



NETPRESENTER[®]
VISIBLY COMMUNICATING VITAL KNOWLEDGE

Internal Communication Software

Netpresenter

Implementation manual for system administrators
(for version 4.0 Players, 3.1 Editor)

Content

| | | |
|------|---|----|
| 1 | Introduction..... | 5 |
| 2 | Schematic overview..... | 6 |
| 3 | Set-up of (test) environment for Netpresenter..... | 8 |
| 4 | Installation Instructions..... | 9 |
| 4.1 | Introduction..... | 9 |
| 4.2 | Installation as a demo package..... | 9 |
| 4.3 | Network installation..... | 10 |
| 4.4 | Customizing the netpres.ini file..... | 12 |
| 4.5 | Impose Screen Saver Settings using group policies..... | 12 |
| 4.6 | Uninstall..... | 13 |
| 4.7 | System changes after installation..... | 14 |
| 4.8 | References..... | 15 |
| 4.9 | Frequently asked question..... | 15 |
| 5 | Capita Selecta..... | 16 |
| 5.1 | Network load..... | 16 |
| 5.2 | Personal Content..... | 16 |
| 5.3 | Link with content management systems..... | 16 |
| 5.4 | Publication of channels..... | 17 |
| 5.5 | Locked desktops..... | 17 |
| 5.6 | Screen Saver on NT systems where no-one has been logged on..... | 17 |
| 5.7 | Unicode text..... | 17 |
| 5.8 | Synchronize slide change with the duration of a video file..... | 19 |
| 5.9 | Netpresenter Editor and Asian Language support..... | 19 |
| 5.10 | ScreenSaverGracePeriod..... | 20 |
| 6 | Configurable Options (Netpres.ini)..... | 21 |
| 6.1 | Introduction..... | 21 |
| 6.2 | Guidelines..... | 21 |
| 6.3 | Detailed description of every keyword..... | 21 |
| 6.4 | Mapping of .ini files in the Windows Registry..... | 29 |
| 7 | The Netpresenter Script Language..... | 31 |
| 7.1 | Introduction..... | 31 |
| 7.2 | Channel..... | 31 |
| 7.3 | Sample channel files..... | 48 |
| 8 | Netpresenter add-on modules..... | 49 |
| 8.1 | Introduction..... | 49 |
| 8.2 | Installation Procedure..... | 49 |
| 8.3 | Tuning the Queue Management display..... | 50 |
| 8.4 | Integration with a Queue Management System..... | 53 |
| 9 | Use of the Message Server..... | 54 |
| 9.1 | Quick overview..... | 54 |
| 9.2 | Foreign language support..... | 55 |
| 10 | Network Load Study..... | 56 |
| 10.1 | Introduction..... | 56 |
| 10.2 | How did we measure the network load..... | 56 |
| 10.3 | SMB..... | 57 |
| 10.4 | HTTP..... | 60 |
| 10.5 | FTP..... | 62 |
| 10.6 | Conclusion:..... | 63 |
| 11 | Recommendations for Terminal Server based systems..... | 65 |
| 11.1 | Personalize the store..... | 65 |
| 11.2 | Handle personalised windows directories..... | 65 |
| 11.3 | Increase slide times..... | 65 |
| 11.4 | Use templates..... | 66 |
| 11.5 | Optimize bitmap sizes..... | 66 |

| | | |
|------|----------------------------------|----|
| 11.6 | Avoid CPU intensive effects..... | 66 |
| 11.7 | Lowering the priority..... | 67 |

References

- Ref 1 Netpresenter Software
Overview
- Ref 2 Netpresenter Message Server
Installation Instructions

(These documents can be found at www.netpresenter.com/download)

Contact

Phone Europe +31(0)46-4370886

Phone USA +1-917-210-8050

support@netpresenter.com

www.netpresenter.com

1 Introduction

This manual is written to aid the system administrator who has been assigned to deploy Netpresenter in an organization.

The Netpresenter software principally consists of a Screen Saver and a Desktop (Pop-up) Player. Both play back the presentation. See (Ref.1 "Netpresenter Software Overview"). A third application is the Netpresenter Editor that will be used by your communications department to create the presentations.

Chapter 2 gives a schematic overview, which should clarify how the applications fit together.

Chapter 3 describes how you could setup an environment suited for prototyping the installation of Netpresenter.

Chapter 4 is about the installation, on single PC's as well as network installations.

Chapter 5 answers several questions a system administrator might have

Chapter 6 describes all details what options can be configured

Chapter 7 is about the Netpresenter scripting language.

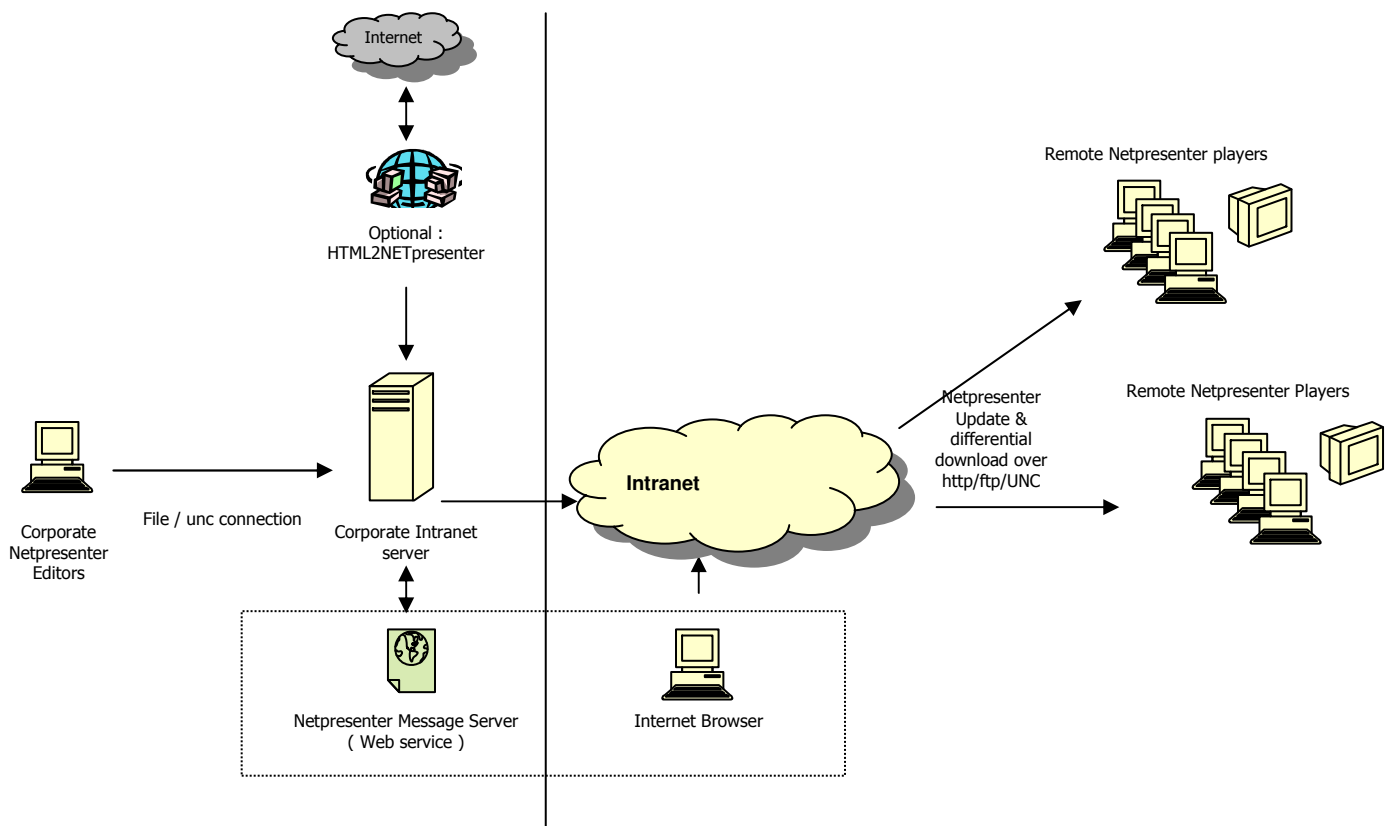
Chapter 8 describes Netpresenter add-on modules

Chapter 9 is a short introduction to our message server

Chapter 10 quantifies our statements about the (lack of) network load.

2 Schematic overview

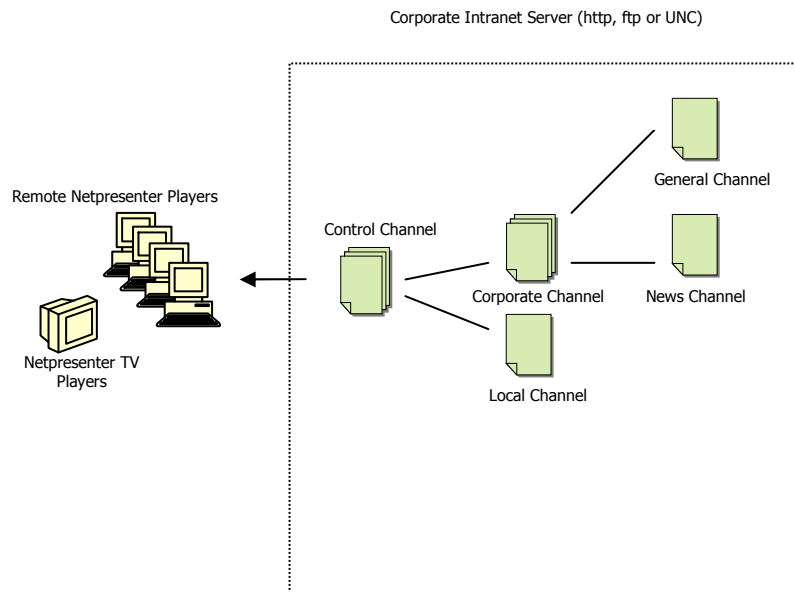
The scheme below shows how Netpresenter could fit into the infrastructure of a large company with several locations geographically spread.



This picture indicates how publications are produced using the *Netpresenter Editor* and published to the Intranet/Internet server. Optionally the *Netpresenter HTML2NETpresenter* application can be used to renew information automatically.

The Netpresenter Message Server allows authorized persons to add important information to an existing presentation. They can use any browser with access to the published location and do not need to have the Netpresenter Editor installed. *The Netpresenter Players* on client PC's approach the publications via HTTP, FTP or UNC links.

Netpresenter supports *personalization* via the concept of *sub channels*. A main channel may contain links to other channels that are controlled by different people at different locations (and stored on different servers). This concept is often used by companies that use corporate channels as well as channels local to a department or location. See the image below:



3 Set-up of (test) environment for Netpresenter

You will probably have installed the Netpresenter demo software package on your local machine first. (Also see the chapter on [Installation Instructions](#)).

For most installations you will now have enough knowledge to copy a channel to a remote location and deploy Netpresenter.

To explore more complex situations (more channels maintained by different departments at different servers, possibly located at geographical distant locations) try to set up an environment as follows:

1. Install Netpresenter (including editor) on one test machine
2. Create a directory on a (Intranet) server that your audience can access via HTTP, FTP or UNC
3. The person operating the editor should have the right to write files via UNC paths
4. On this server, create a subdirectory for each sub channel that has to be published.
5. Publish the sub channels to the directories on this server (use File/Copy of the editor)
6. Start a player on any PC that has read access to the location of the channels
7. Select "Properties" (e.g. via the toolbar, 2nd icon on the right)
8. Select the tab "Channel"
9. Click the URL or File button to enter the correct URL or UNC path to one of the sub channels
10. Verify that the player displays the channel correctly
11. Verify the other sub channels as well
12. Create a compound channel according to the example mentioned below. You can use any text editor, for example notepad. Note that channels like below may be created automatically. We can provide you with scriptable COM components upon request.

```
CHNL 1002
SLIDE "corporate channel"
BEGIN
  SUBCHANNEL "http://192.168.255.20/Channels/main/main.chn"
  ID 1
END
SLIDE "nl channel"
BEGIN
  SUBCHANNEL "http://192.168.255.20/Channels/nl/nl.chn"
  ID 2
END
```

13. Change the URL's so that they refer to the correct sub channels
14. Select this compound channel in the Player.
15. Verify that the Player show all channels
16. Set-up the update time of the Player ("check every .. Hours and .. Minutes" under the "Schedule" tab)
17. Change something to the sub channels with the editor, and publish this by using the File/Copy command of the Editor
18. Verify that the change is displayed within the update interval.

4 Installation Instructions

4.1 Introduction

This paper briefly describes how Netpresenter can be installed throughout a company

Installation of Netpresenter boils down to the following tasks:

- Actual copying of the files
- Determining the optimal configuration settings
- Changing the registry settings to select the Netpresenter screen saver
- Placing shortcuts at the appropriate places,
- Registering the `.chn` file association.

For demonstration purposes the Netpresenter software suite is shipped as a self extracting executable that uses the Microsoft Windows `.msi` installer technology. The self-extracting executable contains minimal Microsoft Installer redistributables and even installs on Windows 95B and Windows NT4SP3 systems.

Netpresenter will install successfully on the following systems:

Windows 95/98 SE/Me

Windows NT 4.0 SP3 or later

Windows 2000 SP1 or later

Windows XP

Requirements: 16Mb Ram, 2 Mb free Hard disk space, Internet Explorer 4.0 or later installed (Internet Explorer is usually installed as part of the standard Windows setup).

The Netpresenter installer does not attempt to upgrade system dll's.

For installation on systems that do not support any kind of Microsoft `.msi` support, we can also provide a custom installation tool (simple executable that should be called from a login script and makes the system changes needed).

The chapter "[System changes after installation](#)" details what files are being copied, what registry settings applied and what shortcuts are being set.

4.2 Installation as a demo package

This single-exe installation package (`netpresenter.exe`, downloadable from <http://www.netpresenter.com/files/netpresenter.exe>) is intended for single PC installations. It will install the whole Netpresenter suite, including the Netpresenter Editor (which is usually installed at a few PC's only), and a demo channel.

It contains the Netpresenter Installation and Microsoft redistributables for upgrading the Windows Installer version to version 1.1 if needed.

4.3 Network installation

Probably the easiest way to install Netpresenter is using group policies from a Windows 2000 server.

For networked installations we ship a package (available at <http://www.netpresenter.com/files/installer.zip>) that contains the following files:

```
Netpresenter.exe
Netpresenter.ini
Instmsi.exe
Instmsiw.exe
Netpresenter.msi
MsiTransform.exe
```

If all client systems already have the Windows Installer version 1.1 or better installed, you would only use the `Netpresenter.msi`.

The Netpresenter msi package can then be distributed via GPO (group policies), Microsoft System Management Server (SMS) or any other scripting or distribution solution (e.g. KIX), or just add a command like

```
"msiexec /q /i \\<server>\<share>\Netpresenter.msi allusers=2"
```

to a login script.

When you start `Netpresenter.exe` or `Netpresenter.msi` without any options, this will install all Netpresenter features on the system (full installation, including a demo channel). If the package is installed in silent mode (network installation), the package will (by default) only install the player and Screen Saver. For other types of installations the `ADDLOCAL` property can be used in combination with features mentioned in section 4.3.2. Check the command line example for details. How to customize the application is described later in section 4.3.3.

If there are clients in the network which do not have Windows Installer version 1.1 you would use `Netpresenter.exe`. `Netpresenter.exe` checks the installer version on the client and uses either `instmsi.exe` (Windows 9x) or `instmsiw.exe` (Windows NT) to upgrade the clients to Windows Installer version to 1.1, if needed. After upgrading, `Netpresenter.exe` will launch the `Netpresenter.msi` package to complete the installation, Windows Installer parameters can be added to `Netpresenter.ini` file. Add the key-value pair `CmdLine=<parameters>` to the end of the `Netpresenter.ini`, parameters are discussed in 4.3.2.

(Note that `Netpresenter.ini` belongs to the installation package and is not the same as `netpres.ini`, which is the configuration file for the Netpresenter desktop player or screen saver).

4.3.1 Distribution using the group policy editor

On Windows 2000 Server systems with Active Directory you can distribute a package to client PC's using the group policy editor. For details please refer to your Microsoft documentation.

In short:

- Login as domain administrator
- From the Start Menu select "Administrative Tools"
- Select "Active Directory Users and Computers"
- Select the Group or Organizational Unit that contains the user's that you would like to install Netpresenter for
- Click it with your right mouse button and select "properties"
- Select the tab named "Group Policy"
- Select the Group Policy Object you'd like to change
- Select "Edit"

- Select "User configuration"
- Select "Software Installation" from the software node.
- Click with the right mouse button and select "New package"
- Browse to the location that contains the .msi file and select it

4.3.2 Command line options

The Netpresenter .msi file contains the following installable items (named 'features' in literature about the Microsoft Installer Technology):

| Application | Name of this feature in .msi file |
|---------------------------------|-----------------------------------|
| Netpresenter Screen saver | Screen Saver |
| Netpresenter Desktop Player | Player |
| Netpresenter Editor | Editor |
| Netpresenter Configuration tool | Config |
| Netpresenter Demo Channel | Demo |

To install Netpresenter for "All Users" (machine based installation) add the property "ALLUSERS="2"" (without the outer quotes) to the command line.

Silent installation:

```
Msiexec /q /i Netpresenter.msi ALLUSERS="2"
```

Note: If you are using the Netpresenter.exe add "CmdLine=/q /i" (without quotes) to the Netpresenter.ini. Netpresenter.exe will call msiexec to install Netpresenter you do not need to start it manually. This works for all msiexec parameters

Installation which shows a progress bar:

```
Msiexec /i /qb-! Netpresenter.msi
```

Installation of the Screen saver only:

```
Msiexec /q /i Netpresenter.msi ADDLOCAL=screensaver
```

Installation of the Player, Screen saver and demo:

```
Msiexec /q /i Netpresenter.msi ADDLOCAL=screensaver,player,demo
```

Installation of Player and Screensaver for all users in c:\apps:

```
Msiexec /q /i Netpresenter.msi INSTALLDIR="c:\apps" ALLUSERS="2"
```

The installer reboots the system automatically if needed. To prevent this, set NO_REBOOT_9X, as follows:

```
Msiexec /q /i Netpresenter.msi NO_REBOOT_9X="TRUE"
```

Please note that when installing Netpresenter this way on Windows 9x systems, the newly installed Netpresenter screen saver will not be displayed in the list of screen savers until the system has rebooted.

To set the channel while installing (new installations only):

```
msiexec /q /i \\s1\install\netpresenter.msi NP_CHANNEL=\\s1\Netpresenter\index.chn
```

4.3.3 Using a .mst file (transform)

To be able to distribute different installations to different groups from a single .msi source, .mst files give you the flexibility to do so.

You would make a different .mst file for each group with unique installation requirements (for example to make groups of people that subscribe to the same channel).

The `.mst` file is a kind of a template file that effectively contains changes with the original `.msi` file. You will not have to make a new `.msi` file for each group and you will not have to redo this whenever you would want to update the software.

Generate an `.mst` file the way you prefer and start an installation as follows:

```
Msiexec /q /i Netpresenter.msi /T netpres.mst
```

A detailed explanation of the use of `.mst` files is beyond the scope of this document (see references).

4.4 Customizing the netpres.ini file

All Netpresenter client settings are stored in a single ini-file called `netpres.ini` which is located in the windows directory. To customize the package take a `netpres.ini` from a system configured correctly.

