This file is intended to be run from the login script.
4. Run this executable file from a machine where you want NVC installed.  
Wait for approximately 10 minutes.  
NVC should now be installed, possibly with an instruction to reboot. If installation fails, go through the entire procedure and make sure that all the information you have entered is correct.
5. When you have established that NVC installs correctly, update the login script to run `nvc5w32.exe` or whatever you specified as file name in step 1.
6. For users who employed `N_DIST` for distribution in earlier NVC versions: replace the line in the login script that refers to `N_DIST` with the name of the executable file.

## Using NDesk to administer NVC

NDesk is a tool for administering a network installation of NVC5 from a single workstation, including remote installation on the Win NT/2000/XP/2003 platform.

Important notes about NDesk:

1. You can only use NDesk to **distribute** NVC to Windows NT/2000/2003 and Windows XP Professional machines.
2. NDesk can only **run** on a Windows NT/2000/XP/2003 machine.
3. However, NDesk can **administer** and **monitor** Windows 9x workstations as well as NT/2000/XP/2003.

Based on the requirements above, the primary functions that NDesk offers are:

- NVC Remote installation on the NT/2000/XP/2003 platform
- Monitor NVC installations on *all* Windows machines
- From one central point, you can run updates, start scans etc. from the right-click menu
- NVC Configuration management

- NVC Task file management

Each of these functions can be performed from one of the three tabbed dialogs that are displayed when the application starts.

The following sections will explain how you can use NDesk to install NVC to Win NT/2000/XP/2003 machines, and how you can administer configuration and task files in the network from one single point.

## NDesk vs PushWiz

If you distribute NVC to Windows NT4/2000/XP/2003 machines in a network where the ping functionality is enabled, NDesk is the recommend distribution tool. If ping is disabled, and you for some reason don't want to enable it, you must install NDesk's predecessor PushWiz. Download `Pushwiz.zip` and unzip the file to the `\Norman\NVC\Bin` folder. PushWiz is described in Appendix A (Distribution from NT servers) on page 111 and Appendix B (Distribution from Novell Netware servers) on page 114. You can download PushWiz from [here](#).

## Installation

For NDesk to run successfully, the following prerequisites have to be met:

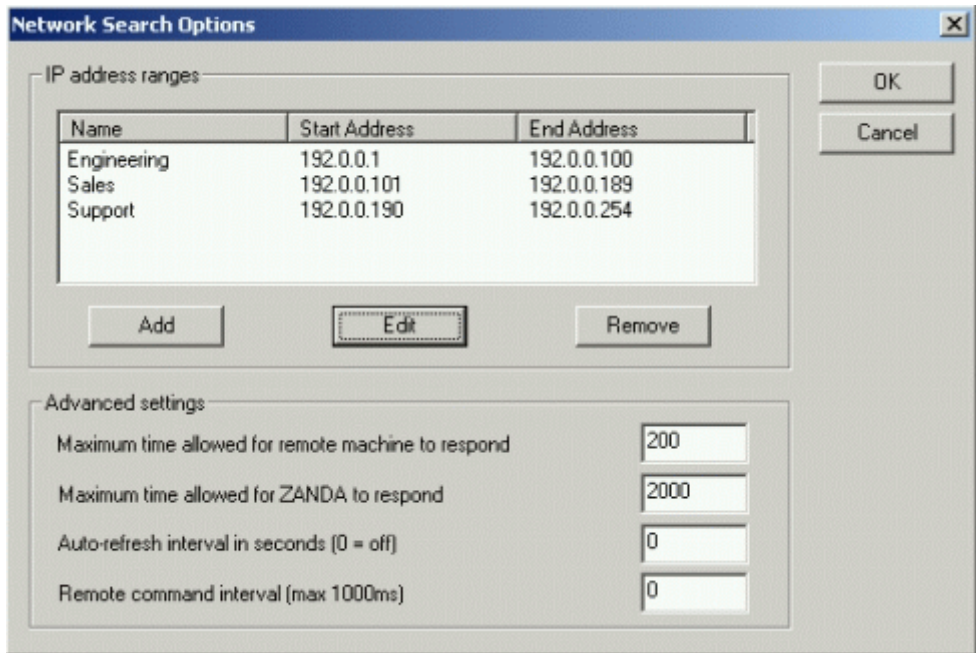
- Microsoft Windows NT, Windows 2000, Windows 2003 or Windows XP Professional edition must be installed on the machine where NDesk is running.
- NVC message routing must be enabled (select ☒ **Reply to broadcasts and enable message routing** in the module Message routing in the Configuration editor) for installation management functions to work.
- The currently logged on user must have (domain) administrator privileges.

**Note:** NDesk distribution is only possible to Windows NT/2000/XP/2003 machines where the user running NDesk has the necessary privileges to install a service. When installing across domain borders, it is an absolute requirement that the **identical** user is a member of Domain Admins in **all** relevant domains. Additionally,

this user must have local administrator privileges on the machine NDesk is running on.

Distribution is possible to Win9x machines if you employ the **Save** option that creates a self-extracting installer file (see page 67).

The first time NDesk (ndesk.exe) is run, you will see the dialog for specifying network search parameters:



The dialog box titled "Network Search Options" contains two main sections. The top section, "IP address ranges", features a table with three columns: "Name", "Start Address", and "End Address". The table lists three ranges: "Engineering" (192.0.0.1 to 192.0.0.100), "Sales" (192.0.0.101 to 192.0.0.189), and "Support" (192.0.0.190 to 192.0.0.254). Below the table are "Add", "Edit", and "Remove" buttons. The bottom section, "Advanced settings", includes four settings with input fields: "Maximum time allowed for remote machine to respond" (200), "Maximum time allowed for ZANDA to respond" (2000), "Auto-refresh interval in seconds (0 = off)" (0), and "Remote command interval (max 1000ms)" (0). "OK" and "Cancel" buttons are located on the right side of the dialog.

Name	Start Address	End Address
Engineering	192.0.0.1	192.0.0.100
Sales	192.0.0.101	192.0.0.189
Support	192.0.0.190	192.0.0.254

This dialog allows you to refine the network search parameters that will be used for populating the list control.

NDesk has automatically calculated the first address range that is displayed from the machine's IP address and mask. You can change the values by pressing the **Edit** button. Additional ranges can be entered by pressing the **Add** button.

NDesk assigns default names to the address ranges, starting with `Network_1`, then `Network_2` etc.. You can specify names that are easily recognized instead.

The advanced settings allow further refining of the search efficiency by setting the ping and the Zanda (agent) check time-outs. By decreasing the ping time-out, the search can be performed more quickly but there is a danger that some machines may not appear in the list. By decreasing the Zanda time-out, the search can be performed more quickly but some machines may display an incorrect status.

NDesk can be configured to periodically refresh the installation page in the background. Use the **Auto-refresh** option to specify at what intervals NDesk should refresh. Note that during an auto-refresh, the options **Refresh list** and **Refresh selected** (see page 80) are disabled.

The **Remote command interval** is specified in milliseconds. In larger networks, the server may not be capable of handling **Update now** for numerous machines simultaneously. Therefore, you can define a throttle of x milliseconds and make the machines stand in line waiting for their turn to come. The default value is 0.

## Analyzing the network installation

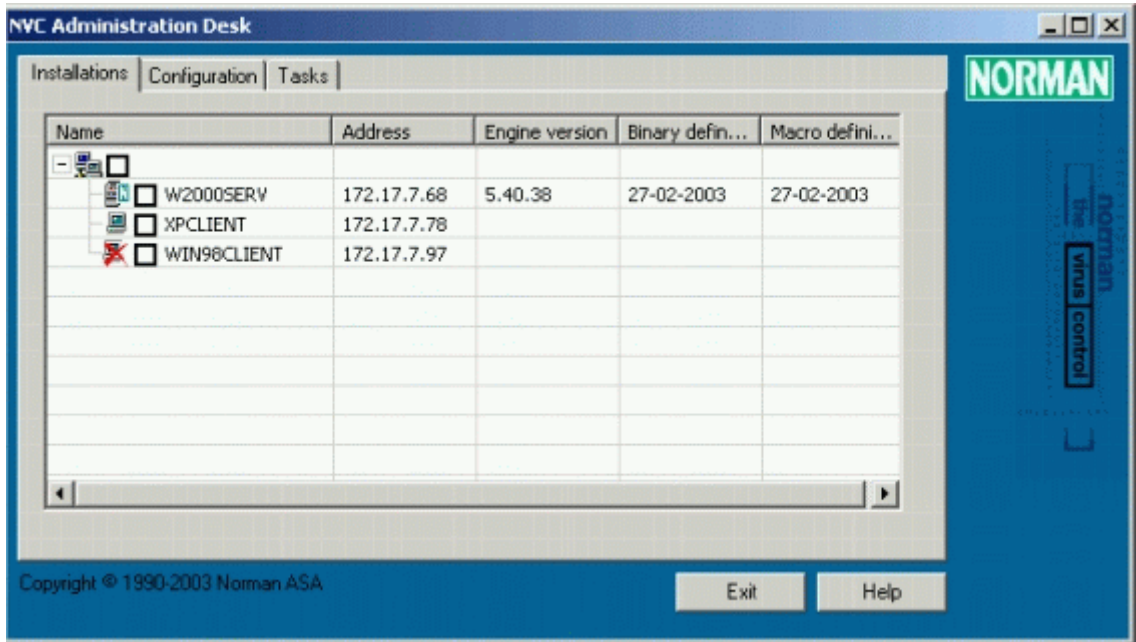
When you have clicked **OK** in the Options dialog, a network search (“ping”) is launched. While the search is in progress, a blue eye is visible in the “Name” column.

