GFI LANguard Network Security Scanner 7

Manual

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Introduction

Introduction to GFI LANguard Network Security Scanner

GFI LANguard Network Security Scanner (GFI LANguard N.S.S.) is a security auditing tool, which proactively reports, and supports fixing of network vulnerabilities in a timely fashion.

During a security audit, GFI LANguard N.S.S. scans your entire network, IP by IP, and alerts you about weaknesses discovered on your network(s). Using a combination of operating system functions together with the features offered by GFI LANguard N.S.S., you can proactively deal with the security issues detected. For example, security issues can be proactively detected by shutting down unnecessary ports, closing shares as well as installing service packs and hot-fixes before malicious persons can exploit them.

By default, GFI LANguard N.S.S. allows you to perform security audits on both Windows and Linux-based target computers. During an audit, the scanning engine collects various hardware and software information from the scanned targets. This includes the service pack level of each target computer, potentially vulnerable devices such as wireless access points and USB devices, installed applications, as well as open shares and open ports. The scanner also enumerates specific OS configuration settings such as Windows registry settings and password policy configuration details aiding in the identification of common security issues related to an improperly configured operating system (such as an OS running on default settings).

GFI LANguard N.S.S. is also equipped with algorithms that check for the presence of particular security software (i.e. anti-virus and anti-spyware applications) as well as ensure that they are running with the latest definition files released by their parent company. Where applicable, the scanning engine will also check that important security features such as real time scanning are enabled on anti-virus and anti-spyware applications allowing you to ensure that the security solutions deployed on your network are running effectively.

Out of the box, GFI LANguard N.S.S. also supports patch management for non-English operating systems. This means that you can automatically download missing Microsoft updates in a variety of languages and deploy them network-wide. You can also use the patch deployment engine to remotely install custom software as well as third party (non-Microsoft) patches network-wide (for instance anti-virus definition updates).

Importance of internal network security

Internal network security is very often underestimated by its administrators. In fact, in certain environments such security does not even exist, allowing one user to easily access another user's

computer using well-known exploits, trust relationships and default settings. Most of these attacks require little or no skill, putting the integrity of a network at stake.

Due to the amount of flexibility needed for normal operation, internal networks cannot afford maximum security. On the other hand, with no security at all, internal users can be a major threat to many corporate internal networks.

According to the CERT Co-ordination Centre at Carnegie Mellon University in the US:

> *"An 'insider intrusion' is any compromise of a network, system or database that is committed by someone who has (or used to have) legitimate access to the network, system or data. Such 'insiders' can include current and former employees, part-time employees, business partners, consultants and contractors." - Computer Weekly.*

A user within the company already has access to many internal resources without needing to bypass firewalls or other security mechanisms. In fact, these security measures are generally used to prevent non-trusted external sources, such as Internet users, from accessing the internal network. However, most threats come from internal users. An internal user, equipped with hacking skills, can successfully penetrate and achieve administrative network rights while ensuring that their abuse is hard to identify or even detect. The Computer Crime and Security Survey compiled in 2003 by the Computer Security Institute and the FBI discovered that approximately 65% of respondents reported at least one security incident involving an insider.

Poor network security may also allow malicious users that break into a network system to access the rest of the internal network more easily. This would enable a sophisticated attacker to read and possibly leak confidential emails and documents, delete data and damage computers - leading to loss of important information and more. Spiteful intruders may also use your network and network resources to turn around and attack (or spy!) other sites (i.e. attack relaying). In this way, all evidence of the attack will lead back to you and your company, without exposing the hacker's own identity.

Most vulnerabilities can be easily patched and attacks against known exploits can be easily stopped by administrators if they get to know about them in time. GFI LANguard N.S.S. assists administrators in the identification of these vulnerabilities!

Key features

- Finds rogue services and open TCP and UDP ports.
- Detects known CGI, DNS, FTP, Mail, RPC and other vulnerabilities.
- Detects rogue or backdoor users.
- Detects open shares and enumerates who has access to these shares including their respective permissions.
- Enumerates groups, including group members during target computer scanning.