To add the optimized `netpres.ini` to the package there are three options:

1. Open the package using Orca or some other tool able to display and modify the installer tables and edit the inifile table directly.
2. Use `MsiTransform`. This tool is created by Netpresenter to automate the process of editing the inifile table: Simply Launch this exe, select the `.msi` file and the `.ini` file to be merged and the `.msi` file will be updated to include the modified `.ini` file.
3. Use a transform e.g. `Msiexec /q /i Netpresenter.msi /T netpres.mst`

4.5 Impose Screen Saver Settings using group policies

On installations with a Windows 2000 (or newer) server, one may enforce Screen Saver settings from a central location via group policies as well. This will supersede any settings made by the installation package on each PC locally):

One way to do this is as follows:

- Login as domain administrator
- From the Start Menu select "Administrative Tools"
- Select "Active Directory Users and Computers"
- Select the Group or Organizational Unit that contains the user's that you would like to install Netpresenter for
- Click it with your right mouse button and select "properties"
- Select the tab named "Group Policy"
- Select the Group Policy Object you'd like to change
- Select "Edit"
- Select "User Configuration"
- Select "Administrative templates"
- Select "Control Panel"
- Select "Display"
- Set "Activate Screensaver" to "enabled"
- Set the "Screensaver executable name" to "Netpresenter.scr"
- Optionally also set the timeout period.

Using group policy settings to impose screen saver settings is best in an environment with roaming profiles, since in such an environment the installation package can only change the *current* user's screen saver settings.

Tip: For testing use "gpupdate.exe" on a client to force reloading group policy settings. When not using this it may take hours before the changes have replicated to the clients.

4.6 Uninstall

Netpresenter can be uninstalled from by selecting “remove” from the (Add/Remove Software applet in Control Panel).

For a silent uninstall of Netpresenter call

```
MsiExec /q /x Netpresenter.msi
```

4.7 System changes after installation

During the installation, the Screen Saver is copied in the Windows directory and the other files will be stored in the <Program Files>/Netpresenter directory. Shortcuts to the applications will be added to the start menu and the current Screen Saver will be set to the Netpresenter Screen Saver (if allowed by your policy settings!). The complete installation (including editor, excluding channels) is 1.31 MB large). No dll's will be copied to the local system.

After a complete installation (including the editor) the following files will have been copied:

In the installation directory:

| | |
|--|---|
| NetEd.exe | The editor. To create presentations |
| NetEd.hlp | The editor's help file. |
| NetPlay.exe | The player |
| NetPlay.hlp | The player's help file. |
| NetProp.exe | Separate application for maintaining the .ini settings of the Netpresenter applications. |
| NpAgent.exe | Background process necessary on NT systems to display hyperlinks on the default desktop. (see the chapter on locked desktops) For installation on Windows 9x systems is this file not necessary and will not be installed. |
| Alert1024.jpg | Bitmap file which is being used to display an error message e.g. if the Netpresenter player cannot open a channel. |
| Startup.chn | The channel that is displayed shortly when starting up the editor. |
| Startup\Back1.jpg Startup\Back2.jpg | Bitmap files that are used with the channel mentioned above. |

In the windows directory:

| | |
|------------------|--|
| Netpresenter.scr | The Screen Saver.. |
| Netpres.ini | Netpresenter configuration file. See appendix 2 for an explanation of the keys used. This file is not necessary when using the IniFileMapping (see appendix 1) |

In the installation directory are also the following directories:

| | |
|---------|---|
| Store | With a default installation the presentations are cached here. By central caching on the PC multiple caching when more people using the same PC is prevented. |
| Monitor | This directory is used on NT systems for the communication between the Screen Saver and the NpAgent (see elsewhere). |

The following registry settings will also be changed or added:

All users under HKEY_USERS, including the default user:

| | |
|---|--|
| .default\Control Panel\desktop\SCRNSAVE.exe =Netpresenter.scr (Note: On Windows 9x systems, this key is placed as SCRNSAVE.EXE in the system.ini file) | This key defines which Screen Saver is configured. For compatibility with older Windows versions, the filename will be stored in 8+3 file format (Netpre~1.scr). |
| .default\Control Panel\desktop\ScreenSaveActive =1 | This setting activates the Screen Saver. |

The following links (shortcuts) are added:

Documents and Settings\All Users\Menu Start\Programs\Startup (Note that the actual name is language and O.S. dependent):

Links to NetPlay.exe (minimized)

Links to NpAgent.exe (On NT systems only)

Documents and Settings\All Users\Menu Start\Programs\Netpresenter (language and O.S. dependent):

NetPlay.exe

NetProp.exe

NetEd.exe (if installed)

The .chn extension will also be associated with the Netpresenter player.

If the demo package is installed, a demo directory with a demo channel will also be added to the Netpresenter directory.

4.8 References

For details on how to use the Microsoft Installer please see the documentation provided by Microsoft

<http://support.microsoft.com/support/default.asp?SD=SO&PR=wininst>

For example: "Windows Installer: Benefits and Implementation for System Administrators", by Microsoft

Also see "Windows Installer Technology for System Administrators" by Darwin Sanoy and Jeremy Moskowitz, published by Wise Solutions and Realtimerepublishers.com

http://www.wise.com/ebook/ebook_chapters.asp

4.9 Frequently asked question

What happens if we use Novell?

Windows Installer is running locally on the client, it can be controlled by policies in a network with a Windows Domain Controller or Active Directory.

If a customer uses Novell he cannot benefit from these policies but the Windows Installer program is still running on the (windows) client.

No matter the operating system of the server, the Netpresenter image file can be located on a share on the server and the client computers may call it from a login script.

5 Capita Selecta

In this chapter we attempt to highlight some questions that may rise.

5.1 Network load

Presentations are published on file servers or intranet/internet servers. The Netpresenter Players (Player en Screen Saver) access these presentations through means of file sharing (UNC), HTTP or FTP. Because of scalability of the network HTTP or FTP are preferred.

The Netpresenter Players caches the presentations on the hard disk of the user. A presentation consists of one or more script files (.chn files) and the image and multimedia files, which are being used by the presentation.

At configurable time-intervals Netpresenter will compare the timestamps of the locally cached channel files with the timestamp of the original on the server. As soon as changes are detected, the locally cached file will be renewed. Images and multimedia files that are referred to by the channel will (optionally) be monitored as well.

Because of smart caching and the relatively small size of a channel file, network load is extremely low. A typical presentation (10 slides, 300kB including jpeg bitmap files), of which the textual contents changes daily, the network load is only a few Kbytes per client per day. Typically less than the network load caused by downloading one HTML page.

(Also see the chapter named "[Network Load Study](#)")

5.2 Personal Content

Larger companies often use different channels for each target group. There is often also a corporate channel published to everyone. This can be implemented by grouping the corporate channel and target group specific channels to one compound channel. Such a compound channel is pretty simple and can be crafted manually or generated by simple tools (such as a scriptable COM server we provide upon request).

If the channels where users are 'subscribed' to are unique per person, one can choose to automatically generate personal channels by using (script) tools which have access to the required information (such as to which target group stipulated persons belong)

Below an example of such a channel in the Netpresenter script language:

```
CHNL 1002
SLIDE "Corporate channel"
BEGIN
  SUBCHANNEL "http://www.company.com/channels/corporate.chn"
  ID 1
END
SLIDE "Local channel"
BEGIN
  SUBCHANNEL "http://www.local.company.com/channels/local.chn"
  ID 2
END
```

(See the chapter named "[The Netpresenter Script Language](#)" for a complete description of the Netpresenter script language.

5.3 Link with content management systems

To automatically update publications one can consider a link with a content management system. The content management system could create a channel or modify an existing channel. Simplest perhaps is to create a sample channel with templates first, using the Netpresenter Editor. The content management system could then add slides based on the templates or replace keywords in the original.

(See the chapter named "[The Netpresenter Script Language](#)" for a complete description of the Netpresenter script language.

5.4 Publication of channels

The editor presently does not support publication via HTTP or FTP. Best is to give those who compose and publish channels write access via file sharing to the channel location. After testing locally the actual publication to a server is then done by using the "File/Copy" command of the editor.

5.5 Locked desktops

For security reasons, screen savers on Windows NT systems are displayed on the so called screen saver desktop. Regular applications display on what is named the default desktop.

Optionally one must first enter a username/password combination before switching from the screen saver desktop to the default desktop.

One of the strong points of the Netpresenter Screen Saver is that it supports hyperlinks to pages or documents anywhere on the Intranet or Internet. When the hyperlink is requested the Netpresenter Screen Saver will not start any applications (Browsers, text processors etc.) on the screen saver desktop, since this would break the security. Instead, NPAgent.exe, a background process, will display the requested hyperlink on the default desktop. If password protection is set, the user should unlock his workstation first.

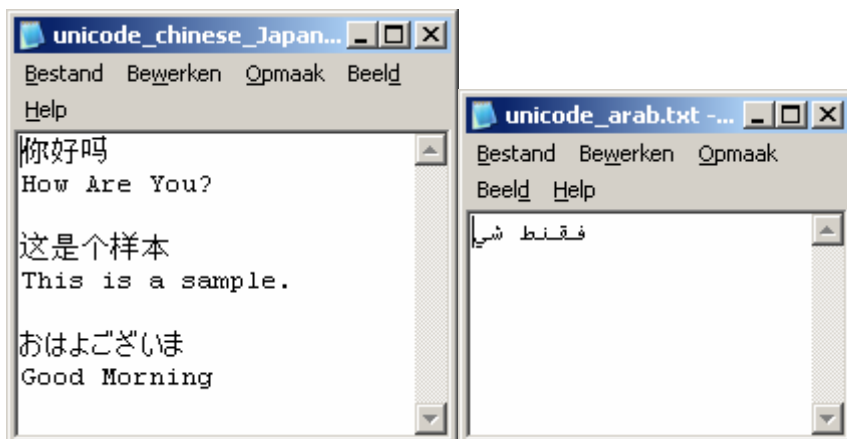
5.6 Screen Saver on NT systems where no-one has been logged on

On NT systems, where the Screen Saver is started when no-one has been logged on yet, the screen saver will run under the system account. Processes started by this account generally cannot access files on a file server via file sharing.

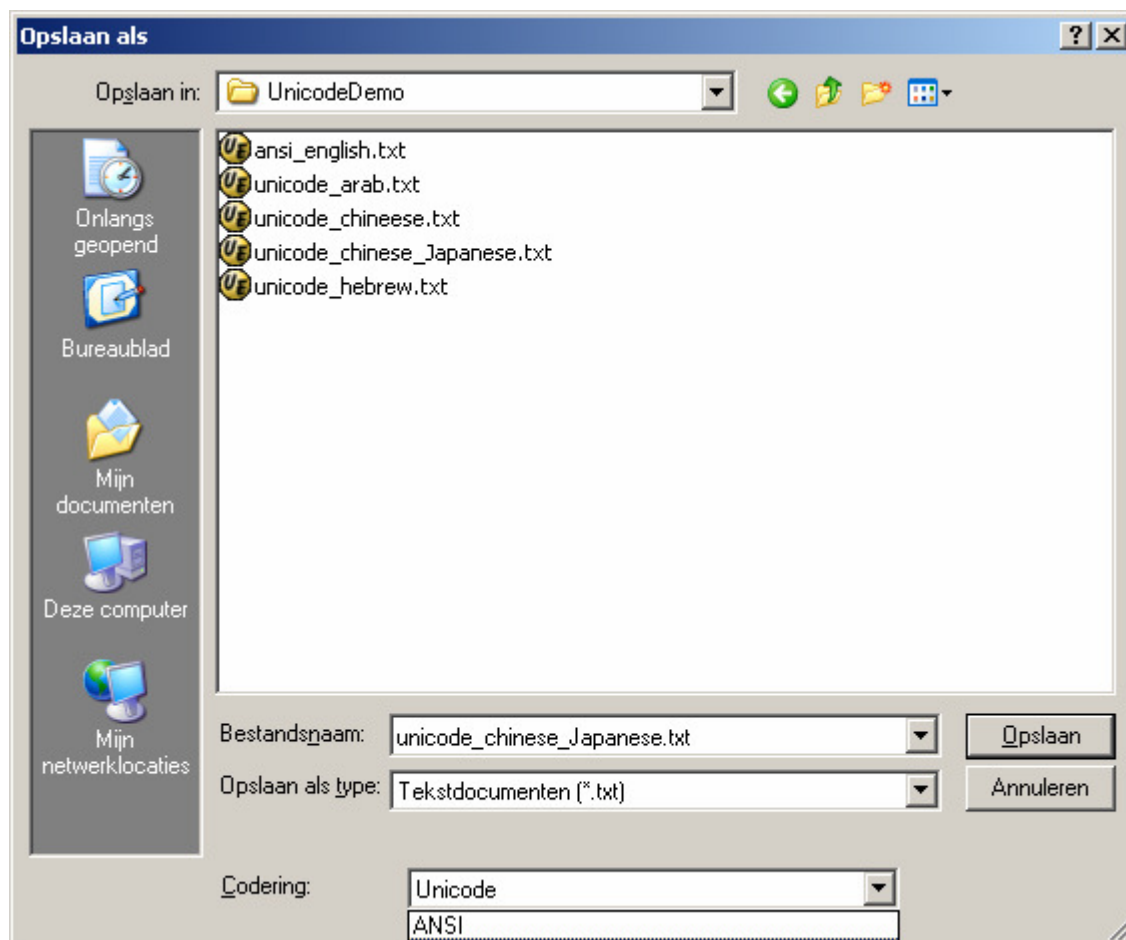
If this is the method used to access channels, these will not be updated on computer systems where no one has yet logged in. This problem does not occur if channels are accessed via HTTP or FTP.

5.7 Unicode text

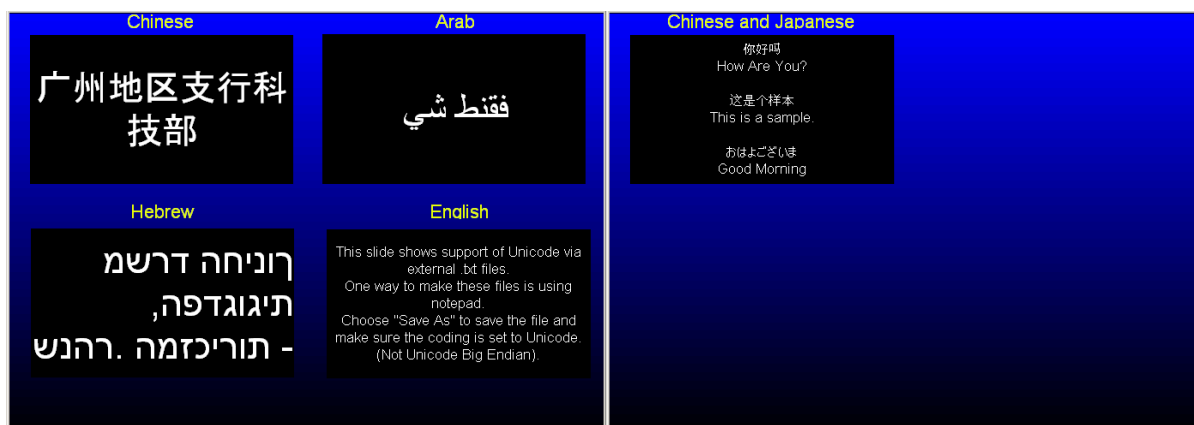
Netpresenter build 154 and up display Unicode text from external text files. These file may be edited with notepad or another simple editor:



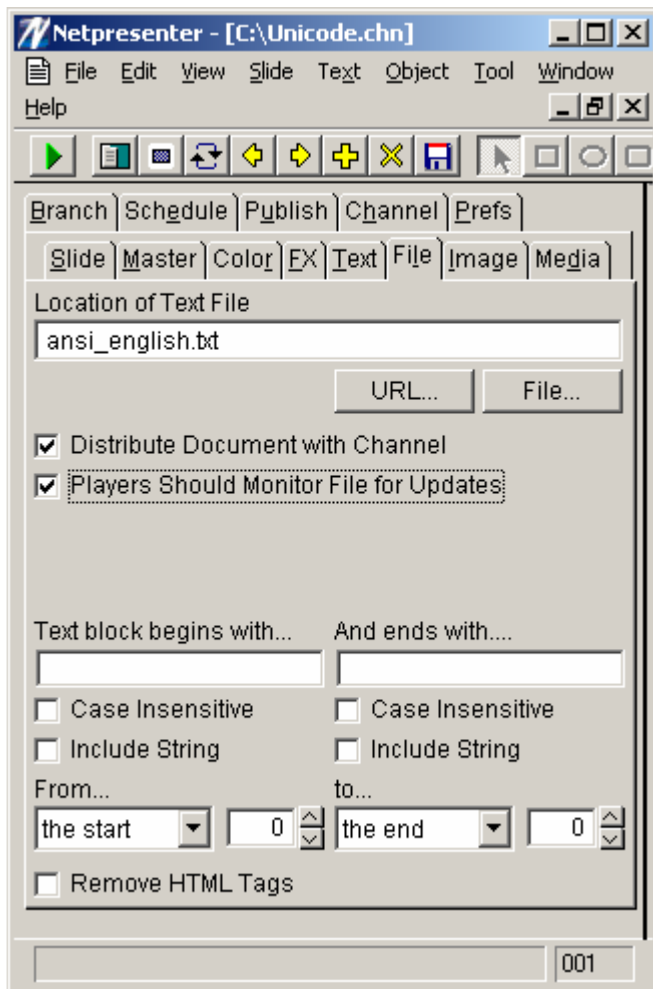
Choose "Save As" to save the file and make sure the coding is set to Unicode. (Not Unicode Big Endian).



The following screendump shows how many completely different languages can be shown on one slide:



In the editor, select such a file using the "File" tab, like:



5.8 Synchronize slide change with the duration of a video file

In the Netpresenter editor move the slider that indicates a slide's display duration all the way to the left until the numerical indicator for duration displays "wait". Netpresenter players (build 179 and up) will wait until the last video to be displayed in an object has finished before advancing to the next slide. When setting the slide's duration to "wait" AND selecting the "play and loop" option for the video, the slide will play the video forever.

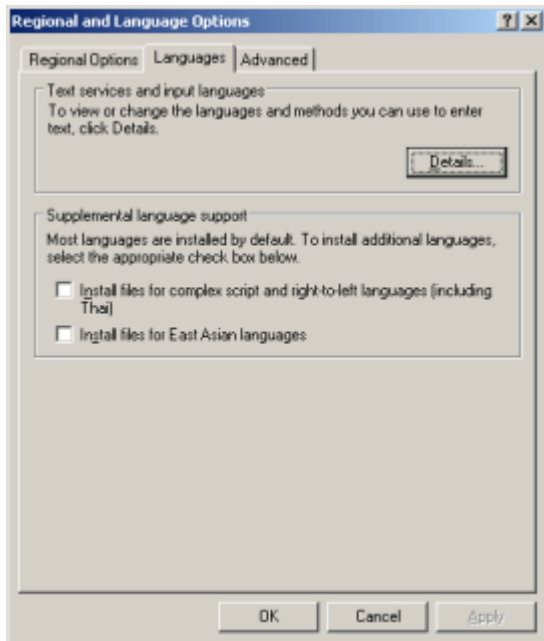
5.9 Netpresenter Editor and Asian Language support

On PC's with Asian language support enabled, the editor may misalign centre or right-aligned text. If this is the case, disable Asian language support or use the player for previewing a channel.

To fix the problem for the editor (recipients of the presentations are unaffected):

On the Editor's PC

- Open control panel
- Select "regional and language options"
- Select tab "languages"
- Deselect all checkboxes under "Supplemental language support"



This should solve the alignment problem.

5.10 ScreenSaverGracePeriod

The ScreenSaverGracePeriod registry setting is available in Windows Server 2003, Windows 2000, and Windows XP, under HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon.

The ScreenSaverGracePeriod entry specifies when password protection of a screen saver becomes effective. This entry specifies the delay between the appearance of a password-protected screen saver and the enforcement of the password requirement.