**Note:** The network search is performed by first sending a ping to each address in the address ranges.

If the ping is successful, the machine at that IP address is checked for a running NVC service (Zanda). If the machine has a Zanda service running, the version and definition file dates for NVC 5 are displayed in the list. This provides an immediate record of the installation status of NVC across a network, as you can see in the figure below.

If you have specified more names and address ranges, they will appear in this dialog as a tree structure.





For all items on a list like this, you can view the IP address, the engine version, and the creation date for the **Binary** and **Macro** definition files. In addition, the illustration clearly shows that

- W2000SERV is a server where Zanda is installed and that is working normally.
- XPCLIENT has no Zanda installed, but this is Windows NT/2000/XP machine and eligible for NDesk installation.
- WIN98CLIENT has no Zanda installed and it cannot be installed by NDesk. The red cross demonstrates that the Service Control Manager (SCM) is not found. SCM is a feature for Windows NT/2000/XP only, and the absence of SCM on WIN98CLIENT suggests that this is a Windows 95/98/Me machine and hence not eligible for NDESK installation.

The different status symbols you can receive are:



Zanda is running on this machine, and you can see the date and version number for the scanning engine, and when the binary and macro virus definition files were last updated.



Zanda is installed but cannot report status for NVC.



Zanda is not installed, but this is a Windows NT/2000/XP/2003 machine and eligible for NDesk installation.



Zanda is not installed and cannot be installed by NDesk. This is either a Windows 95/98/Me machine or a Windows NT/2000/XP/2003 machine with file and print services disabled. Unless file and print services are enabled, installation is not possible on Windows NT/2000/XP/2003 machines. In addition, the default shares for administrative use (i.e. IPC\$, C\$) must exist. Use SelfXWiz for remote installation of NVC5 on Windows 95/98/Me machines. See more on SelfXWiz on page 28 (NT server) and page 67 (NetWare).



A workstation that is awaiting a restart during an update.



A workstation with one or more components reporting install or update errors.



A server that is awaiting a restart during an update.



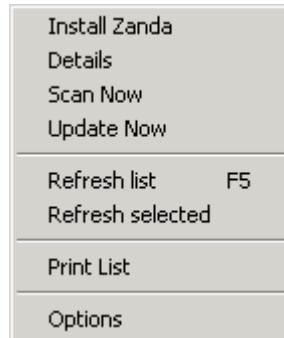
A server with one or more components reporting install or update errors.



A server that is working normally.

### Context menu

A context menu for this screen can be accessed by selecting a machines and clicking the right mouse button which provides the following functions.



### Install Zanda

Selecting this option launches a dialog to enter the information required to install NVC 5 to the selected machines.

**Install Progress**

Installation parameters:

Account: .nvc5.administration.thecompany

Password: [REDACTED]

NDS Tree: Name of NDS tree

Distribution source: \\Servername\NVCshare

Target root folder (e.g C:\Norman): C:\NORMAN

☐ Overwrite existing NVC5 installations

The install parameters can be placed in a self-extracting installer file. This file can be run from a log-in script to install the Agent on non-NT machines. Press the Save button to perform this action.

Buttons: Install, Close, Help, Save

Machine Name	Status
--------------	--------

**Note:** If you try to install to a machine running Windows 95/98/ME, the following error message appears in the Status field:

*Unable to install - not NT or WIN 2000*

### Account

It is of utter importance that use the correct syntax when you enter the information in the **Account** name field in Ndesk.

The syntax is:

.nvc5.administration.thecompany

or

.cn=nvc5.ou=administration.o=the company

**Password**

Enter the password for the user specified in the **Account** field.

**NDS tree**

In a NetWare environment, you must enter the name of the NDS tree.

**Distribution source**

Enter the full path of the NVC server with a syntax like demonstrated in the illustration.

**Target root folder**

Enter the intended Norman root directory to be used on the remote machine. If this field is left blank, the program will default to C : \Norman.

☐ **Overwrite existing NVC5 installations**

Normally, an existing installation of NVC 5 or the agent Zanda cannot be overwritten. This can be overridden by selecting this option.

When you click on **Install**, NDesk will validate the information entered. If the information is valid, NDesk will install NVC to all the selected machines. Each selected machine will be listed in the list control and the installation status will be shown in the second column. The progress bar will appear for each installation taking place.

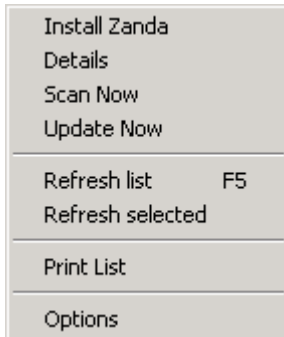
**Note:** The bar displays the progress of the installation of *Zanda*. After the agent is installed, it takes approximately 10 minutes before NVC is fully installed. Refresh the list to check that everything is OK. The first time NVC is installed, the program is not visible for the user until a logoff/logon has been performed.

**Save**

If you click **Save**, NDesk creates a self-extracting installer file with the parameters specified in this dialog. If you use this option, you don't need to use SelfXWiz (discussed on page 67). Note that the suggested name of the installer file created by the Save command in NDesk is identical to the name that is proposed for the SelfXWiz file—nvc5w32. If you have a packet

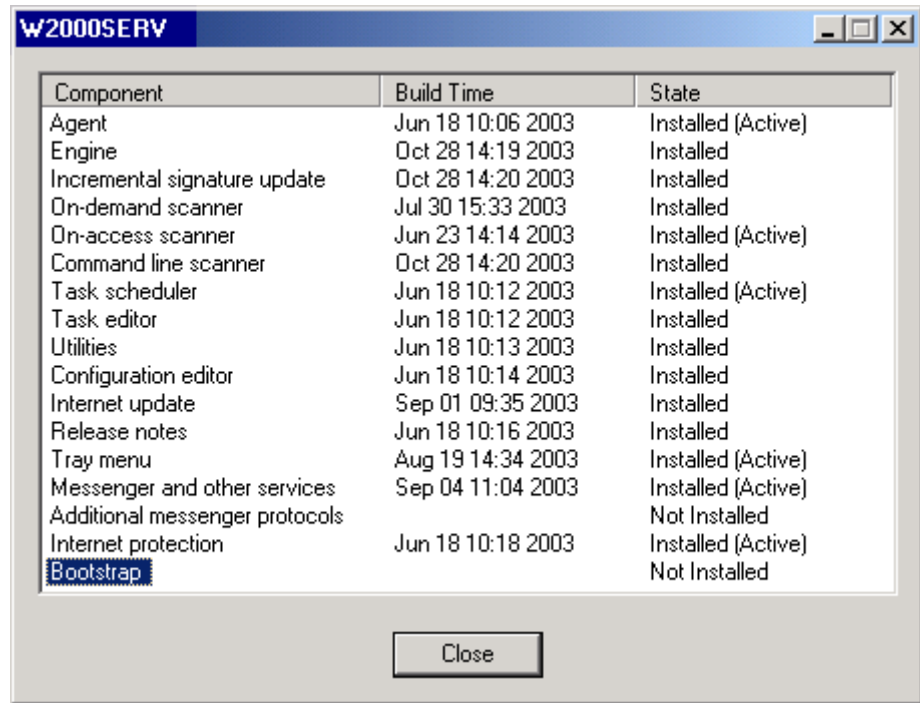
created earlier that you want to keep, you must take appropriate action to prevent it from being overwritten.

**Note:** You **must** have write access to the location where you want to save the new installer file to. No error message will warn if you select a location to which you don't have write access.



### Details

Full details of the NVC installation on selected machines can be displayed using this option. Each installation report will be displayed in a separate dialog as shown below:



The screenshot shows a window titled 'W2000SERV' with a table of components. The table has three columns: 'Component', 'Build Time', and 'State'. The 'Component' column lists various services like Agent, Engine, and scanners. The 'Build Time' column shows dates and times from June to September 2003. The 'State' column indicates whether each component is 'Installed (Active)', 'Installed', or 'Not Installed'. The 'Bootstrap' component is highlighted with a blue selection bar.