- Enumerates USB devices attached to target computers (for example, Apple iPod, and other portable storage devices).
- Enumerates network devices and identifies if these devices are Wired, Wireless or Virtual.
- Enumerates services and their respective state.
- Enumerates remote running processes.
- Enumerates installed applications.
- Checks that the signature files of supported installed security applications (anti-virus and anti-spyware) are updated. Where applicable the security scanner will also examine the running configuration settings of particular security software (for example, BitDefender anti-virus) to verify that key features such as real-time scanning are enabled.
- Scheduling of network security scans and email reporting on completion.
- Security scanning and OS data collection for Windows operating systems.
- Security scanning and OS data collection for Linux operating systems through SSH.
- Logon to remote Linux targets through conventional logon credentials strings as well as through Public Key authentication (i.e. using SSH Public/Private Key files).
- Self-updating – Automatically downloads definition files for the latest vulnerability checks, missing patches information on program startup.
- Patch management support for Windows 2000/XP/2003 operating systems, Microsoft Office XP or later, Microsoft Exchange 2000 and Microsoft SQL Server 2000 or later.
- Patch management support for multilingual operating systems.
- Allows you to save security scan results in Microsoft Access or Microsoft SQL Server database backend and XML files.
- Reports to administrator on completion of a scheduled scan with detailed full scan results and/or detected changes identified between successive scans.
- Live host detection and Operating system identification.
- SNMP Auditing.
- Microsoft SQL Auditing.
- Script debugger that you can use to create and debug custom vulnerability checks. Checks are created using a VBscript compatible scripting language.
- Supports multithreading (i.e. allows scanning of multiple computers at the same time).
- Includes command line tools that allow you to scan and deploy software updates/patches and third party applications without bringing up the GFI LANguard N.S.S. user interface. These command line tools can be used directly from the command line prompt, through third party applications as well as through custom scripts and batch files.

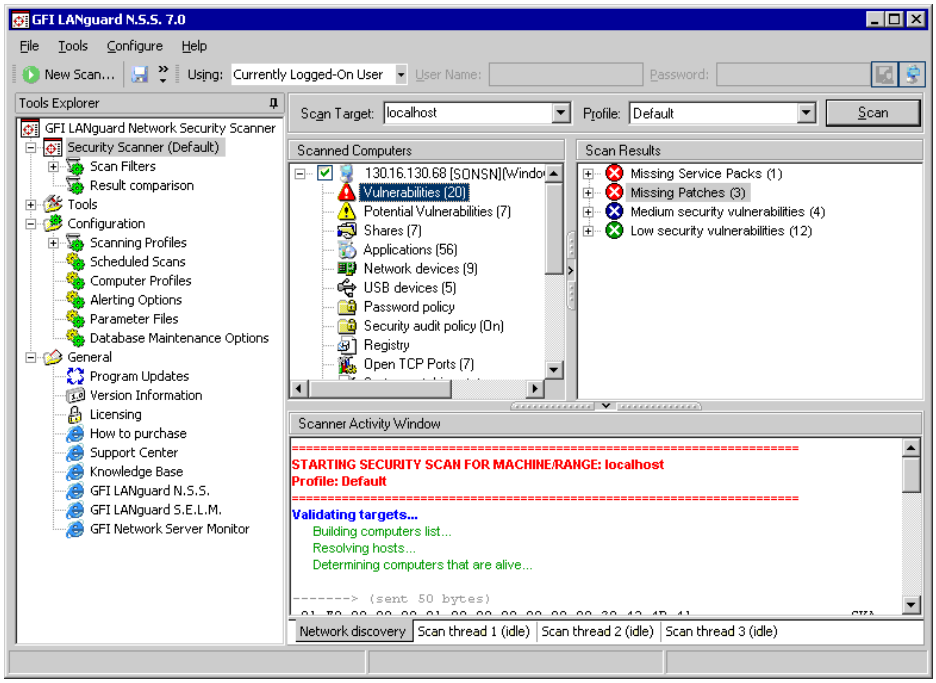
GFI LANguard N.S.S. components

GFI LANguard N.S.S. is built on an architecture that allows for high reliability and scalability catering for both medium to larger sized networks.

GFI LANguard N.S.S. consists of five main components which are:

- GFI LANguard N.S.S configuration/user interface
- GFI LANguard N.S.S. Attendant service
- GFI LANguard N.S.S. Status Monitor.
- GFI LANguard N.S.S. Patch Agent service
- GFI LANguard N.S.S. Script Debugger.

GFI LANguard N.S.S. configuration/user interface



Screenshot 1 - GFI LANguard N.S.S. configuration interface

Launch GFI LANguard N.S.S. from **Start ▸ Programs ▸ GFI LANguard Network Security Scanner 7.0 ▸ LANguard Network Security Scanner**.

Use this application to:

- Launch network security scans and patch deployment sessions.
- View saved and real time security scan results.
- Configure scan options, scan profiles and report filters.
- Use specialized network security administration tools.