Password protection of a screen saver is not effective immediately. By default, a brief period elapses within which the user can use the mouse or the keyboard to stop the screen saver without entering the password. This delay is designed to minimize the disruption that results when the screen saver starts while the user is working.

You can add this entry to the registry to adjust the length of the delay. To make password protection effective immediately, set the value of this entry to 0x0.

This entry does not exist in the registry by default. You can add it by using the registry editor, Regedit.exe.

Also see:

www.microsoft.com/resources/documentation/Windows/2000/server/reskit/en-us/Default.asp?url=/resources/documentation/Windows/2000/server/reskit/en-us/regentry/69671.asp

www.microsoft.com/technet/prodtechnol/windowsserver2003/library/TechRef/d1941ca0-b6b7-4b67-9cc6-19c3d612c4ec.mspx

6 Configurable Options (Netpres.ini)

6.1 Introduction

Preferably use `NetProp.exe` or the Desktop Player (right mouse click on icon in taskbar notification area) to edit the configuration information stored in `Netpres.ini`.

For historical reasons, some of the keys may seem to be in an inappropriate or incorrect section. These discrepancies are maintained in order to minimize problems for existing installations.

6.2 Guidelines

The default settings are useful for demonstration purposes, but less useful for a company wide installation.

- If you do not want each user to be able to change the properties themselves, set `AdPropTabs=None` in the [General] section.
- You may also want to make the configuration file read-only. If this is the case the current window size and position of the player will no longer be saved when shutting down, so make sure the .ini file contains reasonable values.
- “Secure” W9x systems: See the `DoNotBranchWhenNotLoggedIn` option in the [Player] section.
- Terminal Server systems: See `SchedulingPriority=16384` in the [SaverOptions] sections. Also make sure that each user has his own store directory. The store directory cannot simply be put in the `%temp%` directory since the screen saver expands environment variables often different from the player (due to the design of Windows).
- Multiple users on the same computer: If some users subscribe to other channels as others: If you would prevent them from seeing remnants of each others channels it may be wise to either clear the store before logging in or before logging out or give each user his own store directory.
- Emergency popup: When Netpresenter will be used to popup important messages, you may want to deny a user the right to exit the application. Set `PlayerMayExit=0` in the [Player] section.

6.3 Detailed description of every keyword

Unless noted otherwise, these options are most comfortably set by the Netpresenter property dialog.

[Screen Saver]

`Channel`=[Location of source channel]

This is a valid file path (UNC or URL) to a channel (`*.chn`) file that the screen saver and player will display and monitor for updates.

`LocalPath`=[Location of the folder for storing downloaded channels]

By design, Netpresenter caches a channel and its associated files on a local hard drive. This is a file path to a location where current channel data is stored.

`Message`=[A short text message to print beneath the channel]

`Minutes`=[Number of minutes to wait before looking for new information]

Netpresenter usually waits for a short amount of time before examining a remote channel for new information. You can set this value to a higher value to minimize network bandwidth.

`TimeFormat`=[A ‘C’ style string for formatting time]

Netpresenter stores the style for formatting time in this string. It uses ‘C’ style conventions. For example: “%I:%M:%S %p”.

Updates=[A bitwise addition of the following values]

| Hex | Decimal | Function |
|--------|---------|--|
| 0x0001 | 1 | Check for new information when the player starts |
| 0x0002 | 2 | Check for new information in time intervals |

This controls how the players look for new information. By adding the two flags together and setting *Updates*=3, you can tell a Netpresenter player to look for new information when it first starts running and then after each time interval.

MinimizeOpenWindowsOnBranch=[0,1]

When set, this option causes all full screen desktop applications except the browser to minimize after someone has clicked on a URL from the screensaver.

[Player]

PlayOptions=[A bitwise addition of the following values]

| Hex | Decimal | Function |
|--------|---------|--|
| 0x0001 | 1 | Show the time at the bottom of the player display |
| 0x0002 | 2 | Don't play any sound |
| 0x0004 | 4 | Don't display any graphics on the slide |
| 0x0008 | 8 | Don't scale the slide |
| 0x0010 | 16 | Don't use transitions |
| 0x0020 | 32 | Don't show the toolbar on the player |
| 0x0040 | 64 | Always show the player on top of other windows |
| 0x0080 | 128 | Don't download any attachments with the channel |
| 0x0100 | 256 | Allow the player to popup for priority information (Note: Superseded by <i>Popup</i> key in [Player] section). |
| 0x0200 | 512 | Don't confirm that the user wants to exit |
| 0x0400 | 1024 | Disable the screen saver display in the control panel |

This key, like many others, is currently only stored as a decimal value and not in hexadecimal. To set multiple values, simply add together the decimal values for each selected flag. For example, to disable transitions and the exit dialog, set *PlayOptions* to 528. This is the sum of 16 (Don't use transitions) + 512 (Don't confirm that the user wants to exit).

Style=[Desktop Player Window Type]

One of the following:

0 for a floating window;

1 for a fixed borderless window; and

2 for a window that covers the entire screen.

X=[Left edge of player window in logical units]

Y=[Top edge of player window in logical units]

W=[Width of player window in logical units]

H=[Height of player window in logical units]

These values are reset each time the user moves the player window.

Note that in case of popups because of channel updates, Netpresenter will increase the width to at least half the screen width and increase the height to at least half the screen height if necessary.

PlayerMayExit = [0 to deny the user to close the player, 1 to allow it]

(Please also review the bit value 0x0200 for the *PlayOptions* key in the [Player] section. This bit value determines whether the user should be asked to quit. Not whether he should be allowed or denied quitting).

Note that it does not make much sense to set this option to 0 while forgetting to set *AdPropTabs=*None (See the [General] section).

Popup = [0 = never, 1 = selective, 2 = every update]
(For backward compatibility reasons, when this key is not present, the bit value 0x0100 for the *PlayOptions* key in the [Player] section will be taken into account. When set, this bit value determines that the player should popup every time a channel has been updated).

DoNotBranchWhenNotLoggedIn = [0, 1]
Windows 9x have no native way to prevent users from accessing the internet/intranet when no one is logged in.
Some companies use 3rd party software to secure the win 9x desktop as good as possible, but this software does not catch the screen saver.
When setting this option to 1, the Netpresenter Screen saver will not execute any applications (browser or other) when a user who has not yet logged in, clicks on an object with a clickable branch attached.
(This value is not handled by the Netpresenter Property Dialog.)

MenuOptions=[A bitwise addition of the following values]

| Hex | Decimal | Function |
|--------|---------|------------------------|
| 0x0001 | 1 | Show Channel Selector |
| 0x0002 | 2 | Disable Screen Saver |
| 0x0004 | 4 | Start Screen Saver now |

(This value is not handled by the Netpresenter Property Dialog.)

MenuTextDisableScreenSaver=Presentation Mode
When present, this option sets the name being displayed in the context sensitive menu of the player for the "Disable Screen Saver" function to "Presentation Mode" (See *MenuOptions*=2).
(This value is not handled by the Netpresenter Property Dialog.)

OnSelectivePopupOnlyShowHighPrioritySlides=[0,1]
When a presentation contains any slide with its priority set to 10, the player may popup immediately (see *popup*).
When setting *OnSelectivePopupOnlyShowHighPrioritySlides*=1, the all other slides will not be shown.

[General]

Name=[Name of Netpresenter User]
This information is printed in the Netpresenter About dialog.
(This value most often filled in during installation)

Organization=[Name of Organization]
This information is printed in the Netpresenter About dialog.
(This value most often filled in during installation)

Serial=[The serial number assigned to the user]
The serial number is important in a Netpresenter installation because the Netpresenter executables recognize valid serial numbers and enable more features when a valid number is available. It is not a good idea to set this value directly because the functionality of Netpresenter might become limited.
(This value most often filled in during installation)

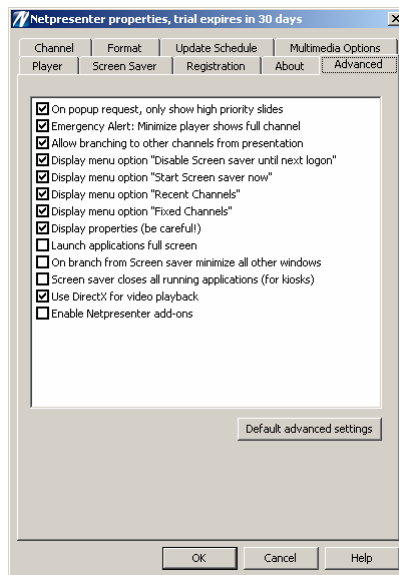
Path=[Path to the folder where Netpresenter is located]
This is the folder where most of the Netpresenter programs and files are located.
(This value set correctly during installation)

Schedule=[A schedule for downloading updated channels]

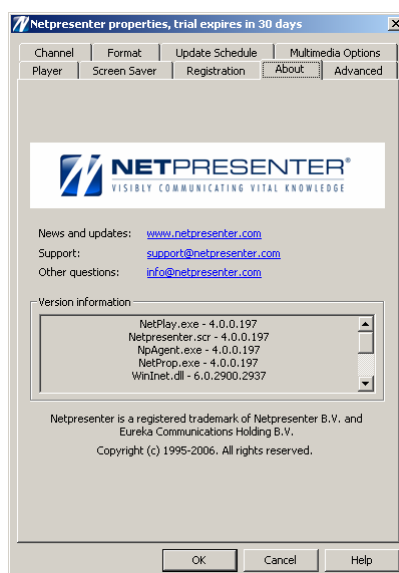
A list of 24 numbers that store packed information about when to download new information from a remote site. It is used to schedule. If this value is undefined, the players assume that you want to want to download new information at any time of day. If you want to set this value directly in netpres.ini, it is best to create a schedule in the properties dialog and then copy it for later use.

AdPropTabs=

This key determines what tabs of the “Netpresenter Properties” dialog will be visible to the end user. The key is affected by the checkbox titled “Display properties”. Unchecking this value corresponds to AdPropTabs=None in netpres.ini; which disables the possibility to view the dialog at all.



To only display some tabs, concatenate there corresponding keywords to the value of *AdPropTabs*, for example when *AdPropTabs* is set to “About Identity”, the following dialog appears as:



The available keywords are:

| Keyword | Corresponding tab |
|---------|-------------------|
| Format | Format |
| Channel | Channel |

| | |
|-------------|--|
| Schedule | Update Schedule |
| Options | Multimedia Options |
| Players | Desktop Player |
| Identity | Registration |
| Advanced | Advanced |
| About | About |
| Screensaver | Screen Saver |
| None | No Netpresenter properties will be displayed |

AdDeveloper=[0 disable; 1 to enable]

Enables special administrative features in the Netpresenter programs. Currently, this only includes a field for creating custom transitions in the editor. The default value is disabled.
(This value is not handled by the Netpresenter Property Dialog.)

AdRun=[0 to disable; 1 to enable]

The players can launch executables. For security reasons, this feature is normally disabled. You can enable it by setting this value to 1.
(This value is not handled by the Netpresenter Property Dialog.)

TriggerSelfHealing=[0,1]

When installing on a Windows NT PC with multiple user's who login via a domain controller, each user's screen saver settings are stored on the domain controller and cannot be updated from an installation procedure. By setting this option to 1, the Desktop Player will, upon start-up, check the current user's screen saver setting and set it to the appropriate values.

WebServerScriptExpansion=[0,1]

When set, one may pass parameters to web services. The data that will be output by the web server will be cached locally.

PassiveFtp=[0,1]

When set, for ftp transfers the internet connection will be set to passive mode.

Path2FileContainingBranch=

(Available from Build 149)

When someone clicks on a URL from a Netpresenter Screen Saver running under a Windows NT system, the branch will be stored in the directory indicated here.

The default path is the file `launch.txt` in the Monitor subdirectory of the directory denoted by the *Path* key in the [General] section. (See above). Most often similar to:

```
c:\program files\netpresenter\Monitor\launch.txt.
```

By using *Path2FileContainingBranch* one may set it to any file in any directory.

Environment variables will be expanded .

Please note however that you should not use environment variables like `%temp%` or `%userprofile%`, since the screensaver expands these differently than programs started explicitly by the user. (In detail: On Windows NT systems the screen saver is usually started by the WinLogon process. This process does not pass the user's environment variables to its child processes. The `%temp%` variable of screen savers usually expands to `c:\windows\temp` or something similar. Most other user processes of Windows 2000 and up will place the `%temp%` directory under the user's home directory).

LogEthernetTraffic=[0,1]

To assist in tracking network related problems we can make available a build with built-in logging of Ethernet traffic. Whether logging is in effect or not will be controlled by this switch.

FallBackOnOriginalFileNames=[0,1]

When editing a channel one usually retrieves images from all kind of directories of all kind of servers (or servers mapped to local drives) that the person working with the editor has access to.

Usually other people working for the same company have a completely different infrastructure and do not have the same drive mapping nor access to the same servers.

By publishing a channel after editing (using the file/copy option), the editor will copy all images to the same directory as the channel.

All players will now open the image files in the same directory as the channel, using the same protocol used for opening the channel.

If a channel is published to a UNC path (for example [\\server\npdemo\index.chn](http://server/npdemo/index.chn)) but all players refer to it via a HTTP path (for example <http://intranet/npdemo/index.chn>) all images and multi-media files will also be accessed using the HTTP protocol.

It will often even be undesirable to open an image file using the same directory path as stored in (an unpublished) channel even if the players have (read) access to it. This is because the HTTP protocol is much more scalable than the SMB protocol used to access files via their UNC path.

This option has been made available to assist people using the editor that would like to view a channel with the player without having to publish the channel first: When the file cannot be found where expected (i.e. the same location as the channel), players with the option *FallBackOnOriginalFileNames* set to 1 will try to locate image and multi media files using the original path names (for example [\\server\npdemo\image1.jpg](http://server/npdemo/image1.jpg), or `z:\npdemo\image1.jpg`).

After a demo installation this value is set to 1 by default which is best for a quick evaluation of Netpresenter, but for a roll-out to multiple clients.

Locale=English

This key determines how the characters in a channel will be displayed. A locale is a set of user preference information related to the user's language, country/region, and cultural conventions. For Netpresenter players the locale indicates the codepage to be used for displaying a channel's contents. I.e. ANSI codepage 1252 (ANSI Latin 1) will be used for English and most European languages.

AutoIniUpdate=[0,1]

This key controls whether Netpresenter attempts to download and interpret a centrally stored `netpres.ini` file. If the current channel is set to <http://www.company.com/Nepresenter/index.chn>, the Desktop Player will attempt to locate a file named <http://www.company.com/Netpresenter/index.ini>, i.e. with exact the same name as the channel and in exactly the same location. The extension is the only thing that differs.

The locally stored netpres.ini file will be overwritten (but only if the file is writable by the user running the player).

Note that here are some issues with respect of updating the .ini file:

If a user is denied write access to netpres.ini using the Access Control List on a NTFS partition, the players will continue to read the remote .ini file from the cache. To the user it appears as if the changes are applied.

If at any moment the screensaver kicks in while nobody has logged-in yet, it will run under System user credentials and have enough rights to update netpres.ini. Using the read-only attribute to deny change access has no effect.

[Editor]

Grid=[A bitwise addition of the following values]

| Hex | Decimal | Function |
|--------|---------|-------------------------------------|
| 0x0001 | 1 | Show the grid on the editor display |
| 0x0002 | 2 | Lock object points to the grid |

(This value is not handled by the Netpresenter Property Dialog.)

GridX=[Width of grid cell in the editor]

GridY=[Height of grid cell in the editor]

(These value are not handled by the Netpresenter Property Dialog.)

Recent1=[A channel that was recently opened in the Netpresenter editor]

...
The editor keeps a record of the last six channels that were opened. These channels are attached to the File menu and allow the user to quickly return to them. It is unlikely that you would want to set these values directly.

[Source]

Proxy=

This option should be left blank in most cases. Netpresenter will use the proxy settings used by Internet Explorer. Only in the case one would like to bypass the proxy settings set by your operating system it makes sense to change this version.

[SaverOptions]

SchedulingPriority = [one of the following values]

| Hex | Decimal | Function |
|--------|---------|--------------|
| 0x0020 | 32 | Normal |
| 0x4000 | 16384 | below normal |

In Windows Terminal Server environments it may be advisable to lower the priority of the screen saver. By setting *SchedulingPriority*=16384 in the [SaverOptions] section, the saver will yield faster to other processes.

32 is the default value. Do not change it unless you experience that hundreds of screen savers running on one terminal server cause performance problems. (Other values are possible but not recommended).

(This value is not handled by the Netpresenter Property Dialog.)

[CH_XX]

Display=[The title to display in the Channel Selector]

Path=[The path to the channel]

(These values are not handled by the Netpresenter Property Dialog.)

Example:

[CH_01]

Display=Netpresenter Demo

Path=http://www.netpresenter.com/channel/index.chn

[CH_02]

Display=Message Server Demo

Path=http://www.netpresenter.com:90/chn/index.chn

Etc.

Up to 10 channels may be added this way. The first channel omitted will indicate the end of the list, i.e. if the sections [CH_01], [CH_02] and [CH_04] are present, only the 1st 2 channels will be displayed.

[Channels]

ChannelFilePath=\\<server>\<share>\channel.ini

By (optionally) adding a section [Channels] with key *ChannelFilePath*, the player will read the channel information (the CH_XX sections) from a file stored centrally.
(This value is not handled by the Netpresenter Property Dialog.)

[OptimizeScreenSaverEffectiveness]

To better guarantee that messages will be visible, Netpresenter build 184 and above offer the possibility to prevent monitor power down or system standby.

Note that when a system is running on batteries, Netpresenter will never interfere with a system's power management.

The keys described below correspond to the dialog "optimize screen saver effectiveness" in the "Screen Saver" tab of the dialog titled "Netpresenter properties".

ControlPowerManagement=0

If set to 1, Netpresenter will attempt to control a PC's power management for example by denying monitor power down requests during working hours, so that presentations will remain visible.

PowerManagementMethod=1

If the value of *PowerManagementMethod* is set to 0, Netpresenter will always control *PowerManagement*. If it is set to 1, Netpresenter will only control it in the time denoted by *SecsPowerdownNotAllowedStartTime* and *SecsPowerdownNotAllowedStopTime*.

SecsPowerdownNotAllowedStartTime=28800

This value denotes the time (in seconds since the day started) that Netpresenter will control power management (if *PowerManagementMethod=1*). If *SecsPowerdownNotAllowedStartTime=28800* denotes a start time of 8:00h local time ($8 * 60 * 60 = 28800$).

SecsPowerdownNotAllowedStopTime=64800

With a value of 64800 ($= 18 * 60 * 60$) Netpresenter will stop controlling *PowerManagement* at 18:00h (6 PM) This means that after 6 PM Screen Powerdown is allowed, the system may go into suspend etc.

DenyMonitorPowerdownRequest=1

When set to 1, Netpresenter may attempt to prevent the monitor from entering a power down state, but only if the following conditions are met:

- The system must NOT be running on batteries
- The option "*ControlPowerManagement*" must be set
- The current time must fall within the period that Netpresenter is allowed to interfere with power management

DenySuspendRequest=0

When set to 1, Netpresenter will attempt to prevent the system from going into suspend mode, but only if all other conditions are met (see *DenyMonitorPowerdown*)..

6.4 Mapping of .ini files in the Windows Registry

On NT systems the *netpres.ini* can be mapped on user specific entries in the Windows Registry, for the sake of centralized management.