Component	Build Time	State
Agent	Jun 18 10:06 2003	Installed (Active)
Engine	Oct 28 14:19 2003	Installed
Incremental signature update	Oct 28 14:20 2003	Installed
On-demand scanner	Jul 30 15:33 2003	Installed
On-access scanner	Jun 23 14:14 2003	Installed (Active)
Command line scanner	Oct 28 14:20 2003	Installed
Task scheduler	Jun 18 10:12 2003	Installed (Active)
Task editor	Jun 18 10:12 2003	Installed
Utilities	Jun 18 10:13 2003	Installed
Configuration editor	Jun 18 10:14 2003	Installed
Internet update	Sep 01 09:35 2003	Installed
Release notes	Jun 18 10:16 2003	Installed
Tray menu	Aug 19 14:34 2003	Installed (Active)
Messenger and other services	Sep 04 11:04 2003	Installed (Active)
Additional messenger protocols		Not Installed
Internet protection	Jun 18 10:18 2003	Installed (Active)
Bootstrap		Not Installed

Close

The dialog displays **Build Time** and **State** for all components. The only four components that NDesk reports 'Active' as **State** is for the Agent, the On-access scanner, the Task Scheduler, and the Messenger and other services.

**Note:** Components that have not been selected will appear as "Not installed", for example 'Additional messenger protocols'. You select components from the Install tab in the **Installation settings** module. The exception is 'Bootstrap', which is a packet that the distribution tools employ initially during installation. It's only relevant for machines where the distribution tools are running. Since Bootstrap is not an optional component, it will appear as not installed.

### Scan now

Scan the hard disks on the selected machine(s).

**Update now**

Initiates updates from the NVC distribution server in the local network. *Do not confuse this option with NIU updates.* In a situation of virus epidemics, for example, **Update now** is a valuable function. The default interval for updates from distribution server is once an hour. In a worst case scenario of virus epidemics, this may be insufficient. However, do not request too many machines to run an **Update now** at the same time. In large networks you should use the **Remote command interval** option (see page 72) to avoid server overload.

**Refresh list**

Selecting this option triggers a new network search.

**Refresh selected**

Refresh only the selected items in the list.

**Note:** During an **Auto-refresh** (see page 72), the **Refresh list** and **Refresh selected** options are disabled.

**Print list**

Select this option to print the current list.

**Options**

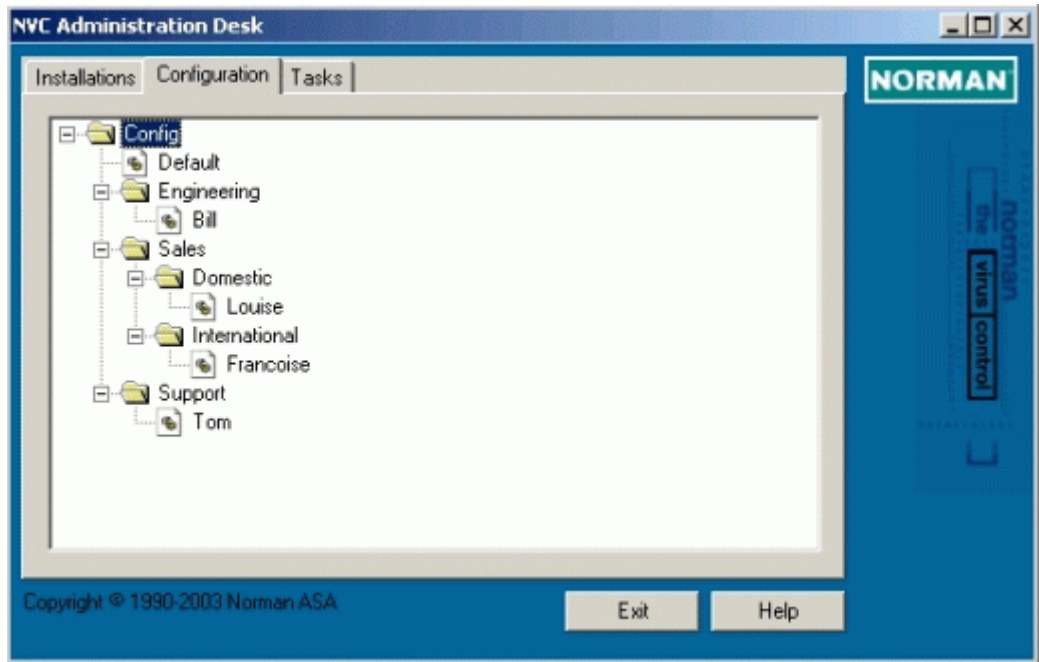
You can manage address ranges by selecting this option. The **Network Search Options** dialog (see page 71) is displayed. New ranges are added by pressing the **Add** button; existing ranges are edited by selecting a range and pressing the **Edit** button; ranges can be removed by selecting a range and pressing the **Remove** button.



## Configuration file management

NDesk cannot *install* on Win9x machines, but configuration files can be handled just as on Windows NT/2000/XP/2003 machines.

Each installation of NVC 5 can be configured separately from a central point. These configuration files are stored on the distribution server and can be organized into groups by placing the files into a directory tree as shown here:



**Note:** Each configuration file is named after the machine to which the configuration applies. The only name that can be duplicated is the `default.ndf`.

When a machine's agent - Zanda - searches for a configuration file, it looks in the Config tree for a file with the same name as the machine. If that is unsuccessful, the nearest `default.ndf` is used.

Configuration files and folders can be moved using drag and drop on the tree control shown in the figure above. A context menu is also available by selecting an item and clicking the right

mouse button. The context menu provides the functions described below.



### **New**

Select this option to create a new configuration file, folder or distribution point. If a new file is being created, the file name must be unique. To create a new distribution point, you must right-click the *root* of the Config folder.

**Note:** You cannot make use of the distribution point option in a Novell Netware environment. Cascading distribution points are only supported with Windows NT/2000/XP/2003 as distribution point.

### **Delete**

A configuration file or folder can be deleted using this option.

### **Rename**

A configuration file or folder can be renamed using this option. The file name must be unique

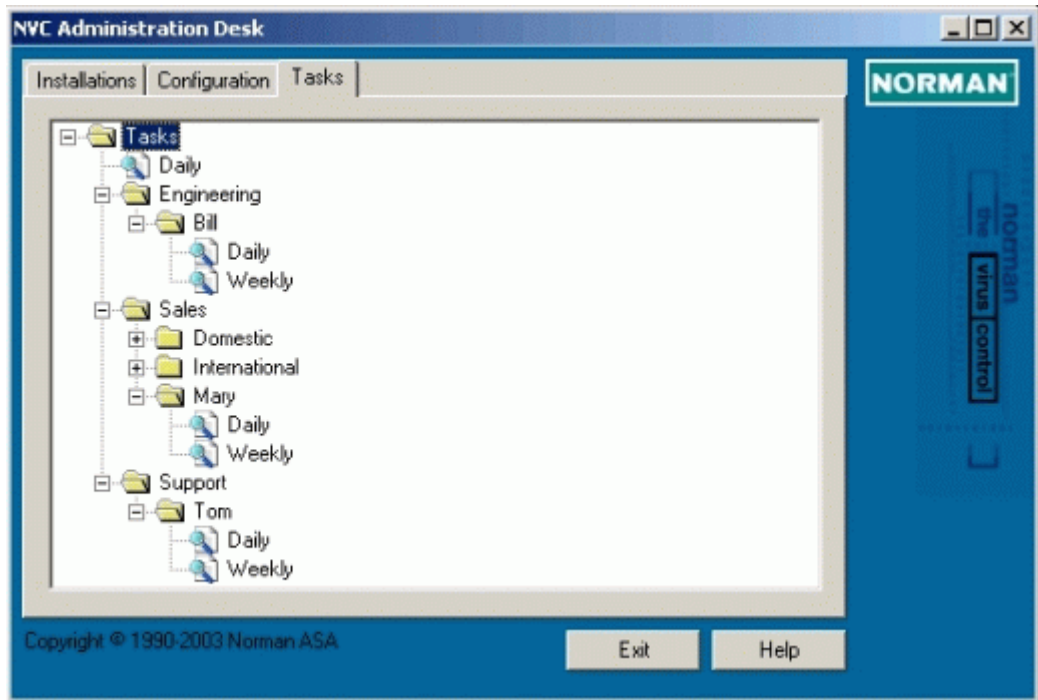
### **Open**

If the selected item is a configuration file, selecting this option will launch the configuration file editor.

## Task file management

NDesk cannot *install* on Win9x machines, but task files can be handled just as on Windows NT/2000/XP/2003 machines.

Individual on-demand scans can be scheduled and run from a task file. Any number of task files can exist for a machine. These files are organized in a similar fashion to configuration files with the exception that the task files are stored in folders whose name follows that of the machine on which these tasks are to be run. Because of this, the folder name must be unique:



As with configuration file management, files and folders can be moved using drag and drop on the tree control. The restriction here is that the machine folder names must be unique. A context menu can be activated by selecting an item and clicking the right mouse button. This menu provides the same function as configuration file management:

### **New**

A new task file or folder can be created using this option. If a new folder is being created, the name must be unique.