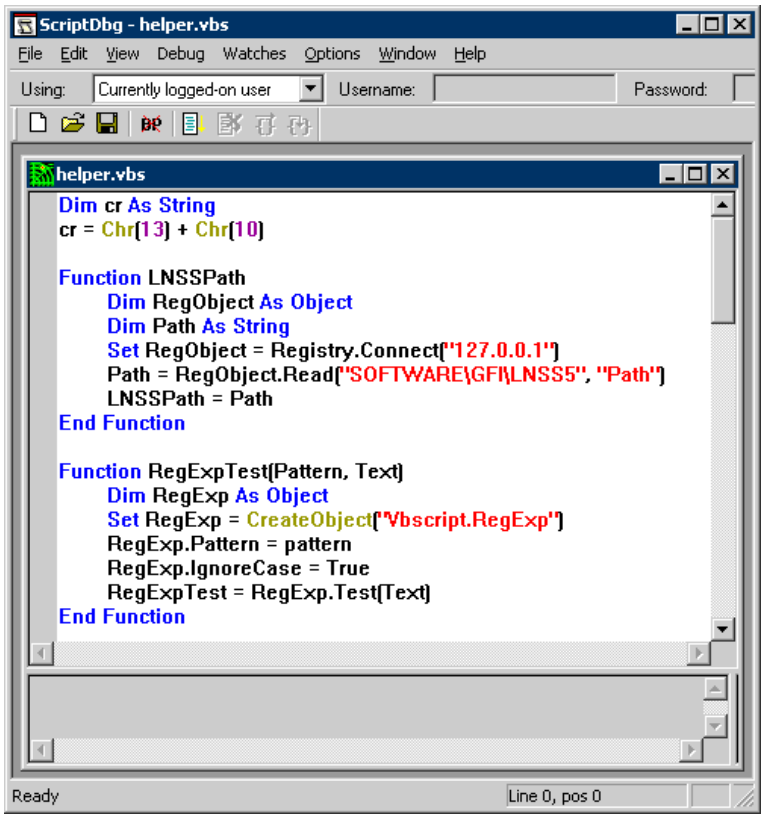
GFI LANguard N.S.S. attendant service

This is the background service which runs the scheduled operations. These include scheduled network security scans and scheduled patch deployment operations.

GFI LANguard N.S.S. patch agent service

This is the background service that handles the deployment of patches, service packs and software updates on target computers.

GFI LANguard N.S.S. Script Debugger

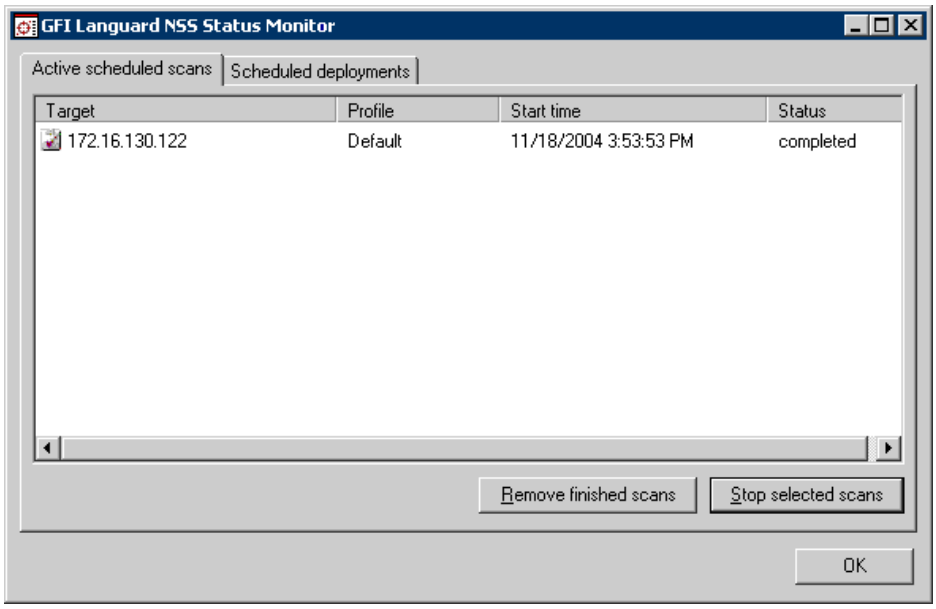


Screenshot 2 - GFI LANguard N.S.S. Script Debugger

This module allows you to write and debug custom scripts using a VBScript-compatible language. Use this module to create scripts for custom vulnerability checks. These checks can then be included in GFI LANguard N.S.S. to custom-scan network targets.

Launch the GFI LANguard N.S.S. Script Debugger from **Start ▸ Programs ▸ GFI LANguard Network Security Scanner 7.0 ▸ LNSS Script Debugger**.