Create the following registry directory:

```
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows  
NT\CurrentVersion\IniFileMapping\netpres.ini"
```

And put the value of the key "(default)" (Note: What is being displayed by the registry editor for (default) is language dependent).

```
USR:Software\Netpresenter\ini.
```

All references to the file `netpres.ini` will be mapped to:

`HKEY_CURRENT_USER\Software\Netpresenter\ini`

See Microsoft documentation (MSDN, TECHNET) for additional information on ini file mapping

7 The Netpresenter Script Language

7.1 Introduction

This chapter describes the syntax of the script language used to describe channels (“slideshows”) in several Netpresenter products. Normally you would not need to read this chapter, unless you develop software that generates channels based on for example the contents of content management systems.

The targeted reading audience for this document are people with a computer science background.

Note that most parameters will not be repeated if they remain the same. The players use the last parameters recorded when creating new objects.

The following products write the Netpresenter channel files:

Netpresenter Editor
Netpresenter Message Server / Alert Server

The following players read the Netpresenter channel files:

Netpresenter Screen Saver
Netpresenter Desktop Player

Each word in a header corresponds to a keyword in the Netpresenter script language. Keywords and parameters are separated by white space (space character or a carriage return/linefeed pair).

7.2 Channel

```
::=  
"CHNL 1002"  
["TITLE" <quoted string>]  
["AUTHOR" <quoted string>]  
["DESCRIPTION" <quoted string>]  
["CFLAGS" <ChannelFlagValues>]  
[<SlideOrChannels>]
```

7.2.1 ChannelFlagValues

```
::=  
1 (0x00000001) Enable interactivity for every slide
```

On slides that contain clickable objects mouse moves will not cause the screen saver to close, but mouse moves on slides without clickable options will.

When setting this option, the behaviour is the same of all slides, with or without clickable objects: mouse moves do not cause the screen saver to close.

7.2.2 Quoted string

A quoted string is a string between double quotes (“”).

The double quote character may be escaped using the ‘^’ symbol. A double ‘^’ character displays the ‘^’ character itself. The editor takes care of this automatically.

7.2.3 SlideOrChannels

```
::=  
<Slide> [<SlideOrChannels>] |  
<MasterSlide> [<SlideOrChannels>] |  
<SubChannel> [<SlideOrChannels>]
```

7.2.3.1 Slide

```
::=  
"SLIDE" <SlideName>  
"BEGIN"  
[ "MASTERID" <MasterId>]  
"ID" <SlideId>  
[<Objects>]  
[<SlideScheduling>]  
[<OnOrMoreAdvancedSchedulingOptions>]  
[ "OPTIONS" <SlideOptionFlagValues>]  
[ "SECONDS" <DisplayTime>]  
[ "PRIORITY" <Priority>]  
"END"
```

7.2.3.1.1 MasterId

```
::=  
<SlideId>  
The Master ID is the id of the masterslide will be used as a template for this slide.
```

7.2.3.1.2 SlideId

```
::=  
<unsigned decimal integer>  
An identifier for this slide.
```

7.2.3.1.3 DisplayTime

```
::=  
<unsigned decimal integer>  
Range 0 .. 300 seconds. The value 300 is used to wait until the user clicks.
```

7.2.3.1.4 Priority

```
::=  
<unsigned decimal integer>  
Range 0 .. 10. A value of 10 in any slide indicates that the whole channels is to be treated as an emergency channel, i.e. players configured correctly will popup any time such a channel is written.
```

7.2.3.1.5 SlideName

```
::=  
<quoted string>
```

Name of the slide. The name will only be shown in the editor.

7.2.3.1.6 SlideScheduling

::=
" TIME" <ScheduleHour00> <SchduleHour01> .. <ScheduleHour23>

7.2.3.1.6.1 ScheduleHourXX

::=

Schedule is configured using 24 hex blocks which represent 24 hours.
Every hex block represents an hour of the day starting with 0 (12 pm)
Every hex block is 4 hex characters which represent 16 bits for every hour.

These bits represent the following if set:

| Day | Bit Number | Valid during x part of the hour | If set, valid from ..until |
|-----|------------|---------------------------------|----------------------------|
| Sun | 0 | 1 | hh:00 - hh:29 |
| Sun | 1 | 2 | hh:30 - hh:59 |
| Mon | 2 | 1 | hh:00 - hh:29 |
| Mon | 3 | 2 | hh:30 - hh:59 |
| Tue | 4 | 1 | hh:00 - hh:29 |
| Tue | 5 | 2 | hh:30 - hh:59 |
| Wed | 6 | 1 | hh:00 - hh:29 |
| Wed | 7 | 2 | hh:30 - hh:59 |
| Thu | 8 | 1 | hh:00 - hh:29 |
| Thu | 9 | 2 | hh:30 - hh:59 |
| Fri | 10 | 1 | hh:00 - hh:29 |
| Fri | 11 | 2 | hh:30 - hh:59 |
| Sat | 12 | 1 | hh:00 - hh:29 |
| Sat | 13 | 2 | hh:30 - hh:59 |

7.2.3.1.7 OnOrMoreAdvancedSchedulingOptions

::=
<AdvancedScheduling> [<OnOrMoreAdvancedSchedulingOptions>]

Scheduling options may be combined to build complex scheduling behaviour.

7.2.3.1.7.1 AdvancedScheduling

::=
"SCHEDULESTART"
["SCH_TIMEFORMAT" <TimeFormat>]
["SCH_PERIODSTART" <DateTime> "SCH_PERIODSTOP" <DateTime>]
["SCH_DAILYSTART" <Time> "SCH_DAILYSTOP" <Time>]
["SCH_DAYS_START" <ListOfDays>]
"SCHEDULEEND"

The period determined by SCH_PERIODSTART and SCH_PERIODSTOP denotes the period within which the slide or channel will be displayed. Do not use these keywords if there are no start or end dates.

SCH_DAILYSTART and denote SCH_DAILYSTOP the daily times the slide or channel will be displayed. Do not use these keywords if the slide should be displayed all day during a certain period.

Example 1:

For a slide that should be displayed every day between September 1 2004 until (but not including) January 1 2100 from 9:55 till 11:55 UTC time.

```
SCHEDULE_START
SCH_TIMEFORMAT "UTC"
SCH_PERIODSTART "2004-09-01 00:00:00"
SCH_PERIODSTOP "2100-01-01 00:00:00"
SCH_DAILYSTART "09:55:00"
SCH_DAILYSTOP "10:35:00"
SCH_DAYS_START
  "AllDays"
SCH_DAYS_END
SCHEDULE_END
```

Example 2:

Display a slide every Monday and Wednesday from 11:45 to 12:45 local time:

```
SCHEDULE_START
SCH_TIMEFORMAT "Local"
SCH_DAILYSTART "11:45:00"
SCH_DAILYSTOP "12:45:00"
SCH_DAYS_START
  "Monday Wednesday"
SCH_DAYS_END
SCHEDULE_END
```

7.2.3.1.7.1.1 TimeFormat

```
::=
"UTC" |
"Local" (default)
```

Use "UTC" for example when all players at all plants of a company anywhere in the world should start playing a slide or channel at exactly the same moment.

Use "Local" when all players should start displaying a slide or channel at for example 8 AM local time.

7.2.3.1.7.1.2 DateTime

```
::=
<yyyy-mm-dd hh:mm>
```

Denotes a date and time in 24 hour format, for example:
"2004-09-01 14:00:00" for September 1, 2004 2 PM.

7.2.3.1.7.1.3 Time

```
::=
Denotes a time in 24 hour format, for example  
"13:35:00"
```

7.2.3.1.7.1.4 ListOfDays

```
::=
"Monday"
"Tuesday"
"Wednesday"
```

"Thursday"
"Friday"
"Saturday"
"Sunday"

"AllDays"
"AllWorkingDays" (denotes Monday through Friday)
"AllWeekend" (Saturday and Sunday)

do not use keyword `SCH_DAYS_START` if the day of the week does not matter (or use it with the "AllDays" parameter).

The values can be combined. Use spaces to separate the values.

7.2.3.1.8 SlideOptionFlagValues

::=
1 (0x00000001) Hide Slide
2 (0x00000002) Alert (Red flashing border)
4 (0x00000004) Set name to text (Useful for the editor only)

Flag values only applicable for slides that are derived from a master slide:

256 (0x00000100) Slide will use master's timing
512 (0x00000200) Slide will use master's schedule
1024 (0x00000400) Slide will use master's visual effect

Slide options are reflected in the editor's slide tab.

General Note about flags: The values may be combined by adding their values.

For example the SlideOptionFlagValue "HideSlide" (value 1) and "Alert" (value 2) may be combined by assigning the value 3 to the `OPTIONS` parameter.

7.2.3.1.9 Objects

::=
<Object> [<Objects>]

7.2.3.1.9.1 Object

::=
["FLAGS" <ObjectFlags>]
[<BackgroundDefinition>]
[<BorderDefinition>]
[<EffectDescription>]
["BRANCH" <BranchToSpecifier>]
[<ContentsText>]
[<ContentsTextFromFile>]
[<ContentsImage>]
[<ContentsMultiMedia>]
[<ObjectShape>] (Implied for slide, required for objects)
["DELAY" <DelayTime>]
["ERASE" <DelayTime>]

7.2.3.1.9.1.1 DelayTime

::=

<unsigned decimal int>
Duration in seconds.

7.2.3.1.9.1.2 ObjectFlags

::=
[<[TextFromFileFlags](#)>]
[<[ImageFlags](#)>]
[<[MultiMediaFlags](#)>]
[<[BranchFlags](#)>]

7.2.3.1.9.1.2.1 TextFromFileFlags

::= <[TextFromFileFlagValues](#)> [| <[TextFromFileFlagValues](#)>]

7.2.3.1.9.1.2.1.1 TextFromFileFlagsValues

::=
32 (0x00000020) Players should monitor file for updates
65536 (0x00010000) Do not distribute object with channel

2048 (0x00000800) Remove HTML tags
4096 (0x00001000) Begin "Case Insensitive"
8192 (0x00002000) End "Case Insensitive"
16384 (0x00004000) Begin "Include String"
32768 (0x00008000) End "Include String"

7.2.3.1.9.1.2.2 ImageFlags

::= <[ImageFlagValues](#)> [| <[ImageFlagValues](#)>]

7.2.3.1.9.1.2.2.1 ImageFlagValues

::=
64 (0x00000040) Players should monitor file for updates
131072 (0x00020000) Do not distribute object with channel

7.2.3.1.9.1.2.3 MultiMediaFlags

::= <[MultiMediaFlagValues](#)> [| <[MultiMediaFlagValues](#)>]

7.2.3.1.9.1.2.3.1 MultiMediaFlagValues

::=
128 (0x00000080) Players should monitor file for updates
262144 (0x00040000) Do not distribute object with channel

1 (0x00000001) Activate On Mouse Click (As opposed to "Activate On Display", when the flag is not set)

7.2.3.1.9.1.2.4 BranchFlags

::= <[BranchFlagValues](#)> [| <[BranchFlagValues](#)>]

7.2.3.1.9.1.2.4.1 BranchFlagValues

::=
256 (0x00000100) Players should monitor file for updates
512 (0x00000200) Distribute object with channel (Note: opposite from ImageFlagValues,
TextFromFileFlagValue, MultiMediaFlagValues)
16 (0x00000010) Close presentation after branch
1024 (0x00000400) Print document

7.2.3.1.9.1.3 ContentsText

::=
<TextAttributes> "BTEXT" <quoted string> (When used for the slide)
| <TextAttributes> "TEXT" <quoted string> (When used for a object on the slide)

(When the text is to be displayed in an object the keyword "TEXT" is used. "BTEXT" is used for text to be displayed on the slide's background, not in one of the objects of the slide. This is because of historical reasons only)

7.2.3.1.9.1.3.1 TextAttributes

::=
"FONT" <FontTypeface> <FontHeight> "0"
["STYLE" <StyleFlags>]
["JUSTIFY" <HorzJustifyType> <VertJustifyType>]
[<OutlineParameters>]
[<ShadowParameters>]
[<ExtrudeParameters>]
[<TextColour>]
["CSPACE" <CharacterSpacing>]
["LSPACE" <LineSpacing>]
["SEPARATOR" <separator>]
["TEXTWRAP" <TextWrapSpecifier>]

7.2.3.1.9.1.3.1.1 FontTypeface

::= <Any available typefacename>

Examples: Arial, Courier etc.

7.2.3.1.9.1.3.1.2 FontHeight

::= <unsigned decimal integer>

7.2.3.1.9.1.3.1.3 HorzJustifyType

::=
"CENTER" (default) |
"LEFT" |
"RIGHT"

7.2.3.1.9.1.3.1.4 VertJustifyType

::=
"VCENTER" (default) |
"TOP" |

“BOTTOM”

7.2.3.1.9.1.3.1.5 OutlineParameters

::=
“OUTLINE” <OutlineLevel>
[<[OutlineColour](#)>]

7.2.3.1.9.1.3.1.6 OutlineLevel

::=
<unsigned decimal int>

7.2.3.1.9.1.3.1.7 OutlineColour

::=
[“OPEN” <[RGB](#)>]

(In this context, OPEN is short for ‘Outline PEN’).

7.2.3.1.9.1.3.1.8 ShadowParameters

::=
“SHADOW” <XOffset> <YOffset>
[<[ShadowColour](#)>]

7.2.3.1.9.1.3.1.9 XOffset

::=
<signed decimal int>

7.2.3.1.9.1.3.1.10 YOffset

::=
<signed decimal int>

7.2.3.1.9.1.3.1.11 ShadowColour

::=
[“SPEN” <[RGB](#)>]

7.2.3.1.9.1.3.1.12 ExtrudeParameters

::=
“EXTRUDE” <XOffset> <YOoffset>
[<[ExtrudeColour](#)>]

7.2.3.1.9.1.3.1.13 ExtrudeColour

::=
[“EPEN” <[RGB](#)>]

7.2.3.1.9.1.3.1.14 TextColour

::=
["APEN" <[RGB](#)>]

7.2.3.1.9.1.3.1.15 StyleFlags

::=
1 0x00000001 Bold
2 0x00000002 Italics
4 0x00000004 Underline
4096 0x00001000 Random Records (See manual: Words are selected randomly)

7.2.3.1.9.1.3.1.16 CharacterSpacing

::=
<unsigned decimal int>

7.2.3.1.9.1.3.1.17 LineSpacing

::=
<unsigned decimal int>

7.2.3.1.9.1.3.1.18 Separator

::=
<[QuotedString](#)>

7.2.3.1.9.1.3.1.19 TextWrapSpecifier

::=
0 No text wrapping
1 Text wraps around images with a higher Z-order

Text overlapping an image may optionally wrap around that image. This only works if the text's vertical justification is set to "top" and its horizontal justification to "left". (These are the default alignment settings).

7.2.3.1.9.1.4 ContentsTextFromFile

::=
<[TextAttributes](#)>
["TEXTITEMS" <[BeginSelectCiterium](#)> <[NrOfItemsFromBegin](#)> <[EndSelectCriterium](#)>
<[NrOfItemsFromEnd](#)>]
"TEXTPATH" <[QuotedPathname](#)>
["TEXTBEGIN" <[BeginText](#)>]
["TEXTEND" <[EndText](#)>]

Note that the keyword TEXTITEMS often appears many items before the "TEXTPATH" keyword. Also see <[TextFromFileFlags](#)>

7.2.3.1.9.1.4.1 QuotedPathname

::=
<quoted text>

URL or UNC path to a file.

7.2.3.1.9.1.4.2 BeginSelectCiterium

::=
0 | (The Start)
1 | (Character)
2 | (Word)
3 | (Line)

A fifth way, not explicitly mentioned here, is to use the [<BeginText>](#) to determine where to start.

7.2.3.1.9.1.4.3 NrOfItemsFromBegin

::
<unsigned decimal integer >

7.2.3.1.9.1.4.4 EndSelectCriterium

::=
0 | (The End)
1 | (Character)
2 | (Word)
3 | (Line)

A fifth way, not explicitly mentioned, is to use the [<EndText>](#) to determine where to stop.

7.2.3.1.9.1.4.5 NrOfItemsFromEnd

::
<unsigned decimal integer>

7.2.3.1.9.1.4.6 BeginText

::=
<[quoted string](#)>

Overrules [<BeginSelectCiterium>](#).

7.2.3.1.9.1.4.7 EndText

::=
<[quoted string](#)>

Overrules [<EndSelectCriterium>](#).

7.2.3.1.9.1.5 ContentsImage

::=
"BIMAGE" [<QuotedPathname>](#)
["BPOS" [<BPosValue>](#)]

7.2.3.1.9.1.5.1 BPosValue

::=
0 | (Stretch (default))
1 | (Stretch (Keep aspect))
2 | (Tile)

3 (Center)

7.2.3.1.9.1.6 ContentsMultiMedia

```
::=  
"MCIFILE" <QuotedPathname> | <>  
["MCIEVENT" <MciEventValues>]  
["MCITIME" <StartTime> <StopTime>]
```

7.2.3.1.9.1.6.1 MciEventValues

```
::=  
0 | (No Event (Default))  
1 | (Play Once)  
2 | (Play and Loop)  
3 | (Stop)  
4 | (Stop All)
```

7.2.3.1.9.1.6.2 StartTime

```
::=  
<float>
```

Denotes StartTime in seconds.

7.2.3.1.9.1.6.3 StopTime

```
::=  
<float>
```

Denotes StopTime in seconds

7.2.3.1.9.1.7 ObjectShape

```
::=  
<ShapeRectangle > | <ShapeEllipse> | <ShapeRoundedRectangle> | <ShapePolygon>
```

Note that when the object represents the slide, a rectangular shape is implied.

7.2.3.1.9.1.7.1 ShapeRectangle

```
::=  
"RECTANGLE" [<NameOfObject>] <x0> <y0> <x1> <y1>
```

x0, x1

```
::=  
<X Coordinate>
```

y0, y1

```
::=  
<Y Coordinate>
```

7.2.3.1.9.1.7.1.1 X Coordinate

::=
<unsigned decimal integer>
Range: [0 .. 6400-1] logical units (1/10 pixel)
Where 0 represents the leftmost position, 6399 the rightmost position

7.2.3.1.9.1.7.1.2 Y Coordinate

::=
<unsigned decimal integer>
Range: [0 .. 4800-1]

Where 0 represents the topmost position, 4799 the lowermost position

7.2.3.1.9.1.7.1.3 NameOfObject

::=
<quoted string>

Visible in the editor only.

Object names can also contain keywords that may be used by tools that generate channel files (such as the Netpresenter Message Server).

7.2.3.1.9.1.7.2 ShapeEllipse

::=
"ELLIPSE" [<NameOfObject>] <x0> <y0> <x1> <y1>

7.2.3.1.9.1.7.3 ShapeRoundedRectangle

::=
"ROUNDRECT" [<NameOfObject>] <x0> <y0> <x1> <y1> <x2> <y2>

x0 Specifies the x-coordinate of the upper-left corner of the rectangle (in logical units).

y0 Specifies the y-coordinate of the upper-left corner of the rectangle (in logical units)

x1 Specifies the x-coordinate of the lower-right corner of the rectangle (in logical units).

y1 Specifies the y-coordinate of the lower-right corner of the rectangle (in logical units).

x2 Specifies the width of the ellipse used to draw the rounded corners (in logical units).

y2 Specifies the height of the ellipse used to draw the rounded corners (in logical units).

7.2.3.1.9.1.7.4 ShapePolygon

::=
"POLY" [<NameOfObject>] "FROM" <x0> <y0> <PolygonToDefinitions>

7.2.3.1.9.1.7.4.1 PolygonToDefinitions

::=
"TO" <x1> <y1> [<PolygonToDefinitions>]

7.2.3.1.9.1.8 BranchToSpecifier

::=
"Next Slide" |
"Previous Slide" |

"First Slide" |
"Last Slide" |
"Play" | (Continuous playing slideshow)
"Pause" | (Pauses slideshow)
"Close" | (Exists player/Screen saver)
<[UrlLikeSpecifier](#)> |
<[PreciseSlideTag](#)>

Note that the URL may contain commands as well.