**Note:** You cannot make use of the distribution point option in a Novell Netware environment. Cascading distribution points are only supported with Windows NT/2000/XP/2003 as distribution point.

### **Delete**

A task file or folder can be deleted using this option.

### **Rename**

A task file or folder can be renamed using this option. The folder name must be unique

### **Open**

If the selected item is a task file, selecting this option will launch the task file editor.

---

# Troubleshooting installation and distribution

## Scenario

You have followed the installation processes as described in this manual, but only the agent (`zanda.exe`) is installed on the workstations. The only trace of NVC on the workstations is a splash screen during boot.

## Possible solution

Copy `elogger.exe` (path `\\server\norman\nvc\bin`) from the server to the workstation and run it for approximately 15 minutes.

Meanwhile, open `default.ndf` in `\\server\norman\distrib\nvc\config`.

**Note:** Don't use the configuration editor from the system tray, as this will only edit the server's own settings.

Go to the **LAN/WAN** tab, select **User defined paths** and click **Settings**. Check that the UNC paths are OK by selecting **Start|Run** in Windows and type the paths one by one. When you click **OK** a window should appear, displaying the complete file paths. If you receive the error message *The Network Name cannot be found*, then the UNC path is invalid, probably because the distribution server name and/or share name (on Novell: volume name and root directory) are misspelled. As of NVC 5.5 you should no longer type in `\\` in front of the **Distribution server name**.

If you distribute NVC using SelfXWiz, you should validate the information you have submitted in the **Account name** field (screen 5 in SelfXWiz) after the following measure:

- If your network is a domain, the correct syntax for the account is *domain name\user name*.
- If your network is NOT a domain, the correct syntax is *server name\user name*.

- In a Novell NetWare environment, the correct syntax for an account in `default.ndf` is the full NDS name for the user, typeless or typeful, including a leading dot.

If you find errors, you should correct them and generate a new SelfXWiz distribution package (`nvc5w32.exe`). Run your new package on the workstation with problems.

Continue to watch `ellogger.exe` running. After 5 to 10 minutes, the messages should change to report copying and extraction of zip files from server to workstation. This is, of course, reliant on correct details in `default.ndf` in the first place, i.e. UNC paths etc.

If the problem persists only on NT machines, log onto the workstation with an account holding local administrator rights and stop the “server service”. If this fails, then the account doesn’t hold sufficient privileges on the workstation. Make sure that the account is a member of “domain admins” and that the “local admins” group on the workstation contains the “global domain admins”.

By now you have probably spotted the problem. If you haven’t, copy `default.ndf` to the local configuration path on the workstation with problems (`c:\norman\nvc\config`). In this folder you will find `nvccf.ndf` which you should rename to `nvccf.old`. Then rename this `default.ndf` to `nvccf.ndf`.

**If all this fails, please call technical support for further advice.**

---

## Using eLogger

### Monitor the agent with eLogger to troubleshoot your NVC5 installation

The following information is of a technical nature and is solely for experienced network administrators.

Use `elogger.exe`, a tool that is located in the `norman\nvc\bin` folder, to monitor the Norman agent (`zanda.exe`). Most of the error codes are documented on the following Microsoft web sites:

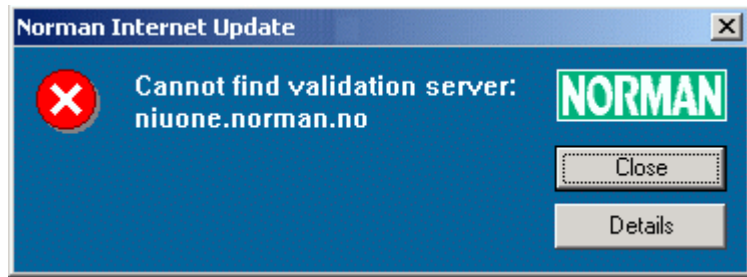
*<http://support.microsoft.com/support/kb/articles/Q155/0/11.ASP>  
(error -8 to 1248)*

*<http://support.microsoft.com/support/kb/articles/Q155/0/12.ASP>  
(error 1300 to 6118)*

If you do not find the relevant error code(s), please choose **Save** in eLogger. A file named `elogger_mmdd_tttm.txt` is then generated in the `norman\nvc\temp` folder. This file along with the files mentioned below, will be useful to Norman's technical support and developers if you need our help to solve the problem.

- `default.ndf` from `..\norman\distrib\nvc\config` on the server
- `nvccf.ndf` from `..\norman\nvc\config` on a workstation
- `nvcstate.ndf` from `..\norman\nvc\config` on a workstation

## Error messages



This error message appears if you have a firewall/proxy server in your network, and have misconfigured or forgot to configure the **Internet** tab in the Configuration Editor. Make sure that you have entered the correct address, port, and log on information for your proxy in the NVC configuration.

### Error messages from CCLAW, NVCOA, NVCOD or NYMSE after installation/update

Run the file `Delnvc5` from the `...\Norman\Nvc\Bin` folder. Select **Repair**. This will make the distribution agent reinstall the update. Hopefully, the **Repair** option will solve your problem. Otherwise, check that the machine where error messages occur meets the system requirements for NVC. If not, install the necessary updates, run `Delnvc5`, choose **Remove** and reboot before you reinstall NVC.

### NDesk error messages

#### *Invalid server/share*

This error message appears if the path you have entered in the **Distribution source** field doesn't exist, or if you haven't shared the distribution source folder and granted sufficient permissions.

*The specified user doesn't have the "Log on locally" user right on the server. Please check the security settings on the server.*

Running NDesk from a Windows 2000 server requires that the user defined in the account field has "Log on locally" user rights. On Windows 2000 servers, "Domain Users" are not granted this permission by default.

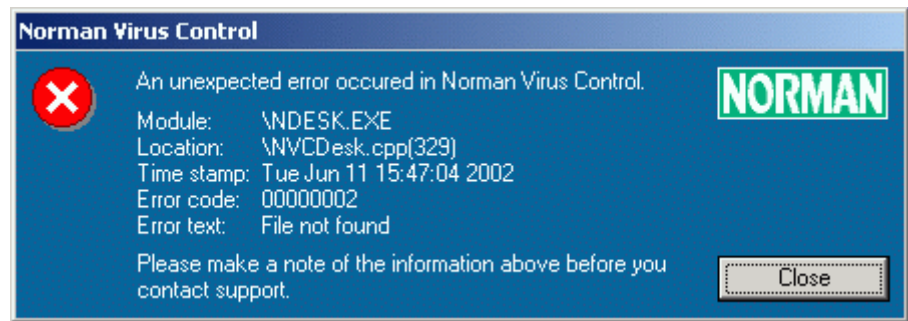


NDesk will automatically retrieve account information from the configuration file (`default.ndf`). You will therefore receive the above-mentioned error message if you use an account that is only member of “Domain Users”.

**Solution:** Enter an account from “Domain Admins” instead of one from “Domain Users” in NDesk’s account field. The account must be member of the built-in administrator group. “Domain Admins” are default members of this group.

*NVC installation management functions are not available because the Zanda service is not running on this machine.*

NDesk is not tested with remote administration tools. Try to stop such services and restart NDesk in a terminal server client session or from the local console of the machine running NDesk to avoid this message.



It is not possible to run NDesk from a shortcut on a machine where NVC is not installed

# Configuration

## Using environment variables to distribute diverse configuration/task files to different user groups

Many organizations may want to define different configuration settings for various groups or departments, as well as run specially designed tasks. To distribute diverse configuration and/or task files to different user groups we use *environment variables*.

The best way to illustrate an implementation involving environment variables is by example. *Any environment variable not already in use may be specified.*

You have decided that the SALES and SUPPORT departments should run different configuration files, and this is how you implement this scenario.

**Note:** Note that these environment variables cannot be set in a logon script or batch file for Windows NT/2000/XP/2003 workstations. See “Environment variables on Windows NT/2000/XP workstations” on page 92.

- 1 a) In the SALES logon script you insert the environment variable DEPT like this:

```
SET DEPT=SALES
```

- b) In the SUPPORT logon script you insert the environment variable DEPT like this:

```
SET DEPT=SUPPORT
```

On Windows NT/200 machines, the environment variables must be registered as “System variables” (not “User variables”).

On Windows 95/98 machines, add SET statements to `autoexec.bat`.