7.2.3.1.9.1.8.1 UrlLikeSpecifier

Most often people will use this to display a web page via a browser.
Example: <http://www.netpresenter.com>

7.2.3.1.9.1.8.2 PreciseSlideTag

::=
"Slide ID" <[SlideID](#)>

7.2.3.1.9.1.9 BackgroundDefinition

"COLOR" <[RGB](#)> "TO" <[RGB](#)> [<[ToRgbDefinitions](#)>] "TYPE" <[PatternTypeValue](#)> "STEPS" <unsigned decimal integer>

The range for the steps value is [1 ..50] steps.
The range for the thickness value is [0..10] pixels

Note that the editor always saves a STEPS value, even when using a solid brush without a gradient.

7.2.3.1.9.1.9.1 PatternTypeValue

::=
0 Solid (Default) |
1 Vertical |
2 Horizontal |
3 Box |
4 Concentric |
5 Radial |
6 Diagonal Right |
7 Transparent |
8 Test Pattern |
9 Shaded |
10 Diagonal Left

7.2.3.1.9.1.9.2 RGB

::=
<unsigned decimal char> " " <unsigned decimal char> " " <unsigned decimal char>

For example "0 255 0" for the colour green.
The range for each value is [0 .. 255].

7.2.3.1.9.1.9.3 ToRgbDefinitions

```
::=  
"TO" <RGB> [<ToRgbDefinitions>]
```

Max 6 color transitions may be defined (defining 7 colours totally)

7.2.3.1.9.1.10 BorderDefinition

```
::  
[<BorderColour>]  
["BORDER" <BorderStyle> "THICKNESS" <Thickness>]
```

Note that the current player and editor require the BORDER style definition to be positioned directly after the <BackgroundDefinition> (i.e. COLOR keyword), otherwise it will not be parsed correctly.

7.2.3.1.9.1.10.1 BorderStyle

```
::=  
0 None (default) |  
1 Solid |  
2 Bevel In |  
3 Bevel Out
```

7.2.3.1.9.1.10.2 BorderColour

```
::=  
["BPEN" <RGB>]
```

7.2.3.1.9.1.10.3 Thickness

```
::=  
<unsigned decimal integer>
```

7.2.3.1.9.1.11 EffectDescription

```
::=  
["EFFECT" <EffectType> "MIN" <MinTransitionTime> "MAX" <MaxTransitionTime> "SIZE" <BlockSize>]
```

7.2.3.1.9.1.11.1 EffectType

```
::=  
"No Effect" |  
"Random" |  
"Blinds, Horizontal" |  
"Blinds, Vertical" |  
"Checkerboard Right" |  
"Checkerboard Left" |  
"Checkerboard Down" |
```

"Checkerboard Up" |
"Expand Right" |
"Expand Left" |
"Expand Down" |
"Expand Up" |
"Expand from Top Left" |
"Expand from Top Right" |
"Expand from Bottom Left" |
"Expand from Bottom Right" |
"Expand Right and Left" |
"Expand Up and Down" |
"Expand from Center" |
"Flow Down" |
"Flow Up" |
"Flow Out, Up and Down" |
"Mirror" |
"Push Right" |
"Push Left" |
"Push Down" |
"Push Up" |
"Reveal Right" |
"Reveal Left" |
"Reveal Down" |
"Reveal Up" |
"Reveal Right and Left" |
"Reveal Up and Down" |
"Reveal Columns Left" |
"Slats, Left and Right" |
"Slats, Up and Down" |
"Slide Right" |
"Slide Left" |
"Slide Down" |
"Slide Up" |
"Slide from Right and Left" |
"Slide from Top and Bottom" |
"Slide Columns Right" |
"Ten Vertical Columns" |
"Two way Horizontal Bars" |
"Two way Vertical Bars" |
"Unroll Down" |
"Upside Down" |
"Wipe Right" |
"Wipe Left" |
"Wipe Down" |
"Wipe Up" |
"Wipe from Center" |
"Wipe to Center" |
"Wipe from Top Left" |
"Wipe from Top Right" |
"Wipe from Bottom Left" |
"Wipe from Bottom Right" |
"Wipe In, Right and Left" |
"Wipe In, Up and Down" |

"Wipe Out, Right and Left" |
"Wipe Out, Up and Down" |
"Wipe Out, 4 Directions" |
"Wipe In, 4 Directions" |
"Zig Zag Right" |
"Zig Zag Down"

Note 1: User defined transitions are also possible.

Note 2: The "Expand" effects (this includes the "random") effect are very CPU intensive and may hog your system.

These effects should never be used on terminal server systems!

7.2.3.1.9.1.11.2 MinTransitionTime

::=
<unsigned decimal integer>

Range [0 .. 9999] (milliseconds)

7.2.3.1.9.1.11.3 MaxTransitionTime

::=
<unsigned decimal integer>

Range [0 .. 9999] (milliseconds)

7.2.3.1.9.1.11.4 BlockSize

::=
<unsigned decimal integer>

Range [1 .. 99] (pixels)

7.2.3.2 MasterSlide

"SLIDE" <quoted string>
"BEGIN"
"ID" <unsigned decimal integer>
"MASTER"
[<[Objects](#)>]
[<[BackgroundDefinition](#)>]
["BRANCH" <[BranchToSpecifier](#)>]
[<[SlideScheduling](#)>]
[<[OnOrMoreAdvancedSchedulingOptions](#)>]
["OPTIONS" <[SlideOptionFlagValues](#)>]
["SECONDS" <unsigned decimal integer>]
["PRIORITY" <unsigned decimal integer>]
"END"

Same as [Slide](#), except for the MASTER specifier.

A master slide will not be rendered as such, but serves as a template for subsequent slides.

7.2.3.3 SubChannel

```
"SLIDE" <quoted string>
"BEGIN"
"ID" <unsigned decimal integer>
[ "SUBCHANNEL" <FullPathToChannel>]
[<SlideScheduling>]
[<OnOrMoreAdvancedSchedulingOptions>]
[<BackgroundDefinition>]
[ "OPTIONS" <SlideOptionFlagValues>]
"END"
```

Much the same as [Slide](#), except for the SUBCHANNEL specifier.

Some other options have no meaning when used in combination with a subchannel specifier (Rectangles, Ellipses etc.).

In fact, the Slide identifier is being (mis)used as a carrier for subchannels.

7.3 Sample channel files

7.3.1 Control Channel

The following channel file shows what is minimally needed to refer to 3 other channels.

```
CHNL 1002
SLIDE "Sales channel"
BEGIN
  SUBCHANNEL "\\Npser\Channels\Sales.chn"
  ID 1
END
SLIDE "CarOwners channel"
BEGIN
  SUBCHANNEL "\\Npser\Channels\CarOwners.chn"
  ID 2
END
SLIDE "Building ABC channel"
BEGIN
  SUBCHANNEL "\\Npser\Channels\BuildingABC.chn"
  ID 3
END
```

8 Netpresenter add-on modules

8.1 Introduction

Netpresenter build 153 and up support the concept of Netpresenter Add-on modules. The first add on module available is a DLL named `NpQueueManagement.dll` which, as the name implies, implements a method to display information from a queue management system in a part of the screen.

Note that the information to be displayed should come from an external queue management system. The version currently available monitors a directory for a file that contains the data to be displayed. As soon as the external system has changed the contents of this file, Netpresenter will update the display. Other ways of integrating a queue management system with Netpresenter (serial communication, communication over sockets etc.) may be developed upon request.

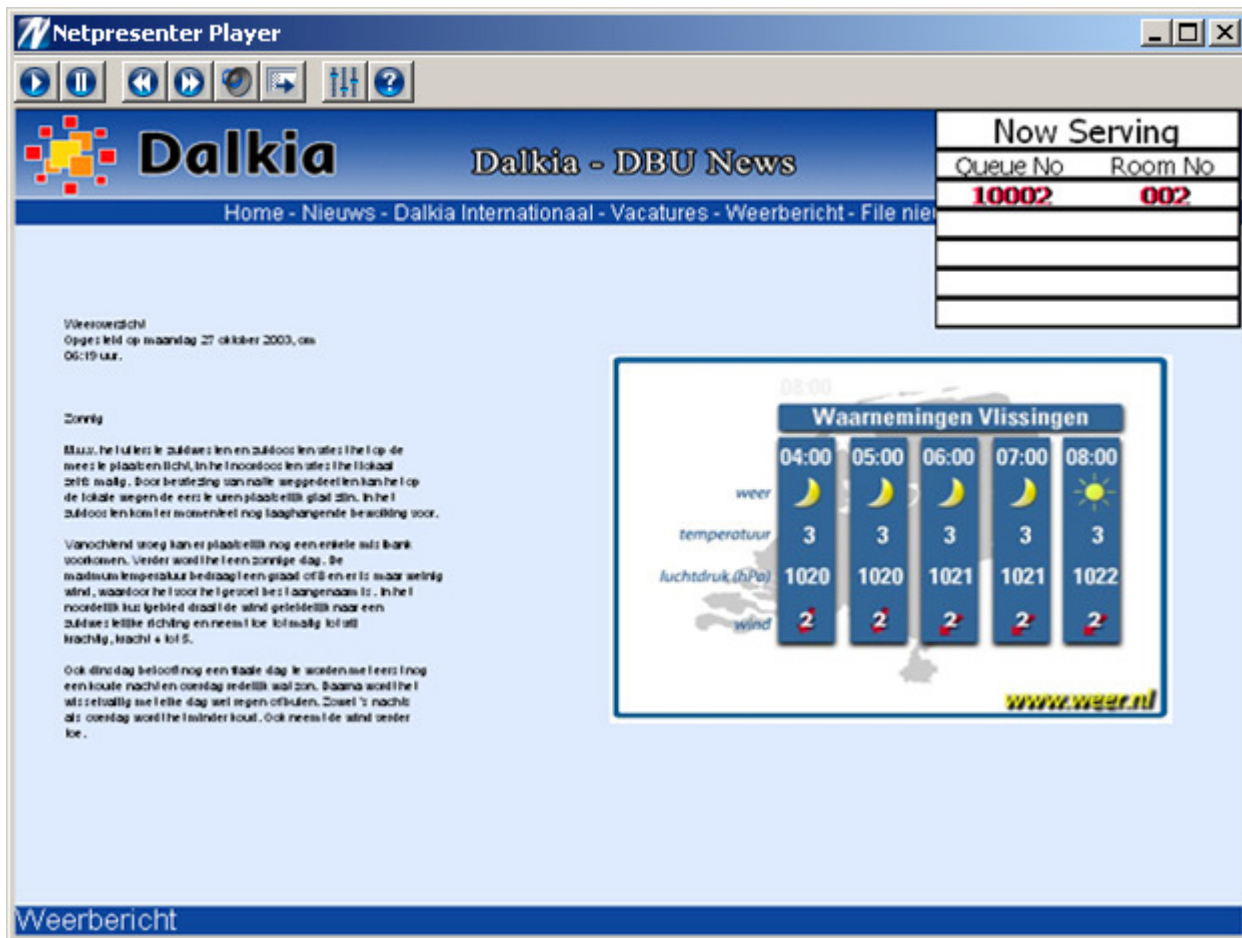
8.2 Installation Procedure

To enable Queue Management within Netpresenter, proceed as follows:

- (1) Make sure Netpresenter build 153 or later has been installed
- (2) Copy `NpQueueManagement.dll` and `Notify.wav` to the Netpresenter directory (most likely `c:\program files\Netpresenter`)
- (3) This dll needs to be registered first: Enter `'regsvr32 "c:\program files\netpresenter\NpQueueManagement.dll"'`. Do not forget the quotes (Copy and past it into the windows "run" command preferably). You should see a message that "DllRegisterServer has succeeded".
- (4) Add the following 2 lines to the `[general]` section of `netpres.ini` (in the Windows system directory, probably `c:\windows\netpres.ini` or `c:\winnt\netpres.ini`):

```
[General]
EnableComAddOns=1
CLSID_000=NpQueueManagement.QM
```

Now run Netpresenter as usual and verify that it displays as follows:



In this example the queue management information is being displayed in the upper right corner of the desktop player.

8.3 Tuning the Queue Management display

To satisfy customer requirements many properties of how the information should be displayed are configurable by changing entries in the file `NpQueueManagement.ini` that should reside in the same directory as `NpQueueManagement.dll`.

For a start you could past the contents of the following box into a .ini with that name (use for example notepad make or change the file).

```
[QM]
;Use 6400 X 4800 coordinate system
X=4800
Y=0
W=1600
H=1200
FileToMonitor=c:\program files\netpresenter\monitor\qm\qm.txt
SoundFile=c:\program files\netpresenter\notify.wav
NrOfTickets=5
Separator=
DrawGrid=1
PenWidth=2
```

ColorBackground=255, 255, 255
Willget2Notifications=1

[Header1]

FontType=Tahoma
FontSize=0
Text=Now Serving
FontWeight=400
ColorText=0, 0, 0
ColorShadow=0, 0, 0
xShadow=0
yShadow=0
ColorOutline=0, 0, 0
Outline=0
ColorBackground=255, 255, 255

[Header2a]

FontType=Tahoma
FontSize=0
Text=Queue No
FontWeight=400
ColorText=0, 0, 0
ColorShadow=0, 0, 0
xShadow=0
yShadow=0
ColorOutline=0, 0, 0
Outline=0
ColorBackground=255, 255, 255

[Header2b]

FontType=Tahoma
FontSize=0
Text=Room No
FontWeight=400
ColorText=0, 0, 0
ColorShadow=0, 0, 0
xShadow=0
yShadow=0
ColorOutline=0, 0, 0
Outline=0
ColorBackground=255, 255, 255

[BodyTopmost]

FontType=Tahoma
FontSize=0
Text=
FontWeight=700
ColorText=255, 15, 71
ColorShadow=0, 0, 0
xShadow=2
yShadow=0
ColorOutline=0, 0, 0
Outline=0
ColorBackground=255, 255, 255

[Body]

FontType=Tahoma
FontSize=0
Text=
FontWeight=700
ColorText=0, 0, 0
ColorShadow=0, 0, 0
xShadow=0
yShadow=0
ColorOutline=0, 0, 0
Outline=0
ColorBackground=255, 255, 255

8.3.1 Section [QM]

The section [QM] determines general parameters for the Queue Management display.

The entries X, Y, W, H determine the x, y position and the width/height of the display according to the same coordinate system Netpresenter currently uses, i.e. it regards the screen as an area that is 6400 units wide and 4800 units high. By using a width of 1600 and a height of 1200 the area reserved for displaying the queue management information will occupy 1/4th of the screen's width (6400/1600) and 1/4th of the screen's height (4800/1200). By setting X to 4800 (6400 – 1600) and Y to 0, it will be positioned in the upper right corner (The origin, 0, 0 is located at the upper left corner of the screen).

`FileToMonitor`, `Separator` and `Willget2Notifications` are used to integrate with a particular queue management system. Also see the next paragraph in this document.

`NrOfTickets` determines how many lines will be displayed. The default is 5.

The file "notify.wav" is used to play a sound whenever the queue management display changes. Other .wav files may be used by changing the `SoundFile` entry in the [QM] section of `NpQueueManagement.ini`.

`DrawGrid` determines whether a grid will be drawn to separate the lines. The grid will be drawn with a thickness (in pixels) as denoted in `PenWidth`.

`ColorBackground` determines the background color in R,G,B values ranging from 0 to 255.

8.3.2 Other sections

The other sections all have a similar set-up

Five independent objects have been defined, 1 for [Header1], 2 for the headers at line2, 1 for the most current ticket and one for all other tickets.

Properties of the topmost line (which reads "Now Serving" in the sample above) are stored in the section [Header1]. The section that displays "Queue No" may be configured by changing entries in the section [Header2a]. Likewise, [Header2b] determines what and how the section now reading "Room No" should be displayed.

The 3rd line displays information desk that became available last, and may be displayed highlighted. See section [BodyTopmost] for how this section should be displayed. Last, the section [Body] determines how the remaining lines should be displayed.

Each section allows individual selection of font settings, like typeface, height, weight etc. The names should speak for themselves. A `FontWeight` of 400 represents 'NORMAL', a `FontWeight` of 700 represents 'BOLD'.

When you change the font size of `Header1`, `Header2a` and `Header2b` and leave the font size of `BodyTopmost` and `Body` equal to 0, the last 5 rows will automatically use the space that is left so you do not have to match the total number of font sizes with the height of the rectangle. I hope this gives you the flexibility needed.

8.4 Integration with a Queue Management System

The queue management module monitors a directory for a file named `qm.txt`. (See `FileToMonitor` in the `[QM]` section of the `.ini` file above).

This file should contain the ticket number and the counter number, separated by a semi-colon (`;`) or any other character specified by `Separator` in the `.ini` file such as the space character ().

For example:

```
1003;03
```

As soon as the file denoted by `FileToMonitor` changes, its contents will be displayed in the queue management system.

The text will be displayed as entered, i.e.:

- zero's like in 001 etc. will be displayed
- It is possible to use the same ticket number and counter number multiple times (customer request)

If you notice that on your system only every 2nd ticket nr is being displayed, please set:

`Willget2Notifications=0` In the `[QM]` section of the `.ini` file used.

Please note that the `.ini` file may be saved as Unicode and that display of Unicode headers is supported.

9 Use of the Message Server

9.1 Quick overview

The message server offers the possibility to add messages to existing presentations without using the editor. This can be done from any PC with a web browser.

The message server is a web service that runs on any Webserver that supports the PHP script language (e.g. Internet Information Server or Apache Webserver).

By using a browser from any location, one can submit data to an existing template of a channel file. The template would contain a pre-formatted a default slide that contains the company logo or has been laid out to comply with the company standards.

Anyone authorized will be able to enter new data from any PC with an Internet Browser. Knowledge of the Netpresenter editor is not required.

The client PC's would typically subscribe to a channels that simply refers to the channel generated by the message server as one of the subchannels.

One simply adds a reference to the message server channel on the composed channel file. In this example below the channel `MessageServer.chn` could for example be generated by the message server.

```
CHNL 1002
SLIDE "Corporate Channel"
BEGIN
  SUBCHANNEL "http://192.168.255.20/Channels/main/main.chn"
  ID 1
END
SLIDE "Message Server"
BEGIN
  SUBCHANNEL "http://192.168.255.50/Channels/MessageServer.chn"
  ID 2
END
```

The message server should be set up so that it publishes its channel to for example `http://192.168.255.50/Channels/MessageServer.chn`.

The message server uses a master slide (template) that contains keywords at certain locations. In the sample channel below, note the keywords between square brackets (`[subject]`, `[summary]` and `[intranet]`).

The message server replaces these keywords with the texts entered. For each new message that is added, a new slide with the same layout will be added to the channel

```

CHNL 1002
SLIDE "Unnamed"
BEGIN
  ID 1

  FONT "Arial" 25 0
  JUSTIFY LEFT VCENTER
  COLOR 0 255 255 TYPE 7 STEPS 50
  APEN 21 94 24
  RECTANGLE 1707 1488 6380 1750 TEXT "[subject]"

  FONT "Arial" 15 0
  JUSTIFY LEFT TOP
  COLOR 0 8 8 TYPE 7 STEPS 50
  RECTANGLE 1723 1804 6351 4204 TEXT "[summary]"

  FONT "Arial" 13 0
  COLOR 0 255 255 TYPE 7 STEPS 50
  BRANCH "[intranet]"
  RECTANGLE "chn_button" 153 1542 1371 1804 TEXT "[subject]"

  FONT "Arial" 50 0
  JUSTIFY CENTER VCENTER
  COLOR 21 94 24 STEPS 50
  APEN 255 255 255
  ELLIPSE "chn_bullet" 63 1565 126 1646

  FONT "Arial" 10 0
  COLOR 0 0 255 TO 0 0 0 TYPE 1 STEPS 50
  BIMAGE "C:\Program Files\Message Server\template\chn\back.jpg"
  OPTIONS 4
END

```

(For more information, see Ref. 2 "Netpresenter Message Server Installation Instructions").

9.2 Foreign language support

The message server instructs the browser to use load codepage iso-8859-1 (less formally known as Latin-1) for displaying its content. This is determined by the template pages being used. (Also see the line `default_charset="iso-8859-1"` under the [PHP] section in the message server's `php.ini` file). Please note that iso-8859-1 is a superset of iso 8859-1 (note the missing hyphen).

The channels being generated will be based on codepage Ansi 1252, which is the same as the Netpresenter player's use by default (although this can be tweaked by changing the "locale" key under the [general] section of `netpres.ini`). Ansi 1252 displays all displayable characters from Iso-8859-1 correctly (in fact it has some displayable characters for positions in Iso-8859-1 that define non-displayable control characters in the 80-9F range).

10 Network Load Study

10.1 Introduction

Most Network operators wonder about the (lack of) network load imposed by Netpresenter and prefer to see hard evidence instead of remarks like “designed for low bandwidth” or “typically less then 50 KB per PC/day”.

This document provides hard proof of the low bandwidth nature of the Netpresenter clients. It measures the Netpresenter network replication over HTTP, FTP and SMB (SMB is the protocol used to implement windows file sharing over TCP/IP) and gives hard data which can easily be verified.

The Netpresenter thin client, low bandwidth players, feature an intelligent local cache which prevent unnecessary network traffic by discretely polling a server location. Only files which have changed are downloaded once in the local cache of the PC.

During normal operation, Netpresenter will retrieve a channel's timestamp once every update interval. Only when a timestamp (read a file) has changed, a channel will be downloaded. Netpresenter usually only downloads the channel script file which is text based and typically 10-50 kByte large. Bitmap files that have not changed will not be downloaded again.

Netpresenter uses an elegant hypertext script language for its presentations; a presentation exists of a (script) channel file and other content (such as images and documents). This means that Netpresenter players only download what has changed, saving valuable network resources.

10.2 How did we measure the network load

We took a typical Netpresenter channel (script) which exists of 12 slides, 2 bitmaps. To get enough samples we set the update interval very short (1 minute) and started the Netpresenter player.

We started the network sniffer at significant moments in the program, i.e. just before requesting a timestamp, or just before starting a copy file operation. Excerpts of the original capture files have been included in this document.

10.3 SMB

Channel: [\\s1\channels\Dutch Channels\schiphol\schiphol2\schiphol.chn](smb://s1/channels/Dutch Channels/schiphol/schiphol2/schiphol.chn)

Operating System: Windows 2000 server SP 4

FileExist

| No. | Time | Source | Destination | Protocol | Info |
|---------------|----------------------------|-----------------|-----------------|----------|--|
| 11 | 2003-12-11 11:04:19.000151 | 192.168.255.177 | 192.168.255.1 | SMB | NT Create AndX Request, Path: \Dutch Channels\schiphol\schiphol2\schiphol.chn |
| 12 | 2003-12-11 11:04:19.001970 | 192.168.255.1 | 192.168.255.177 | SMB | NT Create AndX Response, FID: 0x8001 |
| 13 | 2003-12-11 11:04:19.004935 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_FILE_INFO, FID: 0x8001, Query File Internal Info |
| 14 | 2003-12-11 11:04:19.005248 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_FILE_INFO |
| 15 | 2003-12-11 11:04:19.006057 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Basic Info, Path: \Dutch Channels |
| 16 | 2003-12-11 11:04:19.006608 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 17 | 2003-12-11 11:04:19.006876 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Alt Name Info, Path: \Dutch Channels |
| 18 | 2003-12-11 11:04:19.007412 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 19 | 2003-12-11 11:04:19.007755 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Basic Info, Path: \Dutch Channels\schiphol |
| 20 | 2003-12-11 11:04:19.008309 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 21 | 2003-12-11 11:04:19.008490 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Alt Name Info, Path: \Dutch Channels\schiphol |
| 22 | 2003-12-11 11:04:19.009022 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 23 | 2003-12-11 11:04:19.009497 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Basic Info, Path: \Dutch Channels\schiphol\schiphol2 |
| 24 | 2003-12-11 11:04:19.010053 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 25 | 2003-12-11 11:04:19.010252 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Alt Name Info, Path: \Dutch Channels\schiphol\schiphol2 |
| 26 | 2003-12-11 11:04:19.010799 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 27 | 2003-12-11 11:04:19.011102 | 192.168.255.177 | 192.168.255.1 | SMB | Close Request, FID: 0x8001 |
| 28 | 2003-12-11 11:04:19.011389 | 192.168.255.1 | 192.168.255.177 | SMB | Close Response |
| 29 | 2003-12-11 11:04:19.011570 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Basic Info, Path: \Dutch Channels\schiphol\schiphol2\schiphol.chn |
| 30 | 2003-12-11 11:04:19.012141 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 31 | 2003-12-11 11:04:19.012371 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Alt Name Info, Path: \Dutch Channels\schiphol\schiphol2\schiphol.chn |
| 32 | 2003-12-11 11:04:19.012923 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 33 | 2003-12-11 11:04:19.013396 | 192.168.255.177 | 192.168.255.1 | SMB | NT Create AndX Request, Path: \Dutch Channels\schiphol\schiphol2\schiphol.chn |
| 34 | 2003-12-11 11:04:19.014946 | 192.168.255.1 | 192.168.255.177 | SMB | NT Create AndX Response, FID: 0x8002 |
| 35 | 2003-12-11 11:04:19.015328 | 192.168.255.177 | 192.168.255.1 | SMB | Read AndX Request, FID: 0x8002, 4096 bytes at offset 0 |
| 36 | 2003-12-11 11:04:19.016183 | 192.168.255.1 | 192.168.255.177 | SMB | Read AndX Response, FID: 0x8002, 4096 bytes |
| 37 | 2003-12-11 11:04:19.016345 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 38 | 2003-12-11 11:04:19.016387 | 192.168.255.177 | 192.168.255.1 | TCP | 3446 > microsoft-ds [ACK] Seq=1763253103 |
| Ack=841197417 | Win=64512 | Len=0 | | | |
| 39 | 2003-12-11 11:04:19.016455 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 40 | 2003-12-11 11:04:19.016766 | 192.168.255.177 | 192.168.255.1 | SMB | Read AndX Request, FID: 0x8002, 1108 bytes at offset 8192 |
| 41 | 2003-12-11 11:04:19.017360 | 192.168.255.1 | 192.168.255.177 | SMB | Read AndX Response, FID: 0x8002, 1108 bytes |
| 42 | 2003-12-11 11:04:19.017678 | 192.168.255.177 | 192.168.255.1 | SMB | Read AndX Request, FID: 0x8002, 4096 bytes at offset 4096 |
| 43 | 2003-12-11 11:04:19.018400 | 192.168.255.1 | 192.168.255.177 | SMB | Read AndX Response, FID: 0x8002, 4096 bytes |
| 44 | 2003-12-11 11:04:19.018560 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 45 | 2003-12-11 11:04:19.018600 | 192.168.255.177 | 192.168.255.1 | TCP | 3446 > microsoft-ds [ACK] Seq=1763253229 |
| Ack=841202749 | Win=64512 | Len=0 | | | |
| 46 | 2003-12-11 11:04:19.018661 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 47 | 2003-12-11 11:04:19.024352 | 192.168.255.177 | 192.168.255.1 | SMB | Close Request, FID: 0x8002 |
| 48 | 2003-12-11 11:04:19.024758 | 192.168.255.1 | 192.168.255.177 | SMB | Close Response |
| 49 | 2003-12-11 11:04:19.024947 | 192.168.255.177 | 192.168.255.1 | SMB | NT Create AndX Request, Path: \Dutch Channels\schiphol\schiphol2\schiphol.chn |
| 50 | 2003-12-11 11:04:19.026517 | 192.168.255.1 | 192.168.255.177 | SMB | NT Create AndX Response, FID: 0x8003 |
| 51 | 2003-12-11 11:04:19.197936 | 192.168.255.177 | 192.168.255.1 | TCP | 3446 > microsoft-ds [ACK] Seq=1763253458 |
| Ack=841204167 | Win=63094 | Len=0 | | | |

FileTime

| No. | Time | Source | Destination | Protocol | Info |
|---------------|----------------------------|-----------------|-----------------|----------|--|
| 18 | 2003-12-11 11:06:08.682014 | 192.168.255.177 | 192.168.255.1 | SMB | Tree Connect AndX Request, Path: \\S1\CHANNELS |
| 19 | 2003-12-11 11:06:08.682426 | 192.168.255.1 | 192.168.255.177 | SMB | Tree Connect AndX Response |
| 20 | 2003-12-11 11:06:08.682729 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, QUERY_PATH_INFO, Query File Basic Info, Path: \Dutch Channels\schiphol\schiphol2 |
| 21 | 2003-12-11 11:06:08.683421 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, QUERY_PATH_INFO |
| 22 | 2003-12-11 11:06:08.683793 | 192.168.255.177 | 192.168.255.1 | SMB | Trans2 Request, FIND_FIRST2, Pattern: \Dutch Channels\schiphol\schiphol2\schiphol.chn |
| 23 | 2003-12-11 11:06:08.684988 | 192.168.255.1 | 192.168.255.177 | SMB | Trans2 Response, FIND_FIRST2, Files: schiphol.chn |
| 24 | 2003-12-11 11:06:08.710472 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 25 | 2003-12-11 11:06:08.810703 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 26 | 2003-12-11 11:06:08.843713 | 192.168.255.177 | 192.168.255.1 | TCP | 3446 > microsoft-ds [ACK] Seq=1763254638 |
| Ack=841205381 | Win=63403 | Len=0 | | | |
| 27 | 2003-12-11 11:06:08.910838 | 65369.1 | 0.255 | ZIP | GetNetInfo request |

| | | | | | | |
|----|------------|-----------------|-----------------|-----------------|---------|--|
| 28 | 2003-12-11 | 11:06:10.924018 | 192.168.255.178 | 192.168.255.255 | BROWSER | Host Announcement DANCER, Workstation, Server, NT Workstation, Potential Browser |
| 29 | 2003-12-11 | 11:06:14.005672 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 30 | 2003-12-11 | 11:06:14.106927 | 65369.1 | 0.255 | ZIP | GetNetInfo request |

CopyFile

| No. | Time | Source | Destination | Protocol | Info |
|---------|------------|-----------------|---|-----------------|--|
| 1 | 2003-12-11 | 11:16:19.289005 | 65369.1 | 0.255 | ZIP GetNetInfo request |
| 2 | 2003-12-11 | 11:16:19.390513 | 65369.1 | 0.255 | ZIP GetNetInfo request |
| 3 | 2003-12-11 | 11:16:19.490361 | 65369.1 | 0.255 | ZIP GetNetInfo request |
| 4 | 2003-12-11 | 11:16:19.582304 | 65369.1 | 0.255 | ZIP GetNetInfo request |
| 5 | 2003-12-11 | 11:16:19.682484 | 65369.1 | 0.255 | ZIP GetNetInfo request |
| 6 | 2003-12-11 | 11:16:22.214143 | 192.168.255.177 | 192.168.255.255 | NETLOGON SAM LOGON request from client |
| 7 | 2003-12-11 | 11:16:22.214327 | 192.168.255.177 | 192.168.255.20 | NETLOGON SAM LOGON request from client |
| 8 | 2003-12-11 | 11:16:22.214448 | 192.168.255.177 | 194.109.111.132 | NETLOGON SAM LOGON request from client |
| 9 | 2003-12-11 | 11:16:22.214728 | 192.168.255.20 | 192.168.255.177 | NETLOGON SAM Active Directory Response - user |
| unknown | | | | | |
| 10 | 2003-12-11 | 11:16:22.314357 | 192.168.255.177 | 192.168.255.20 | NETLOGON Query for PDC from PRANCER |
| 11 | 2003-12-11 | 11:16:22.314714 | 192.168.255.20 | 192.168.255.177 | NETLOGON SAM Active Directory Response - user |
| unknown | | | | | |
| 12 | 2003-12-11 | 11:16:23.034446 | 192.168.255.177 | 192.168.255.1 | SMB NT Create AndX Request, Path: \Dutch |
| | | | Channels\schiphol\schiphol2\schiphol.chn | | |
| 13 | 2003-12-11 | 11:16:23.036376 | 192.168.255.1 | 192.168.255.177 | SMB NT Create AndX Response, FID: 0x8007 |
| 14 | 2003-12-11 | 11:16:23.039459 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_FILE_INFO, FID: 0x8007, Query File Internal Info |
| 15 | 2003-12-11 | 11:16:23.039783 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_FILE_INFO |
| 16 | 2003-12-11 | 11:16:23.040591 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Basic Info, Path: \Dutch Channels | | |
| 17 | 2003-12-11 | 11:16:23.041150 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 18 | 2003-12-11 | 11:16:23.041419 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Alt Name Info, Path: \Dutch Channels | | |
| 19 | 2003-12-11 | 11:16:23.041961 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 20 | 2003-12-11 | 11:16:23.042310 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Basic Info, Path: \Dutch Channels\schiphol | | |
| 21 | 2003-12-11 | 11:16:23.042857 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 22 | 2003-12-11 | 11:16:23.043038 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Alt Name Info, Path: \Dutch Channels\schiphol | | |
| 23 | 2003-12-11 | 11:16:23.043612 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 24 | 2003-12-11 | 11:16:23.043936 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Basic Info, Path: \Dutch Channels\schiphol\schiphol2 | | |
| 25 | 2003-12-11 | 11:16:23.044491 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 26 | 2003-12-11 | 11:16:23.044668 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Alt Name Info, Path: \Dutch Channels\schiphol\schiphol2 | | |
| 27 | 2003-12-11 | 11:16:23.045222 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 28 | 2003-12-11 | 11:16:23.045763 | 192.168.255.177 | 192.168.255.1 | SMB Close Request, FID: 0x8007 |
| 29 | 2003-12-11 | 11:16:23.046059 | 192.168.255.1 | 192.168.255.177 | SMB Close Response |
| 30 | 2003-12-11 | 11:16:23.046256 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Basic Info, Path: \Dutch Channels\schiphol\schiphol2\schiphol.chn | | |
| 31 | 2003-12-11 | 11:16:23.046826 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 32 | 2003-12-11 | 11:16:23.046996 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, Query |
| | | | File Alt Name Info, Path: \Dutch Channels\schiphol\schiphol2\schiphol.chn | | |
| 33 | 2003-12-11 | 11:16:23.047546 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_PATH_INFO |
| 34 | 2003-12-11 | 11:16:23.047997 | 192.168.255.177 | 192.168.255.1 | SMB NT Create AndX Request, Path: \Dutch |
| | | | Channels\schiphol\schiphol2\schiphol.chn | | |
| 35 | 2003-12-11 | 11:16:23.049592 | 192.168.255.1 | 192.168.255.177 | SMB NT Create AndX Response, FID: 0x8009 |
| 36 | 2003-12-11 | 11:16:23.049973 | 192.168.255.177 | 192.168.255.1 | SMB Read AndX Request, FID: 0x8009, 4096 |
| | | | bytes at offset 0 | | |
| 37 | 2003-12-11 | 11:16:23.050830 | 192.168.255.1 | 192.168.255.177 | SMB Read AndX Response, FID: 0x8009, 4096 |
| | | | bytes | | |
| 38 | 2003-12-11 | 11:16:23.050987 | 192.168.255.1 | 192.168.255.177 | NBSS NBSS Continuation Message |
| 39 | 2003-12-11 | 11:16:23.051028 | 192.168.255.177 | 192.168.255.1 | TCP 3446 > microsoft-ds [ACK] Seq=1763259244 |
| | | | Ack=841230601 Win=64512 Len=0 | | |
| 40 | 2003-12-11 | 11:16:23.051089 | 192.168.255.1 | 192.168.255.177 | NBSS NBSS Continuation Message |
| 41 | 2003-12-11 | 11:16:23.051415 | 192.168.255.177 | 192.168.255.1 | SMB Read AndX Request, FID: 0x8009, 1108 |
| | | | bytes at offset 8192 | | |
| 42 | 2003-12-11 | 11:16:23.051978 | 192.168.255.1 | 192.168.255.177 | SMB Read AndX Response, FID: 0x8009, 1108 |
| | | | bytes | | |
| 43 | 2003-12-11 | 11:16:23.052266 | 192.168.255.177 | 192.168.255.1 | SMB Read AndX Request, FID: 0x8009, 4096 |
| | | | bytes at offset 4096 | | |
| 44 | 2003-12-11 | 11:16:23.052987 | 192.168.255.1 | 192.168.255.177 | SMB Read AndX Response, FID: 0x8009, 4096 |
| | | | bytes | | |
| 45 | 2003-12-11 | 11:16:23.053149 | 192.168.255.1 | 192.168.255.177 | NBSS NBSS Continuation Message |
| 46 | 2003-12-11 | 11:16:23.053189 | 192.168.255.177 | 192.168.255.1 | TCP 3446 > microsoft-ds [ACK] Seq=1763259370 |
| | | | Ack=841235933 Win=64512 Len=0 | | |
| 47 | 2003-12-11 | 11:16:23.053253 | 192.168.255.1 | 192.168.255.177 | NBSS NBSS Continuation Message |
| 48 | 2003-12-11 | 11:16:23.059111 | 192.168.255.177 | 192.168.255.1 | SMB Close Request, FID: 0x8009 |
| 49 | 2003-12-11 | 11:16:23.059410 | 192.168.255.1 | 192.168.255.177 | SMB Close Response |
| 50 | 2003-12-11 | 11:16:23.059597 | 192.168.255.177 | 192.168.255.1 | SMB NT Create AndX Request, Path: \Dutch |
| | | | Channels\schiphol\schiphol2\schiphol.chn | | |
| 51 | 2003-12-11 | 11:16:23.061169 | 192.168.255.1 | 192.168.255.177 | SMB NT Create AndX Response, FID: 0x8008 |
| 52 | 2003-12-11 | 11:16:23.061455 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_FILE_INFO, FID: 0x8008, Query File Basic Info |
| | | | 0x8008, Query File Basic Info | | |
| 53 | 2003-12-11 | 11:16:23.061754 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_FILE_INFO |
| 54 | 2003-12-11 | 11:16:23.067793 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_PATH_INFO, FID: 0x8008, Query File Stream Info |
| | | | 0x8008, Query File Stream Info | | |
| 55 | 2003-12-11 | 11:16:23.068168 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_FILE_INFO |
| 56 | 2003-12-11 | 11:16:23.068320 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_FILE_INFO, FID: 0x8008, Query File Basic Info |
| | | | 0x8008, Query File Basic Info | | |
| 57 | 2003-12-11 | 11:16:23.068612 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_FILE_INFO |
| 58 | 2003-12-11 | 11:16:23.075841 | 192.168.255.177 | 192.168.255.1 | SMB Trans2 Request, QUERY_FS_INFO, Query FS |
| | | | Attribute Info | | |
| 59 | 2003-12-11 | 11:16:23.076150 | 192.168.255.1 | 192.168.255.177 | SMB Trans2 Response, QUERY_FS_INFO |

| | | | | | | |
|-------------------------------|------------|-----------------|-----------------------|-----------------------|---------|--|
| 60 | 2003-12-11 | 11:16:23.076696 | 192.168.255.177 | 192.168.255.1 | SMB | Read AndX Request, FID: 0x8008, 9300 |
| bytes at offset 0 | | | | | | |
| 61 | 2003-12-11 | 11:16:23.077566 | 192.168.255.1 | 192.168.255.177 | SMB | Read AndX Response, FID: 0x8008, 9300 |
| bytes | | | | | | |
| 62 | 2003-12-11 | 11:16:23.077724 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 63 | 2003-12-11 | 11:16:23.077767 | 192.168.255.177 | 192.168.255.1 | TCP | 3446 > microsoft-ds [ACK] Seq=1763259964 |
| Ack=841240661 Win=64512 Len=0 | | | | | | |
| 64 | 2003-12-11 | 11:16:23.077846 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 65 | 2003-12-11 | 11:16:23.078038 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 66 | 2003-12-11 | 11:16:23.078076 | 192.168.255.177 | 192.168.255.1 | TCP | 3446 > microsoft-ds [ACK] Seq=1763259964 |
| Ack=841243581 Win=64512 Len=0 | | | | | | |
| 67 | 2003-12-11 | 11:16:23.078198 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 68 | 2003-12-11 | 11:16:23.078356 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 69 | 2003-12-11 | 11:16:23.078374 | 192.168.255.1 | 192.168.255.177 | NBSS | NBSS Continuation Message |
| 70 | 2003-12-11 | 11:16:23.078515 | 192.168.255.177 | 192.168.255.1 | TCP | 3446 > microsoft-ds [ACK] Seq=1763259964 |
| Ack=841247105 Win=64512 Len=0 | | | | | | |
| 71 | 2003-12-11 | 11:16:24.785341 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 72 | 2003-12-11 | 11:16:24.885846 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 73 | 2003-12-11 | 11:16:24.985858 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 74 | 2003-12-11 | 11:16:25.086056 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 75 | 2003-12-11 | 11:16:25.106455 | Netronix_f3:81:ef | Broadcast | ARP | Who has 192.168.255.3? Tell |
| 192.168.255.1 | | | | | | |
| 76 | 2003-12-11 | 11:16:25.186519 | 65369.1 | 0.255 | ZIP | GetNetInfo request |
| 77 | 2003-12-11 | 11:16:26.887393 | 00000000.00c002a95600 | 00000000.ffffffffffff | IPX SAP | Nearest Query |