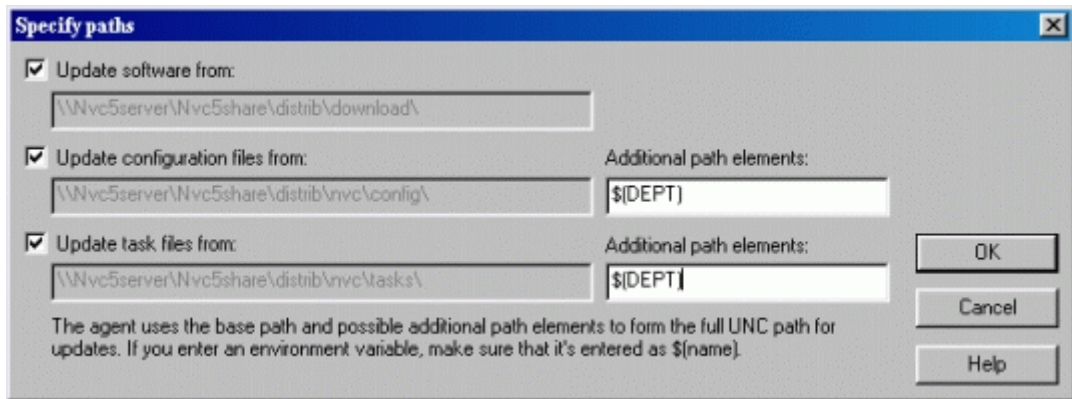
2. Create these directories on the distribution server:

```
\\Server\Share\Distrib\Nvc\Config\SALES
```

and

\\Server\Share\Distrib\Nvc\Config\**SUPPORT**

3. Place the relevant default.ndf file with the desired settings in the SALES and SUPPORT directories. The **Configuration** path on the LAN/WAN tab should be as indicated, and the same in both files. Adapt the other settings to the needs of the Sales and Support departments.



The image shows a Windows-style dialog box titled "Specify paths". It contains three checked options, each with a text field for a base path and an "Additional path elements:" field. The first option is "Update software from:" with the path "\\Nvc5server\Nvc5share\distrib\download\". The second is "Update configuration files from:" with the path "\\Nvc5server\Nvc5share\distrib\nvc\config\" and the additional element "\${DEPT}". The third is "Update task files from:" with the path "\\Nvc5server\Nvc5share\distrib\nvc\tasks\" and the additional element "\${DEPT}". At the bottom, there is explanatory text: "The agent uses the base path and possible additional path elements to form the full UNC path for updates. If you enter an environment variable, make sure that it's entered as \$(name)". On the right side, there are three buttons: "OK", "Cancel", and "Help".

Option	Base Path	Additional Path Elements
<input checked="" type="checkbox"/> Update software from:	\\Nvc5server\Nvc5share\distrib\download\	
<input checked="" type="checkbox"/> Update configuration files from:	\\Nvc5server\Nvc5share\distrib\nvc\config\	\$(DEPT)
<input checked="" type="checkbox"/> Update task files from:	\\Nvc5server\Nvc5share\distrib\nvc\tasks\	\$(DEPT)

The agent uses the base path and possible additional path elements to form the full UNC path for updates. If you enter an environment variable, make sure that it's entered as \$(name).

OK  
Cancel  
Help

4. Since the changes are done in the machines' logon scripts, they will not take effect until the machines have been rebooted.

## Environment variables on Windows NT/2000/XP workstations

NVC is designed to load at startup, i.e. when the system variables are loaded. If the variables are set in user mode only (typically in logon scripts), the NVC agent cannot see it. Setting system variables on NT/2000/XP workstations is sometimes an unwieldy undertaking, where administrator tools like Tivoli, MSI, ZENworks etc. can come in handy. If you don't have any tools to aid you, you must set the system variables manually on each workstation. To perform this task, log in with administrator's rights and select My Computer|Properties|Environment variables|System variables.

## Distributing diverse configuration/task files to individual workstations

In addition to define and distribute different configuration settings and tasks for groups and departments, you can do the same at *workstation level*.

Assigning individual configuration and task files are specified in the distribution directory on the server.

**Note:** Be careful not to confuse *user* with *workstation*. The following procedures assign individual configuration and task files to selected *workstations*, i.e. physical machines.

### Configuration files

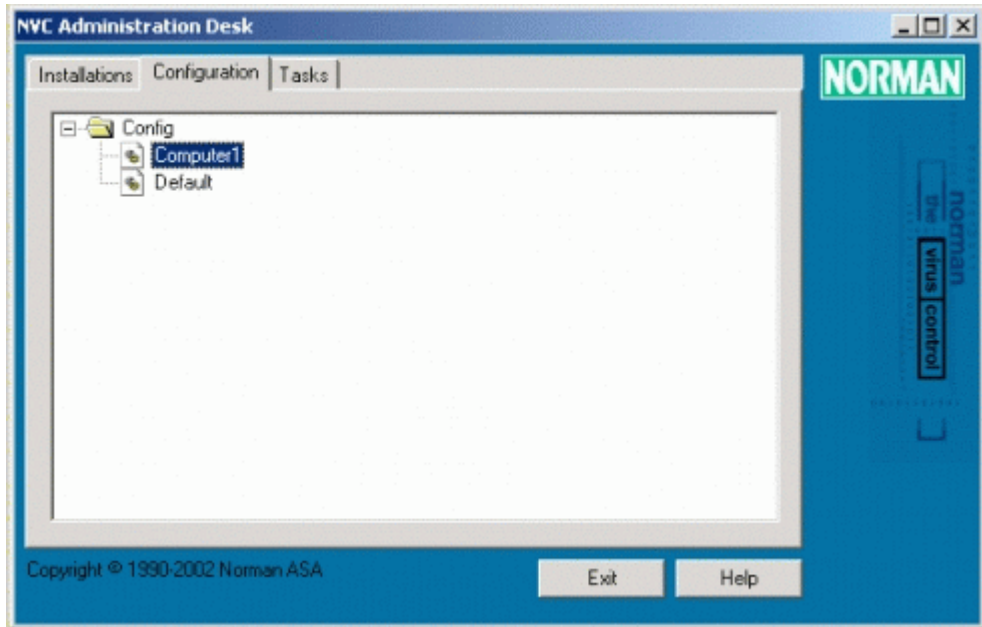
To assign a tailor-made configuration file to the workstation “Computer1”, you must:

1. Open NDesk from the ...\\Norman\\Nvc\\Bin folder.
2. Go to the tabbed dialog **Configuration**.
3. Right-click and select New|File. Name the file after the workstation that you want to assign a tailor-made configuration, for example “Computer1”.
4. Open the file that you just created (Computer1), add your preferred settings for the target machine, and save. The starting point of any new configuration file you create in NDesk is always a copy of a file with the same settings as `default.ndf`

### How it works

1. The tailor-made configuration file you just have created in NDesk, will now reside in the ...\\Distrib\\Nvc\\Config folder on the server along with the other configuration files for the network installation of NVC. When the machine logs on to the server, NVC will first look for a configuration file with a name that matches the machine name. You can create as many machine-specific configuration files as you like, but obviously only one per PC.
2. If no machine-specific configuration file exists, NVC will select `default.ndf`. We recommend that you always

keep a `default.ndf` with the settings you consider vital in the Config folder.



### Example:

In a Novell NetWare environment you probably want to assign one workstation to download updates for the distribution server, which in turn is the NVC distribution source in the network:

1. Create a new configuration file by right-clicking within the tabbed dialog "Configuration" and select New|File. Name this file after the workstation you want to download updates to.
2. Open your new machine-specific configuration file and select the tabbed dialog "Internet".
3. Select the option **Update distribution server** (see "LAN/WAN" tab in NVC's *Reference Guide*).
4. Save the new configuration file.

## Task files

To assign tailor-made task file(s) to the workstation “Computer1”, you must:

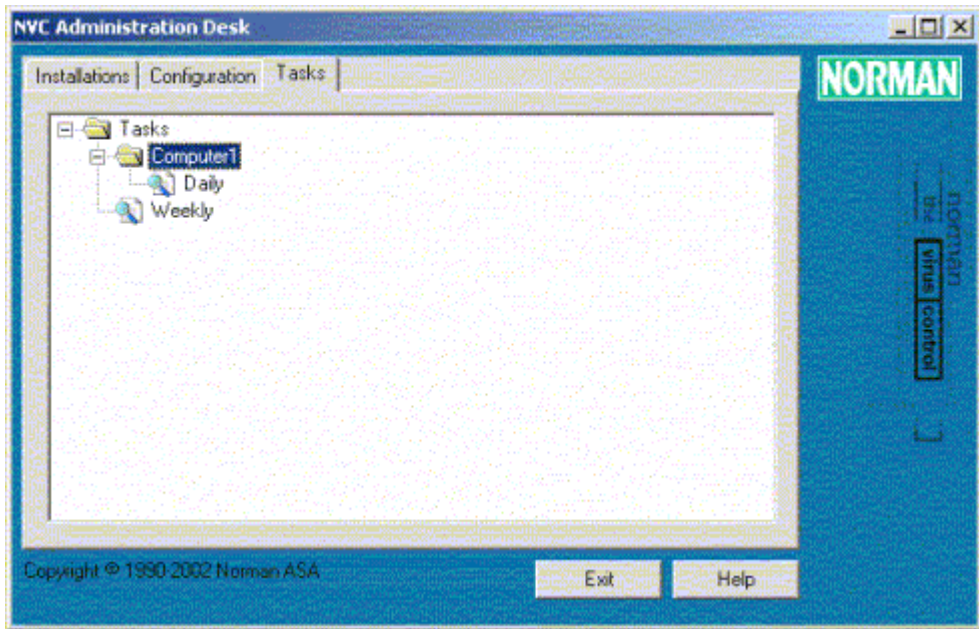
1. Open NDesk from the ...\\Norman\\Nvc\\Bin folder.
2. Go to the tabbed dialog **Tasks**.
3. Right-click and select New|Folder. Name the folder after the workstation that you want to assign tailor-made task(s), for example “Computer1”.
4. Right-click the folder that you have created for “Computer1” and select New|File. This operation will launch the Task Editor, which is described in the *Reference Guide* (<http://www.norman.no/manuals>).
5. Select you preferred settings for the task file and save. As long as the file resides in the folder for ...\\Distrib\\Nvc\\Tasks\\Computer1 folder you may name it anything you like.