10.4 HTTP

Channel: http://192.168.255.9/chn/Dutch Channels/schiphol/schiphol2/schiphol.chn

Operating System: Windows 2000 server SP 4

HTTP Server: Apache 2.0.48

FileTime

| No. | Time | Source | Destination | Protocol | Info |
|-----|----------------------------|-----------------|-----------------|----------|---|
| 14 | 2003-12-11 15:45:35.675009 | 192.168.255.177 | 192.168.255.9 | TCP | 3739 > http [SYN] Seq=1714195108 Ack=0 Win=64512 Len=0 |
| 15 | 2003-12-11 15:45:35.675246 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3739 [SYN, ACK] Seq=507025653 Ack=1714195109 Win=65535 Len=0 |
| 16 | 2003-12-11 15:45:35.675309 | 192.168.255.177 | 192.168.255.9 | TCP | 3739 > http [ACK] Seq=1714195109 Ack=507025654 Win=64512 Len=0 |
| 17 | 2003-12-11 15:45:35.675514 | 192.168.255.177 | 192.168.255.9 | HTTP | HEAD /chn/Dutch%20Channels/schiphol/schiphol2/schiphol.chn HTTP/1.1 |
| 18 | 2003-12-11 15:45:35.683062 | 192.168.255.9 | 192.168.255.177 | HTTP | HTTP/1.1 200 OK |
| 19 | 2003-12-11 15:45:35.683187 | 192.168.255.177 | 192.168.255.9 | TCP | 3739 > http [FIN, ACK] Seq=1714195298 Ack=507025914 Win=64252 Len=0 |
| 20 | 2003-12-11 15:45:35.683368 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3739 [ACK] Seq=507025914 Ack=1714195299 Win=65346 Len=0 |
| 21 | 2003-12-11 15:45:35.683637 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3739 [FIN, ACK] Seq=507025914 Ack=1714195299 Win=65346 Len=0 |
| 22 | 2003-12-11 15:45:35.683695 | 192.168.255.177 | 192.168.255.9 | TCP | 3739 > http [ACK] Seq=1714195299 Ack=507025915 Win=64252 Len=0 |

The textual contents being transmitted when requesting a timestamp over HTTP is as follows:

| |
|---|
| HEAD /chn/dutch%20channels/schiphol/schiphol2/schiphol.chn HTTP/1.1 |
| Accept: Accept: */* |
| User-Agent: Netpresenter/3.6.0 |
| Host: 192.168.255.9 |
| Content-Length: 0 |
| Cache-Control: no-cache |
| HTTP/1.1 200 OK |
| Date: Tue, 02 Dec 2003 14:54:08 GMT |
| Server: Apache/2.0.46 (Win32) |
| Last-Modified: Tue, 02 Dec 2003 13:11:01 GMT |
| ETag: "418-2454-17076040" |
| Accept-Ranges: bytes |
| Content-Length: 9300 |
| Content-Type: text/plain; charset=ISO-8859-1 |

FileExist

| No. | Time | Source | Destination | Protocol | Info |
|-----|----------------------------|-----------------|-----------------|----------|---|
| 11 | 2003-12-11 15:48:24.076802 | 192.168.255.177 | 192.168.255.9 | TCP | 3741 > http [SYN] Seq=1756288761 Ack=0 Win=64512 Len=0 |
| 12 | 2003-12-11 15:48:24.077011 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3741 [SYN, ACK] Seq=546843954 Ack=1756288762 Win=65535 Len=0 |
| 13 | 2003-12-11 15:48:24.077075 | 192.168.255.177 | 192.168.255.9 | TCP | 3741 > http [ACK] Seq=1756288762 Ack=546843955 Win=64512 Len=0 |
| 14 | 2003-12-11 15:48:24.077280 | 192.168.255.177 | 192.168.255.9 | HTTP | HEAD /chn/Dutch%20Channels/schiphol/schiphol2/schiphol.chn HTTP/1.1 |
| 15 | 2003-12-11 15:48:24.085046 | 192.168.255.9 | 192.168.255.177 | HTTP | HTTP/1.1 200 OK |
| 16 | 2003-12-11 15:48:24.085276 | 192.168.255.177 | 192.168.255.9 | TCP | 3741 > http [FIN, ACK] Seq=1756288951 Ack=546844215 Win=64252 Len=0 |
| 17 | 2003-12-11 15:48:24.085457 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3741 [ACK] Seq=546844215 Ack=1756288952 Win=65346 Len=0 |
| 18 | 2003-12-11 15:48:24.085601 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3741 [FIN, ACK] Seq=546844215 Ack=1756288952 Win=65346 Len=0 |
| 19 | 2003-12-11 15:48:24.085666 | 192.168.255.177 | 192.168.255.9 | TCP | 3741 > http [ACK] Seq=1756288952 Ack=546844216 Win=64252 Len=0 |

FileTime

| No. | Time | Source | Destination | Protocol | Info |
|-----|----------------------------|-----------------|-----------------|----------|---|
| 6 | 2003-12-11 15:54:32.098770 | 192.168.255.177 | 192.168.255.9 | TCP | 3752 > http [SYN] Seq=1848576072 Ack=0 Win=64512 Len=0 |
| 7 | 2003-12-11 15:54:32.099018 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3752 [SYN, ACK] Seq=633722187 Ack=1848576073 Win=65535 Len=0 |
| 8 | 2003-12-11 15:54:32.099079 | 192.168.255.177 | 192.168.255.9 | TCP | 3752 > http [ACK] Seq=1848576073 Ack=633722188 Win=64512 Len=0 |
| 9 | 2003-12-11 15:54:32.099289 | 192.168.255.177 | 192.168.255.9 | HTTP | HEAD /chn/Dutch%20Channels/schiphol/schiphol2/schiphol.chn HTTP/1.1 |
| 10 | 2003-12-11 15:54:32.106876 | 192.168.255.9 | 192.168.255.177 | HTTP | HTTP/1.1 200 OK |
| 11 | 2003-12-11 15:54:32.106998 | 192.168.255.177 | 192.168.255.9 | TCP | 3752 > http [FIN, ACK] Seq=1848576262 Ack=633722448 Win=64252 Len=0 |

| | | | | | |
|--------------------------------|----------------------------|-----------------|-----------------|-----|--------------------------------------|
| 12 | 2003-12-11 15:54:32.107177 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3752 [ACK] Seq=633722448 |
| Ack=1848576263 Win=65346 Len=0 | | | | | |
| 13 | 2003-12-11 15:54:32.107443 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3752 [FIN, ACK] Seq=633722448 |
| Ack=1848576263 Win=65346 Len=0 | | | | | |
| 14 | 2003-12-11 15:54:32.107515 | 192.168.255.177 | 192.168.255.9 | TCP | 3752 > http [ACK] Seq=1848576263 |
| Ack=633722449 Win=64252 Len=0 | | | | | |

CopyFile

| No. | Time | Source | Destination | Protocol | Info |
|--|----------------------------|-----------------|-----------------|----------|--|
| 9 | 2003-12-11 15:57:20.664483 | 192.168.255.177 | 192.168.255.9 | TCP | 3755 > http [SYN] Seq=1890751374 Ack=0 |
| Win=64512 Len=0 | | | | | |
| 10 | 2003-12-11 15:57:20.664695 | 192.168.255.9 | 192.168.255.177 | TCP | http > 3755 [SYN, ACK] Seq=673967105 |
| Ack=1890751375 Win=65535 Len=0 | | | | | |
| 11 | 2003-12-11 15:57:20.664754 | 192.168.255.177 | 192.168.255.9 | TCP | 3755 > http [ACK] Seq=1890751375 |
| Ack=673967106 Win=64512 Len=0 | | | | | |
| 12 | 2003-12-11 15:57:20.664962 | 192.168.255.177 | 192.168.255.9 | HTTP | GET |
| /chn/Dutch%20Channels/schiphol/schiphol2/schiphol.chn HTTP/1.1 | | | | | |
| 13 | 2003-12-11 15:57:20.672968 | 192.168.255.9 | 192.168.255.177 | HTTP | HTTP/1.1 200 OK |
| Continuation | | | | | |
| 14 | 2003-12-11 15:57:20.673122 | 192.168.255.9 | 192.168.255.177 | HTTP | Continuation |
| 15 | 2003-12-11 15:57:20.673162 | 192.168.255.177 | 192.168.255.9 | TCP | 3755 > http [ACK] Seq=1890751544 |
| Ack=673970026 Win=64512 Len=0 | | | | | |
| 16 | 2003-12-11 15:57:20.673759 | 192.168.255.9 | 192.168.255.177 | HTTP | Continuation |
| 17 | 2003-12-11 15:57:20.673817 | 192.168.255.177 | 192.168.255.9 | TCP | 3755 > http [ACK] Seq=1890751544 |
| Ack=673971486 Win=64512 Len=0 | | | | | |
| 18 | 2003-12-11 15:57:20.673944 | 192.168.255.9 | 192.168.255.177 | HTTP | Continuation |
| 19 | 2003-12-11 15:57:20.674073 | 192.168.255.9 | 192.168.255.177 | HTTP | Continuation |
| 20 | 2003-12-11 15:57:20.674112 | 192.168.255.177 | 192.168.255.9 | TCP | 3755 > http [ACK] Seq=1890751544 |
| Ack=673974406 Win=64512 Len=0 | | | | | |
| 21 | 2003-12-11 15:57:20.674503 | 192.168.255.9 | 192.168.255.177 | HTTP | Continuation |
| 22 | 2003-12-11 15:57:20.674529 | 192.168.255.9 | 192.168.255.177 | HTTP | Continuation |
| 23 | 2003-12-11 15:57:20.674586 | 192.168.255.177 | 192.168.255.9 | TCP | 3755 > http [ACK] Seq=1890751544 |
| Ack=673976666 Win=64512 Len=0 | | | | | |

10.5 FTP

ftp://s1/Dutch Channels/schiphol/schiphol2/schiphol.chn

Windows 2000 server SP 4

FTP Server: FileZilla Server version 8.8

Connect

| No. | Time | Source | Destination | Protocol | Info |
|--|----------------------------|-----------------|-----------------|----------|--|
| 47 | 2003-12-11 16:17:43.457389 | 192.168.255.177 | 192.168.255.1 | TCP | 3799 > ftp [SYN] Seq=2198070889 Ack=0 |
| Win=64512 Len=0 | | | | | |
| 48 | 2003-12-11 16:17:43.457600 | 192.168.255.1 | 192.168.255.177 | TCP | ftp > 3799 [SYN, ACK] Seq=959220664 |
| Ack=2198070890 Win=65535 Len=0 | | | | | |
| 49 | 2003-12-11 16:17:43.457667 | 192.168.255.177 | 192.168.255.1 | TCP | 3799 > ftp [ACK] Seq=2198070890 |
| Ack=959220665 Win=64512 Len=0 | | | | | |
| 50 | 2003-12-11 16:17:43.459153 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 220-FileZilla Server version |
| 8.8 final | | | | | |
| 51 | 2003-12-11 16:17:43.459213 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 220-written by Tim Kosse |
| (Tim.Kosse@gmx.de) | | | | | |
| 52 | 2003-12-11 16:17:43.459270 | 192.168.255.177 | 192.168.255.1 | TCP | 3799 > ftp [ACK] Seq=2198070890 |
| Ack=959220750 Win=64427 Len=0 | | | | | |
| 53 | 2003-12-11 16:17:43.459326 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 220 Please visit |
| http://sourceforge.net/projects/filezilla/ | | | | | |
| 54 | 2003-12-11 16:17:43.459701 | 192.168.255.177 | 192.168.255.1 | FTP | Request: USER anonymous |
| 55 | 2003-12-11 16:17:43.461027 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 331 Password required for |
| anonymous | | | | | |
| 56 | 2003-12-11 16:17:43.461213 | 192.168.255.177 | 192.168.255.1 | FTP | Request: PASS IEUser@ |
| 57 | 2003-12-11 16:17:43.518293 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 230 Logged on |
| 58 | 2003-12-11 16:17:43.631459 | 192.168.255.177 | 192.168.255.1 | TCP | 3799 > ftp [ACK] Seq=2198070920 |
| Ack=959220863 Win=64314 Len=0 | | | | | |

GetFileTime

| | | | | | |
|---|----------------------------|-----------------|-----------------|----------|--|
| 21 | 2003-12-10 15:14:35.569411 | 192.168.255.177 | 192.168.255.1 | FTP | Request: TYPE A |
| 22 | 2003-12-10 15:14:35.570240 | 192.168.255.177 | 192.168.255.177 | FTP | Response: 200 Type set to A |
| 23 | 2003-12-10 15:14:35.570568 | 192.168.255.177 | 192.168.255.1 | FTP | Request: PASV |
| 24 | 2003-12-10 15:14:35.572048 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 227 Entering Passive Mode |
| (192,168,255,1,18,31) | | | | | |
| 25 | 2003-12-10 15:14:35.572319 | 192.168.255.177 | 192.168.255.1 | TCP | 3213 > 4639 [SYN] Seq=2239564257 Ack=0 |
| Win=64512 Len=0 | | | | | |
| 26 | 2003-12-10 15:14:35.572504 | 192.168.255.1 | 192.168.255.177 | TCP | 4639 > 3213 [SYN, ACK] Seq=1506610277 |
| Ack=2239564258 Win=65535 Len=0 | | | | | |
| 27 | 2003-12-10 15:14:35.572561 | 192.168.255.177 | 192.168.255.1 | TCP | 3213 > 4639 [ACK] Seq=2239564258 |
| Ack=1506610278 Win=64512 Len=0 | | | | | |
| 28 | 2003-12-10 15:14:35.572704 | 192.168.255.177 | 192.168.255.1 | FTP | Request: LIST "/Dutch |
| Channels/Schiphol/Schiphol2/Schiphol.chn" | | | | | |
| 29 | 2003-12-10 15:14:35.576800 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 150 Connection accepted |
| 30 | 2003-12-10 15:14:35.576917 | 192.168.255.1 | 192.168.255.177 | FTP-DATA | FTP Data: 69 bytes |
| 31 | 2003-12-10 15:14:35.577037 | 192.168.255.1 | 192.168.255.177 | TCP | 4639 > 3213 [FIN, ACK] Seq=1506610347 |
| Ack=2239564258 Win=65535 Len=0 | | | | | |
| 32 | 2003-12-10 15:14:35.577093 | 192.168.255.177 | 192.168.255.1 | TCP | 3213 > 4639 [ACK] Seq=2239564258 |
| Ack=1506610348 Win=64443 Len=0 | | | | | |
| 33 | 2003-12-10 15:14:35.577264 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 226 Transfer OK |
| 34 | 2003-12-10 15:14:35.577295 | 192.168.255.177 | 192.168.255.1 | TCP | 3212 > ftp [ACK] Seq=2239485631 |
| Ack=1506555003 Win=64204 Len=0 | | | | | |
| 35 | 2003-12-10 15:14:35.577383 | 192.168.255.177 | 192.168.255.1 | TCP | 3213 > 4639 [FIN, ACK] Seq=2239564258 |
| Ack=1506610348 Win=64443 Len=0 | | | | | |
| 36 | 2003-12-10 15:14:35.577537 | 192.168.255.1 | 192.168.255.177 | TCP | 4639 > 3213 [ACK] Seq=1506610348 |
| Ack=2239564259 Win=65535 Len=0 | | | | | |
| 37 | 2003-12-10 15:14:35.577855 | 192.168.255.177 | 192.168.255.1 | TCP | 3212 > ftp [FIN, ACK] Seq=2239485631 |
| Ack=1506555003 Win=64204 Len=0 | | | | | |
| 38 | 2003-12-10 15:14:35.578014 | 192.168.255.1 | 192.168.255.177 | TCP | ftp > 3212 [ACK] Seq=1506555003 |
| Ack=2239485632 Win=65435 Len=0 | | | | | |