## How it works

1. The tailor-made task folder(s) and file(s) you create in NDesk, will reside in the ...\\Distrib\\Nvc\\Task folder on the server. When a machine logs on to the server, NVC will first look for a folder with a name that matches the machine name. You can create only one task folder per machine, but each machine specific folder may contain several task files.
2. If no machine specific task folder exists, NVC will select any task file that resides in the ...\\Distrib\\Nvc\\Tasks folder.

**Example:** The task view in NDesk folder contains one file called Weekly and one folder called Computer1. The Computer1 folder contains one file called Daily. When Computer1 logs on to the

server, it will pick up and use Daily. When Computer2 logs on to the server, it will pick up and use Weekly.





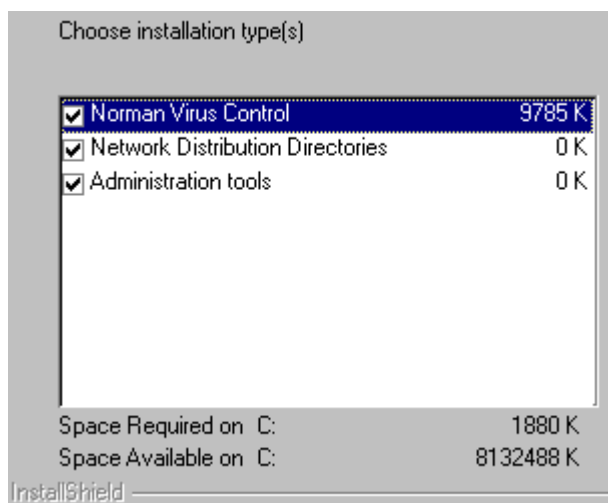
# Updating networks not connected to the Internet

Because it's required by internal security regulations or imposed by legislative measurements, some network environments are not connected to the Internet. To update NVC5 installations in this situation, you can follow these guidelines:

1. Install NVC on a workstation that is connected to the Internet. It doesn't matter whether this is Windows95/98/Me/NT4/2000/XP or 2003.

Run setup and follow the instructions on the screen. Make sure you enter the corporate key in the **Authentication key** field.

2. Choose all three alternatives during setup (Norman Virus Control, Network Distribution Directories, Administration tools).



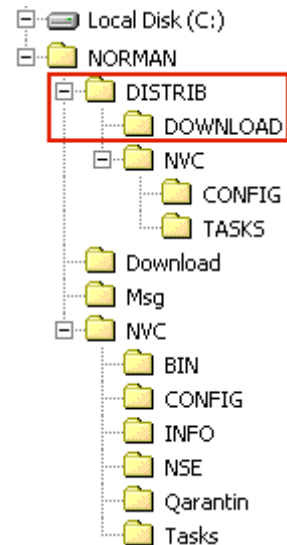
3. Run `niucf.exe` from the local `[Normanpath]\NVC\Bin` folder and follow the

instructions on the screen. You should now select all products, platforms, and NVC languages that need to be updated in the network.

4. Each time you run Internet Update, the updated packages are downloaded to the folder  
[Normanpath] \Distrib\Download. To update the network, copy the updated content from this download subdirectory to an optional media, and paste it into the corresponding folder on the distribution server.

**Note:** As you may see from the screen dump, your Norman directory structure has two download directories; one for the local files [Normanpath] \Download and one for files to be distributed [Normanpath] \Distrib\Download

Make sure you use the files from the latter directory.



---

# Messaging

## Introduction

This chapter provides a technical description of the messaging system as it is implemented in NVC v5. It describes the protocol ‘stack’ up to the application level, but stops short of describing the message classes and subclasses. Please refer to the *Reference Guide* for this information.

NVC v5 uses two different network mechanisms. For installation, distribution and configuration, regular file sharing using drive letters or UNC paths is employed. For messaging and logging, a proprietary network protocol layer has been devised. This section covers the latter.

The messaging system is part of the basic installation of NVC v5 on a networked computer, and is active as soon as the resident agent is running.

## The messaging core and the agent

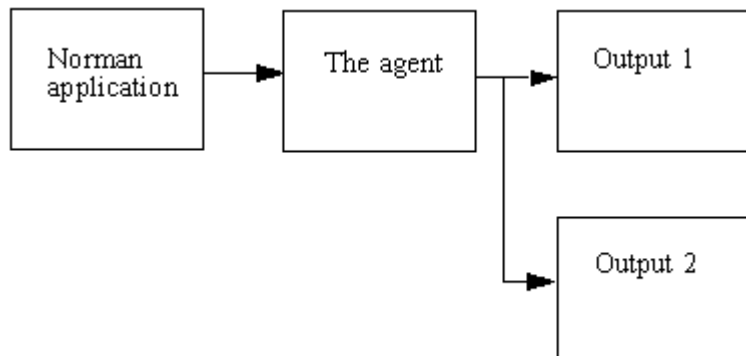
### NVC messages

All messaging and logging in NVC v5 uses a standard message object. A message object contains information about the creating application, enumerated information about what kind of message it is, and additional dynamic information (informational text etc.) A ‘class’ mechanism provides for filtering of messages. A special ‘session’ mechanism can group related messages into sessions, thereby increasing message handling efficiency. All messages are timestamped. Some message handling modules will remove old messages based on administrator settings, thereby preventing obsolete messages being forwarded, logged etc.

## The agent

The agent is a resident background process that is initiated as soon as NVC is started on any system. The agent has many functions. One of the functions is to open a listening pipe and receive messages from any Norman application on a particular system. Another function is to look for output modules to send messages to. These modules are implemented as DLLs, and will present a messaging filter to the agent when loaded. When the agent receives a message, it is passed on to those modules that have the appropriate filter settings.

This figure illustrates a basic logging scenario:



### Application input

Since all messaging is common for NVC applications, a host does not have to worry about logging and alarming. The host will just pass any messages to the local agent and forget about it. An administrator will configure the system so that messages of various importance will be passed to the correct output modules.

## Output modules

The traditional way of logging is to write messages to a log file. In NVC5, this functionality is taken care of by one of the standard output DLL modules that are loaded by the agent. Hence, messages received by the agent are passed on to the log file output module. The administrator can configure what kind of messages will be written to the local log file.

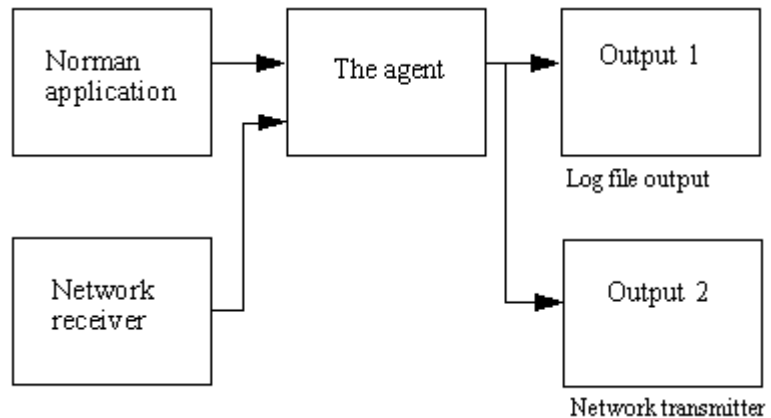
Other output modules may include logging to an NT event log, sending of SNMP traps, sending of SMTP mail messages, and sending of SMS alerts via cellular phones.

## Messaging in networks

The logging mechanism described above provides for a dynamically expandable implementation of logging and messaging. A number of output targets can be created, and the whole messaging architecture is abstracted from the host applications.

The messaging architecture also includes provisions for messaging across networks. The rest of this chapter will cover the planning, configuration and use of NVC messaging in networks.

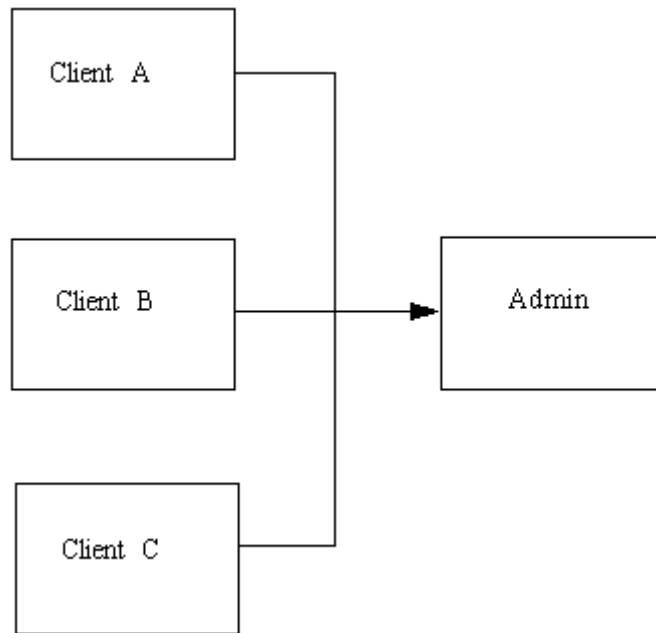
Consider an expanded version of the previous figure:



In this expansion, the system includes a network receiver which receives messages from the network and passes them on to the agent in the same manner that any local application would do it. An additional output module is a network transmitter which passes messages on to a network receiver somewhere else. By adding these two modules, the messaging system can now be configured to send certain messages to a central location. The advantages of this should be obvious.

## Example 1: Basic network messaging configuration

A network administrator configures network clients by distributing 'blocks' of configuration data using a configuration file. One of these 'blocks' belong to the network receivers and transmitters in the messaging system. The figure below illustrates a simple network with an administration console and three clients. The administration console can be any system with NVC v5 installed.

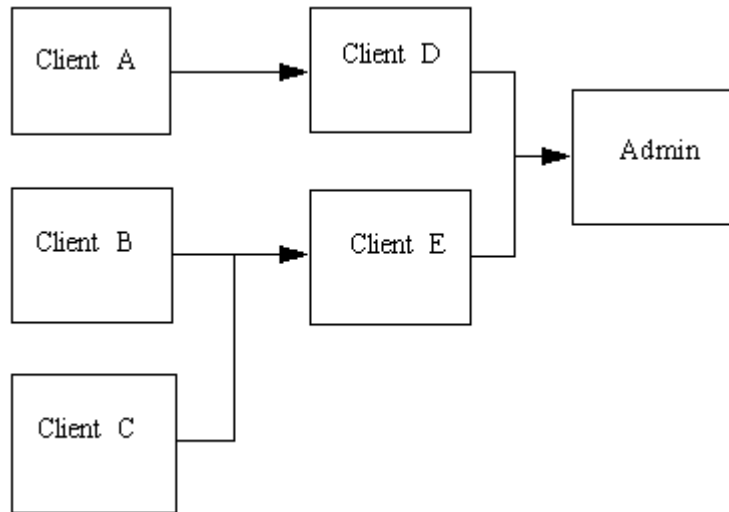


On this figure, the client has received a configuration block instructing their network receiver to forward messages to the Admin machine depending on the message filtering. The Admin machine has network messaging turned off, which causes network messages to be terminated there. A log file output module at the Admin machine will (again depending on filtering) write messages from the network clients as well as locally generated messages.

## Example 2: Network messaging with routing

In a larger network, an administrator may wish to organize the messaging using routing. The figure below shows a configuration where clients D and E send messages to the admin system, client A sends messages to client D, and clients B and C send messages to client E.

This approach will distribute the traffic across a network. It is also possible to employ different output modules on the various machines. One example would be if the administrator does not want any local logging on the clients, and wants messages from Clients B and C to generate SMTP mail messages in addition to forwarding the messages to the Admin system. In such a case, an SMTP module can be enabled on Client E, the file logging be disabled on all clients, and file logging be enabled on the Admin system. The variations are numerous, and with a little bit of planning, the network administrator can take advantage of the available possibilities.



## Technical considerations

The figures in the examples above shows network configurations consisting of systems that are statically wired to a network and



always on-line. The real world, however, is a bit more unforgiving. Having a second look at figure 3, one can easily imagine what would happen if client E is a portable system and the owner brings it along on a 2-week safari. Not only will all events on that particular machine not be reaching the Admin system, but no messages from clients B and C will reach it either.

First of all, the above situation should be avoided when planning the messaging in the first place. It is obviously not a good idea to have a portable machine as a router in a network. Having pointed that out, it is not really a major problem that client E is unavailable for a period of time. The only result is that message will be delayed and possibly expire while the system is off-line.

The way it works is quite simple: the network transmitter output module maintains a local message store. If a message cannot be transmitted, it is stuffed into the store for later transmission. Every time a message is transmitted successfully, the transmitter will check to see if there are any pending messages in the local store. If there are, these messages are transmitted as well. In the case of the safari laptop, messages will be accumulating in the transmitter stores of clients B and C until the first time they are able to successfully send a message to client E. When that happens, all messages that have been stored are forwarded to client E and then again to the Admin system.

When the transmitter transmits the store, it removes all messages that are older than the threshold level determined by the administrator. Old messages may therefore be lost when no local logging is taking place. The administrator will have to keep this in mind when configuring the messaging.

The above examples illustrates a typical ‘many-to-one’ structure. It is, however, possible to transmit to more than one system. Doing this, a level of redundancy can be established. However, it is perfectly possible that a message may reach a central system via different paths if misconfigured. The result will be that a message is handled more than once at the terminating system, creating duplicate entries in the log. A time-to-live counter in the protocol prevents endless looping, though.

## Details on the protocol

The NVC5 messaging system will work over both IP and IPX networks. It is connection based, using TCP/IP and/or SPX. When the agent starts the network receiver, it will establish listening threads on the available stacks. IANA has assigned port 2868 to the Norman NPEP protocol over IP. For SPX, Novell has assigned socket 34389 (hex 0x8655) to Norman.

The configuration block for the message transmitter specifies the name or address of the next system in the message chain. This can be an IP or IPX address. It is perfectly possible to use any system in a message chain as a protocol 'bridge' between IP and IPX. It is also possible to forward a message over both protocols if available.

The network messaging system uses its own proprietary protocol 'stack' on top of the established TCP/IP or SPX connection. This 'stack' wraps one or more messages in an NPEP header which holds a signature, some addressing information and an integrity checksum. In addition, each message also holds addressing information. It is therefore theoretically possible for two separate messaging environments to share a common part of a messaging chain.

Before the NPEP data unit (holding one or more messages) is being transmitted, it is encrypted to prevent unauthorized access to the data. The encryption uses a key that can be set by the administrator. This ensures that machines belonging to different networks do not send messages to other networks by mistake.

## More on security

As mentioned above, the network administrator will generate a key to be used in the configuration of the network messaging receivers and transmitters. Any incoming message sessions that have not been encrypted with the right key will be rejected.

The encryption uses two separate symmetrical algorithms on top of each other. The top algorithm applied is Blowfish, using a user determined 64-bit key. Before this, the data is scrambled with a proprietary algorithm in order to make it difficult to apply brute-force methods on the Blowfish layer.

The data itself is mostly enumerated binary data. The importance level of the data itself should warrant that the above encryption and verification methods are more than enough to secure the transferred data.

The listening threads will accept connections on the predefined Norman ports. A number of measures have been implemented to prevent unauthorized use of the ports. There is, as with any network protocol, a theoretical possibility that a message transmission session can be captured and duplicated (re-transmitted). The ramifications of this is quite limited, though, since it will only result in duplicated messages reaching the target systems.

## Broadcasting

Broadcasting messages to clients in a network can be useful for a variety of reasons. Internally, NVC5 will use this capability to have an alternate way of sending configuration info and administrative polls asynchronously. As NVC5 develops, provisions for centrally initiated pop-up messages etc. may be implemented.

Broadcasting is not necessarily available in IPX and IP environments due to router restrictions or other protocol behavior. Also, blind broadcasts can be quite bandwidth costly. The NVC5 network messaging system maintains its own broadcasting scheme on top of the network protocols. The following is a brief explanation on how it works.

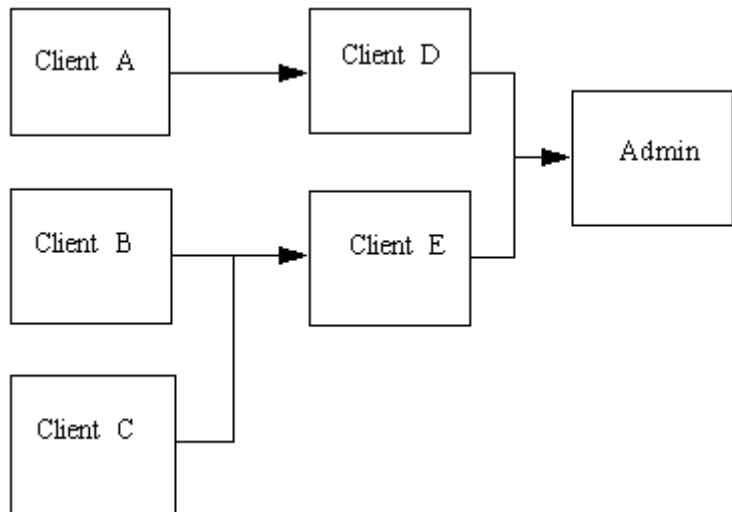
There are a couple of message types that are important when looking at how broadcasting works.