FileExist

| No. | Time | Source | Destination | Protocol | Info |
|---|----------------------------|-----------------|-----------------|----------|--|
| 1 | 2003-12-11 16:25:56.005939 | 192.168.255.177 | 192.168.255.1 | FTP | Request: TYPE A |
| 2 | 2003-12-11 16:25:56.006595 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 200 Type set to A |
| 3 | 2003-12-11 16:25:56.007013 | 192.168.255.177 | 192.168.255.1 | FTP | Request: PASV |
| 4 | 2003-12-11 16:25:56.022738 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 227 Entering Passive Mode |
| (192,168,255,1,5,19) | | | | | |
| 5 | 2003-12-11 16:25:56.023049 | 192.168.255.177 | 192.168.255.1 | TCP | 3803 > 1299 [SYN] Seq=2321004478 Ack=0 |
| Win=64512 Len=0 | | | | | |
| 6 | 2003-12-11 16:25:56.023252 | 192.168.255.1 | 192.168.255.177 | TCP | 1299 > 3803 [SYN, ACK] Seq=1074205566 |
| Ack=2321004479 Win=65535 Len=0 | | | | | |
| 7 | 2003-12-11 16:25:56.023309 | 192.168.255.177 | 192.168.255.1 | TCP | 3803 > 1299 [ACK] Seq=2321004479 |
| Ack=1074205567 Win=64512 Len=0 | | | | | |
| 8 | 2003-12-11 16:25:56.023463 | 192.168.255.177 | 192.168.255.1 | FTP | Request: LIST "/Dutch |
| Channels/schiphol/schiphol2/schiphol.chn" | | | | | |
| 9 | 2003-12-11 16:25:56.049788 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 150 Connection accepted |
| 10 | 2003-12-11 16:25:56.059366 | 192.168.255.1 | 192.168.255.177 | FTP-DATA | FTP Data: 69 bytes |
| 11 | 2003-12-11 16:25:56.059516 | 192.168.255.1 | 192.168.255.177 | TCP | 1299 > 3803 [FIN, ACK] Seq=1074205636 |
| Ack=2321004479 Win=65535 Len=0 | | | | | |
| 12 | 2003-12-11 16:25:56.059578 | 192.168.255.177 | 192.168.255.1 | TCP | 3803 > 1299 [ACK] Seq=2321004479 |
| Ack=1074205637 Win=64443 Len=0 | | | | | |
| 13 | 2003-12-11 16:25:56.059704 | 192.168.255.1 | 192.168.255.177 | FTP | Response: 226 Transfer OK |

| | | | | | | |
|--------------------------------|------------|-----------------|-----------------|-----------------|-----|---------------------------------------|
| 14 | 2003-12-11 | 16:25:56.059741 | 192.168.255.177 | 192.168.255.1 | TCP | 3801 > ftp [ACK] Seq=2319125159 |
| Ack=1072467770 Win=64096 Len=0 | | | | | | |
| 15 | 2003-12-11 | 16:25:56.059857 | 192.168.255.177 | 192.168.255.1 | TCP | 3803 > 1299 [FIN, ACK] Seq=2321004479 |
| Ack=1074205637 Win=64443 Len=0 | | | | | | |
| 16 | 2003-12-11 | 16:25:56.060062 | 192.168.255.1 | 192.168.255.177 | TCP | 1299 > 3803 [ACK] Seq=1074205637 |
| Ack=2321004480 Win=65535 Len=0 | | | | | | |

CopyFile

| No. | Time | Source | Destination | Protocol | Info |
|---|------------|-----------------|-----------------|----------|--|
| 6 | 2003-12-11 | 16:29:27.868352 | 192.168.255.177 | FTP | Request: TYPE I |
| 7 | 2003-12-11 | 16:29:27.868955 | 192.168.255.177 | FTP | Response: 200 Type set to I |
| 8 | 2003-12-11 | 16:29:27.869483 | 192.168.255.177 | FTP | Request: PASV |
| 9 | 2003-12-11 | 16:29:27.885022 | 192.168.255.177 | FTP | Response: 227 Entering Passive Mode |
| (192,168,255,1,5,88) | | | | | |
| 10 | 2003-12-11 | 16:29:27.885409 | 192.168.255.177 | TCP | 3808 > 1368 [SYN] Seq=2374027675 Ack=0 |
| Win=64512 Len=0 | | | | | |
| 11 | 2003-12-11 | 16:29:27.885604 | 192.168.255.177 | TCP | 1368 > 3808 [SYN, ACK] Seq=1123465893 |
| Ack=2374027676 Win=65535 Len=0 | | | | | |
| 12 | 2003-12-11 | 16:29:27.885666 | 192.168.255.177 | TCP | 3808 > 1368 [ACK] Seq=2374027676 |
| Ack=1123465894 Win=64512 Len=0 | | | | | |
| 13 | 2003-12-11 | 16:29:27.885837 | 192.168.255.177 | FTP | Request: SIZE /Dutch |
| Channels/schiphol/schiphol2/schiphol.chn | | | | | |
| 14 | 2003-12-11 | 16:29:27.895757 | 192.168.255.177 | FTP | Response: 213 9300 |
| 15 | 2003-12-11 | 16:29:27.896033 | 192.168.255.177 | FTP | Request: RETR /Dutch |
| Channels/schiphol/schiphol2/schiphol.chn | | | | | |
| 16 | 2003-12-11 | 16:29:27.898107 | 192.168.255.177 | FTP | Response: 150 Connection accepted |
| 17 | 2003-12-11 | 16:29:27.900076 | 192.168.255.177 | FTP-DATA | FTP Data: 1460 bytes |
| 18 | 2003-12-11 | 16:29:27.900208 | 192.168.255.177 | FTP-DATA | FTP Data: 1460 bytes |
| 19 | 2003-12-11 | 16:29:27.900259 | 192.168.255.177 | TCP | 3808 > 1368 [ACK] Seq=2374027676 |
| Ack=1123468814 Win=64512 Len=0 | | | | | |
| 20 | 2003-12-11 | 16:29:27.900848 | 192.168.255.177 | FTP-DATA | FTP Data: 1460 bytes |
| 21 | 2003-12-11 | 16:29:27.900901 | 192.168.255.177 | TCP | 3808 > 1368 [ACK] Seq=2374027676 |
| Ack=1123470274 Win=64512 Len=0 | | | | | |
| 22 | 2003-12-11 | 16:29:27.900985 | 192.168.255.177 | FTP-DATA | FTP Data: 1460 bytes |
| 23 | 2003-12-11 | 16:29:27.901161 | 192.168.255.177 | FTP-DATA | FTP Data: 1460 bytes |
| 24 | 2003-12-11 | 16:29:27.901198 | 192.168.255.177 | TCP | 3808 > 1368 [ACK] Seq=2374027676 |
| Ack=1123473194 Win=64512 Len=0 | | | | | |
| 25 | 2003-12-11 | 16:29:27.901320 | 192.168.255.177 | FTP-DATA | FTP Data: 892 bytes |
| 26 | 2003-12-11 | 16:29:27.901363 | 192.168.255.177 | TCP | 3808 > 1368 [ACK] Seq=2374027676 |
| Ack=1123474086 Win=63620 Len=0 | | | | | |
| 27 | 2003-12-11 | 16:29:27.937794 | 192.168.255.177 | FTP-DATA | FTP Data: 1108 bytes |
| 28 | 2003-12-11 | 16:29:27.937852 | 192.168.255.177 | TCP | 1368 > 3808 [FIN, ACK] Seq=1123475194 |
| Ack=2374027676 Win=65535 Len=0 | | | | | |
| 29 | 2003-12-11 | 16:29:27.937907 | 192.168.255.177 | TCP | 3808 > 1368 [ACK] Seq=2374027676 |
| Ack=1123475195 Win=62512 Len=0 | | | | | |
| 30 | 2003-12-11 | 16:29:27.937968 | 192.168.255.177 | FTP | Response: 226 Transfer OK |
| 31 | 2003-12-11 | 16:29:27.938016 | 192.168.255.177 | TCP | 3804 > ftp [ACK] Seq=2368903464 |
| Ack=1118742245 Win=63868 Len=0 | | | | | |
| 32 | 2003-12-11 | 16:29:28.067770 | 192.168.255.177 | TCP | 3808 > 1368 [ACK] Seq=2374027676 |
| Ack=1123475195 Win=64512 Len=0 | | | | | |
| 33 | 2003-12-11 | 16:29:28.068981 | 192.168.255.177 | TCP | 3808 > 1368 [FIN, ACK] Seq=2374027676 |
| Ack=1123475195 Win=64512 Len=0 | | | | | |
| 34 | 2003-12-11 | 16:29:28.069169 | 192.168.255.177 | TCP | 1368 > 3808 [ACK] Seq=1123475195 |
| Ack=2374027677 Win=65535 Len=0 | | | | | |
| 35 | 2003-12-11 | 16:29:28.148050 | 192.168.255.177 | FTP | Request: TYPE A |
| 36 | 2003-12-11 | 16:29:28.148578 | 192.168.255.177 | FTP | Response: 200 Type set to A |
| 37 | 2003-12-11 | 16:29:28.148920 | 192.168.255.177 | FTP | Request: PASV |
| 38 | 2003-12-11 | 16:29:28.164618 | 192.168.255.177 | FTP | Response: 227 Entering Passive Mode |
| (192,168,255,1,5,89) | | | | | |
| 39 | 2003-12-11 | 16:29:28.164968 | 192.168.255.177 | TCP | 3809 > 1369 [SYN] Seq=2374134527 Ack=0 |
| Win=64512 Len=0 | | | | | |
| 40 | 2003-12-11 | 16:29:28.165180 | 192.168.255.177 | TCP | 1369 > 3809 [SYN, ACK] Seq=1123567504 |
| Ack=2374134528 Win=65535 Len=0 | | | | | |
| 41 | 2003-12-11 | 16:29:28.165230 | 192.168.255.177 | TCP | 3809 > 1369 [ACK] Seq=2374134528 |
| Ack=1123567505 Win=64512 Len=0 | | | | | |
| 42 | 2003-12-11 | 16:29:28.165370 | 192.168.255.177 | FTP | Request: LIST "/Dutch |
| Channels/schiphol/schiphol2/schiphol.chn" | | | | | |
| 43 | 2003-12-11 | 16:29:28.184004 | 192.168.255.177 | FTP | Response: 150 Connection accepted |
| 44 | 2003-12-11 | 16:29:28.184117 | 192.168.255.177 | FTP-DATA | FTP Data: 69 bytes |
| 45 | 2003-12-11 | 16:29:28.184239 | 192.168.255.177 | TCP | 1369 > 3809 [FIN, ACK] Seq=1123567574 |
| Ack=2374134528 Win=65535 Len=0 | | | | | |
| 46 | 2003-12-11 | 16:29:28.184313 | 192.168.255.177 | TCP | 3809 > 1369 [ACK] Seq=2374134528 |
| Ack=1123567575 Win=64443 Len=0 | | | | | |
| 47 | 2003-12-11 | 16:29:28.184381 | 192.168.255.177 | FTP | Response: 226 Transfer OK |
| 48 | 2003-12-11 | 16:29:28.184409 | 192.168.255.177 | TCP | 3804 > ftp [ACK] Seq=2368903534 |
| Ack=1118742354 Win=63759 Len=0 | | | | | |
| 49 | 2003-12-11 | 16:29:28.184643 | 192.168.255.177 | TCP | 3809 > 1369 [FIN, ACK] Seq=2374134528 |
| Ack=1123567575 Win=64443 Len=0 | | | | | |
| 50 | 2003-12-11 | 16:29:28.184814 | 192.168.255.177 | TCP | 1369 > 3809 [ACK] Seq=1123567575 |
| Ack=2374134529 Win=65535 Len=0 | | | | | |

10.6 Conclusion:

We have added the byte count for all network packages involved and come up with the following totals:

| | <i>Update check</i> | <i>Download channel script</i> | <i>Extra per Bitmap file</i> |
|------|---------------------|--------------------------------|------------------------------|
| HTTP | 953 Bytes | 10548 Bytes | 953 Bytes |
| FTP | 2207 Bytes | 13712 Bytes | 1315 Bytes |

| | | | |
|-----|-----------|-------------|-----------|
| SMB | 894 Bytes | 58089 Bytes | 848 Bytes |
|-----|-----------|-------------|-----------|

The Column "*Update check*" lists for each protocol how many bytes are transferred to request a file time. Whenever a 9300 byte channel file has changed, the number of bytes needed to download the file and to check the timestamp of each file referred to in the channel is listed in the "*Download channel script*" and "*Extra per Bitmap File*" columns.

Note that the exact results may vary depending on:

- the web server or FTP server
- Their configuration
- The Operating System used
- The packet size configured,
- The length of the URL's used
- The size of multimedia files used
- The number of subdirectories etc.

In this test the operating system is the same for all protocols tested (W2K server) and all servers have kept their default configuration settings.

When a channel has changed, typically only textual information needs to be transferred, resulting in transfers which are typically 10 Kbytes in size, each time a channel changes (once a day?) for each client PC.

We had a hard time finding the Netpresenter update checks and downloads with our network sniffer since they were so small.

HTTP requests were extremely elegant. Less than 1Kbyte per update check!

FTP, because of the authentication needed, for polling timestamps, generates only marginally more traffic than HTTP.

An update check was limited to 2Kb per update.

SMB (Windows file sharing over TCP/IP) causes somewhat more network traffic than HTTP. But traffic was still marginal. We confirmed this by starting a simple copy operation from the command line (copy [\\<server>\<share>\<file>](#)) while a network sniffer was running.

Large differences in network traffic between SBM and HTTP may be caused by virus scanners that check a file that is being accessed via a file share before actually copying it.

Depending on the network protocol and its configuration, the Netpresenter application will need no more than 894 bytes to be transferred over a network per client per update interval. In general this will barely be measurable.

There are probably standard guidelines for reducing network traffic, like reducing server welcome strings; to not generate 8+3 filenames (SMB); Reduce number of directory levels (SMB).

11 Recommendations for Terminal Server based systems

Netpresenter also runs fine on terminal server systems like Windows 2000/2003 with Terminal Services or Citrix Metaframe.

In case of "fat client" systems (regular PCs in hybrid mode), Netpresenter is often installed locally and no special precautions have to be taken.

In case of "thin client" systems (based on for example Java, Linux or Windows CE) Netpresenter should be installed on the server. Installation on the server might differ slightly from a regular Netpresenter setup. That is what this chapter is about.

11.1 Personalize the store

Each user should get his/her personal store directory. Often the store directory can be placed on the thin client's storage (for example a RAM drive). Or use a store directory relative to the home directory. The store directory should not simply be put in the %temp% directory since the screen saver expands environment variables often different from the player (due to the design of Windows).

This affects the LocalPath key in the [Screen Saver] section of the netpres.ini file, for example:

```
[Screen Saver]
LocalPath=Z:\NpStore
```

11.2 Handle personalised windows directories

Both the Screen saver and the Desktop Player expect a configuration file (netpres.ini) in the Windows directory ("%systemroot%").

In some Terminal Server setups, users get a personalised Windows directory at for example "%userprofile%\windows" or "C:\Documents and Settings\\Windows". The Terminal Server will copy netpres.ini to the personalised Windows directory the first time a user logs in. To keep the configuration files synchronised add the following line to the login script:

```
copy "%systemroot%\netpres.ini" "%userprofile%\windows\netpres.ini"
```

Please note that users should be granted read access to the netpres.ini file in the Windows directory. Also note that a personalised Windows directory is often not in effect for the screensaver. A screensaver's windows directory is often the actual windows directory.

Alternatively the configuration file can be mapped to the registry.

First add a key named "netpres.ini" to "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\IniFileMapping". By setting default value of this key to "USR:Netpresenter\ini", references to the .ini file will be mapped to HKEY_CURRENT_USER\Software\Netpresenter\ini.

11.3 Increase slide times

The default slide time for a presentation is 5 seconds. Since each slide change causes transmission of a new screen image to the client PC you may want to increase the slide time to for example 30 seconds.

11.4 Use templates

Terminal Server optimize the size of screen updates by only sending the difference between 2 subsequent screens. By using templates (as is standard when using the Netpresenter Message Server) the differences are kept to a minimum, thus allowing the Terminal Server to optimize its network usage.

11.5 Optimize bitmap sizes

Match the size of the background images you use to the screen resolution of your thin clients. Background images that are larger needlessly decrease the Terminal Server's performance.

Also consider the use of .bmp instead of .jpg. Image files with the extension .jpg are compressed and need to be decompressed, at the cost of extra CPU time. Also memory usage tends to be less when .bmp files are used.

11.6 Avoid CPU intensive effects

Effects, like any animation, consume precious bandwidth, and are thus best avoided in Terminal Server environments.

If you do want to use effects, chose relatively simple ones. Don't use the following "Expand" effects, since these are relatively CPU intensive:

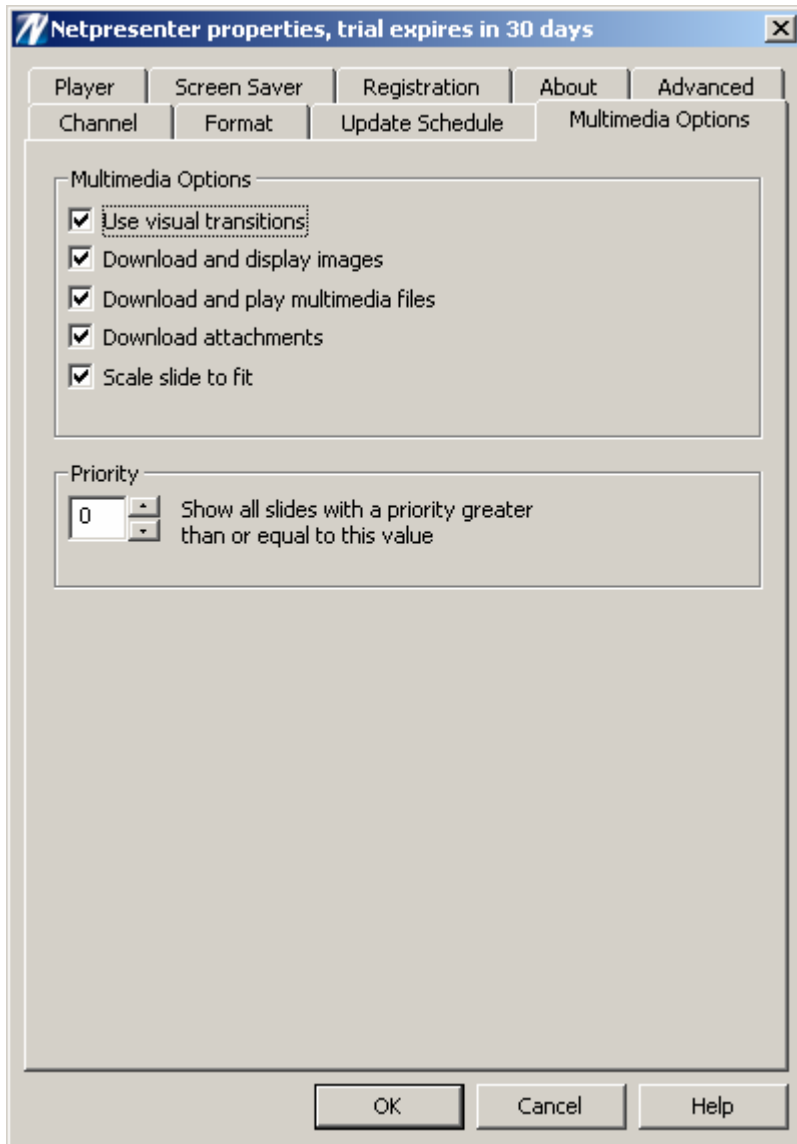
- "Expand Right "
- "Expand Left "
- "Expand Down "
- "Expand Up "
- "Expand from Top Left "
- "Expand from Top Right "
- "Expand from Bottom Left "
- "Expand from Bottom Right "
- "Expand Right and Left "
- "Expand Up and Down "
- "Expand from Center "

The following "Flow" effects, though not CPU-intensive on stand-alone systems, increase CPU load on Terminal Server systems, because of the relatively large differences in subsequent frames:

- "Flow Down "
- "Flow Up "
- "Flow Out, Up and Down "

Also avoid the "random" effects, since this might invoke expand or flow effects.

It is also possible to configure the Player to ignore effects used in presentations. Uncheck the "Use visual transitions" checkbox in "Multimedia Options" tab of the player's properties.



This has the same effect as setting bit 5 in the bitfield named PlayOptions in the [Player] section of netpres.ini, for example:

```
[Player]
PlayOptions=528
```

(Also see the section on PlayOptions on page 22).

11.7 Lowering the priority

Netpresenter does not load your system any more then any other application that changes the screen regularly (web browser, PowerPoint, etc.). To reduce CPU load even more, it is possible to lower the Screen Saver's priority by adding the following key to netpres.ini:

```
[SaverOptions]
SchedulingPriority=16384
```

This is a windows defined value (actually a bit field) representing a priority 'below normal'.

The default value ('normal priority') is represented by a value of 32. Other values are possible but not recommended.
Note that lowering the priority may affect the quality of the presentation.