First of all, the agents will generate frequent 'I am alive' messages. These are messages with no other purpose than to tell all systems 'downstream' in a message chain that the client is up and running on a particular system.

When the agent is starting up, another special message is generated. This is the 'Starting up' message. As for the 'alive' message, the purpose is only to notify everybody down-stream that the agent on this particular system is being started.

Similarly, when the agent is being stopped, it sends out a 'I'm going down' notification.

Consider the following figure, which is similar to the one in the previous example:



### Building address lists

In this example, client A is started. This causes the agent on client A to send an 'I'm starting up' message to client D, and ultimately to the admin system.

Every time a network message transmitter forwards a message that it received from the network (i.e. not generated by a local application), it collects the address of the originator in a list in memory. This address list will then contain the addresses of all systems that it has received messages from. This list is called the 'broadcast address list'. If an address already exists in the list, it is not added. If the message is a 'I'm going down' message, the address of the originating system is removed from the list.

The address list is not stored on disk, but is erased when the local agent client is stopped.

In the example above, the address of client A is stored in the address list of client D. The address of client D is stored in the list of the admin system. It is now possible to send a broadcast message from the admin system to clients A and D.

### Broadcasting a message

A broadcast message is a message that is identified by a special flag. When this flag is set in an incoming message, the message

transmitter will not only forward the message down the message chain as usual. Instead, it will:

- Transmit the message to each of the addresses in the broadcast address list
- Transmit the message down the chain as usual
- Store the message in a local broadcast message store
- Remove those addresses from the broadcast address list that it is unable to send a broadcast message to

The purpose of the local broadcast message store is to be able to update a new client in the network with any recent broadcast messages. In the above example, when client A sends it first message to client D, it is not only being registered in client D's broadcast address list. It will also be given all the messages that are currently being held in client D's broadcast store. Client A will only accept any broadcast messages that it does not already have in its own store.

The purpose of sending the broadcast message down the normal chain, is to ensure that other branches of the network also receives the message. An example would be if client D generates a broadcast message. It will be sent to client A and down to the admin system. The admin system would then send the message backwards up to client E. It would ultimately reach clients B and C.

# Appendix A

PushWiz is the predecessor of NDesk (page 31) for distribution on a Windows NT server. This appendix presents the old PushWiz documentation.

## Distributing NVC to Windows NT/2000/XP workstations using PushWiz

**Note:** You can use the same procedure as for Windows 95/98 if the users have local administrator's rights.

PushWiz is a Windows program for distributing NVC to selected Windows NT/2000/XP workstations in a network.

To run PushWiz, make sure that these conditions are met:

1. The target machine is a member of a domain.
2. A configuration file that points to the distribution location.
3. Administrator's rights for all domains you're pushing NVC to.
4. Set up an user account for the agent.

**Note:** It is of utter importance that use the correct syntax when you enter the information in the **Account name** field in PushWiz.

The syntax is: `domain\user`

This procedure uses the program PushWiz.

Run `pushwiz.exe` from `<norman>\nvc\bin` and follow the instructions on the screen.

The program starts by enumerating the network and building a list of the machines on the network. This list is then used later in the program for the user to select which machines to install to.

The wizard comprises five screens where information is entered. The following is a description of information that needs to be entered in these screens.

## Security details

Information regarding the location and access of the files required for distribution is entered here.

*Customer ID:* The licence number as supplied with the NVC installation.

*Account name:* User account with administrator's privileges. The account must have been created on the domain's PDC. If you enter an account name that doesn't exist in the current domain, the account's domain name must precede the account name.

*Account password:* The password associated with the account name.

*Confirm password:* Re-enter the password. These two passwords must match.

*Server name:* The name of the machine that is the distribution point for NVC.

*Share name:* The name of the share assigned to the Norman directory on the distribution server. This will probably be 'Norman'.

**Note:** If the back button is pressed, the password fields are cleared and will have to be entered again. This is a security measure.

## Login details

Information regarding the distribution to non-NT machines via login script using SelfXWiz.

This section should be left as default, as editing the login script is not relevant when you employ PushWiz as distribution tool.

However, if you also use SelfXWiz to distribute NVC to non-NT/2000/XP machines in your network, you may add the path to the distribution package (nvc5w32.exe) to the login script in this section.

**Note:** The login script file must exist at this time.

## Script files:

login.bat for Windows networks



login.bat for Novell networks

Enter the location and file name of the SelfXWiz output file.

If Install to NT machines is not checked, the remaining fields are active. To install to NT machines only (recommended) go straight to the next page.

To utilize distribution via login script, the following fields require completion.

*Login server:* The name of the machine that is the primary login source.

*Script file path:* The full path of the folder that holds the login script.

*Script file name:* The name of the login script file.

*Edit Login Script:* Must be pressed. This allows the user to enter a line in the login script or invoke the self-extracting installation file.

**Note:** This is only required for installing to non-NT/2000/XP/2003 machines.

## Distribution details

Information regarding the distribution NT machines directly.

*Machine name:* Enter the name of the individual machine. It's not necessary to include the leading slashes (\\).

*Install share name:* Enter a name of an existing share on the target machine, for example c\$\norman.

*Root directory:* Enter the name of the directory on the machine you're installing to, for example c:\norman.

## Install

To trigger the distribution press the **Finish** button. The progress bar will indicate the progress of the distribution.

After the agent is installed on the client, it takes approximately 10 minutes before NVC is fully installed.

# Appendix B

PushWiz is the predecessor of NDesk (page 69) for distribution on a Novell NetWare server. This appendix presents the old PushWiz documentation.

## NetWare - Distributing NVC to Windows NT/2000/XP workstations

**Note:** You can use the same procedure as for Windows 95/98 if the users have local administrator's rights.

PushWiz is a Windows program for distributing NVC to selected Windows NT/2000/XP workstations in a network.

To run PushWiz, the following requirements must be met:

1. The target machine must be a member of a NT domain.
2. A configuration file that points to the distribution location.
3. Administrator's rights for all domains you're pushing NVC to.
4. Set up an user account for the agent.

**Note:** It is of utter importance that use the correct syntax when you enter the information in the **Account name** field in PushWiz.

The syntax is:

```
.nvc5.administration.thecompany  
or  
.cn=nvc5.ou=administration.o=thecompany
```

This procedure uses the program PushWiz.

Run `pushwiz.exe` from `<norman>\nvc\bin` and follow the instructions on the screen.

PushWiz is best run in a Windows network using domains. However, it may work in a Novell environment provided that the target machines are members of a NT domain as well.

The program starts by enumerating the network and building a list of the machines on the network. This list is then used later in the program for the user to select which machines to install to.

The wizard comprises five screens where information is entered. The following is a description of information that needs to be entered in these screens.

### **Security details**

Information regarding the location and access of the files required for distribution is entered here.

*Customer ID:* The licence number as supplied with the NVC installation.

*Account name:* The account must have been created on the NetWare server, with read and file scan access to the Norman directory\distrib folder. Remember the correct syntax for the user account, described in step 12 of the installation procedure.

*Account password:* The password associated with the account name.

*Confirm password:* Re-enter the password. These two passwords must match.

*Server name:* The name of the machine that is the distribution point for NVC.

*Share name:* Path to the norman directory on the server

**Example:** In the server name section you have entered FS1, which is the server name in our example. In the share name field you should enter \volume\normandirectory.

**Note:** If the back button is pressed, the password fields are cleared and must be re-entered again. This is a security measure.

### **Login details**

Information regarding the distribution to non-NT machines via login script using SelfXWiz.

This section should be left as default, as editing the login script is not relevant when you employ PushWiz as distribution tool.

However, if you also use SelfXWiz to distribute NVC to non-NT/2000/XP machines in your network, you may add the path to the distribution package (nvc5w32.exe) to the login script in this section.

### **Script files:**

login.bat for Windows networks

logon.bat for Novell networks

Enter the location and file name of the SelfXWiz output file.

If Install to NT machines is not checked, the remaining fields are active. To install to NT machines only (recommended) go straight to the next page.

To utilize distribution via login script, the following fields require completion.

*Login server:* The name of the machine that is the primary login source.

*Script file path:* The full path of the folder that holds the login script.

*Script file name:* The name of the login script file.

*Edit Login Script:* Must be pressed. This allows the user to enter a line in the login script or invoke the self-extracting installation file.

**Note:** This is only required for installing to non-NT/2000/XP machines.

### **Distribution details**

Information regarding the distribution NT machines directly.

*Machine name:* Enter the name of the individual machine. It's not necessary to include the leading slashes (\\).

*Install share name:* Enter a name of an existing share on the target machine, for example c\$\norman.

*Root directory:* Enter the name of the directory on the machine you're installing to, for example c:\norman.

## Install

To trigger the distribution press the **Finish** button. The progress bar will indicate the progress of the distribution.



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