GFI LANguard N.S.S. Status Monitor



Screenshot 3 - GFI LANguard N.S.S. Monitor

Use this module to monitor the status of scheduled scans and scheduled software-update deployment sessions. In addition, from this module you can also stop scheduled operations which have not yet been executed.

Launch the GFI LANguard N.S.S. Status Monitor from **Start ▸ Programs ▸ GFI LANguard Network Security Scanner 7.0 ▸ LNSS Status Monitor**.

License scheme

The GFI LANguard N.S.S. licensing scheme works on the number of computers and devices that you wish to scan. For example, the 100 IP license allows you to scan up to 100 computers or devices from a single workstation/server on your network.

For more information on GFI LANguard N.S.S. licensing visit: http://www.gfi.com/pricing/pricelist.aspx?product=LANSS.

Installing GFI LANguard Network Security Scanner

System requirements

Install GFI LANguard Network Security Scanner on a computer which meets the following requirements:

- Windows 2000 (SP4) / XP (SP2) / 2003 operating system.
- Internet Explorer 5.1 or higher.
- Client for Microsoft Networks component - (included by default in Windows 95 or higher).
  NOTE: For more information on how to install the Client for Microsoft Networks component refer to the 'Installing the Client for Microsoft Networks component on Windows 2000 or higher' section in the 'Miscellaneous' chapter.
- Secure Shell (SSH) - (included by default in every Linux OS distribution pack).

Firewall considerations

Firewalls installed on either the host or target computer(s) will interfere with the operations of GFI LANguard N.S.S.

You must either:

- Disable the firewall software on the host/target computer(s)

Or

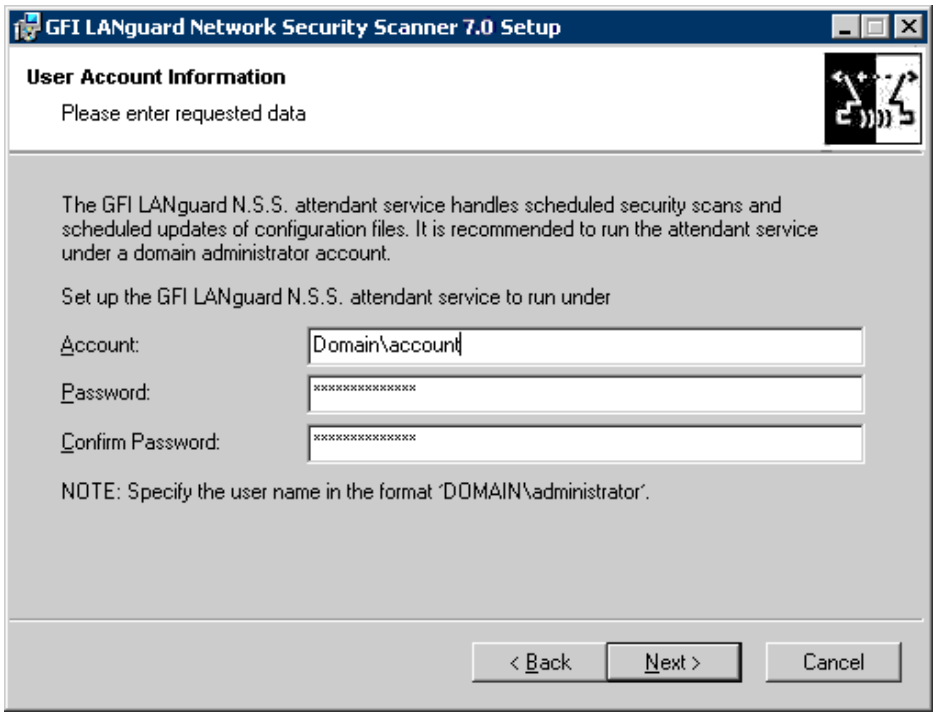
- Use the Windows Internet Connection Firewall domain policies to configure the necessary ports and services required by GFI LANguard N.S.S. to operate correctly. For more information on how to configure Active Directory policies to support scanning of/from computers running the Windows Internet connection Firewall (XP SP2 or 2003 SP1) visit: http://kbase.gfi.com/showarticle.asp?id=KBID002177.

Installation procedure

1. Launch the GFI LANguard Network Security Scanner installation wizard by double-clicking on **languardnss7.exe**. As soon as the welcome dialog is displayed, click **Next** to start the installation.

2. In the license dialog, read the licensing agreement carefully. Select the '*Accept the Licensing agreement'* option and click on **Next** to continue.

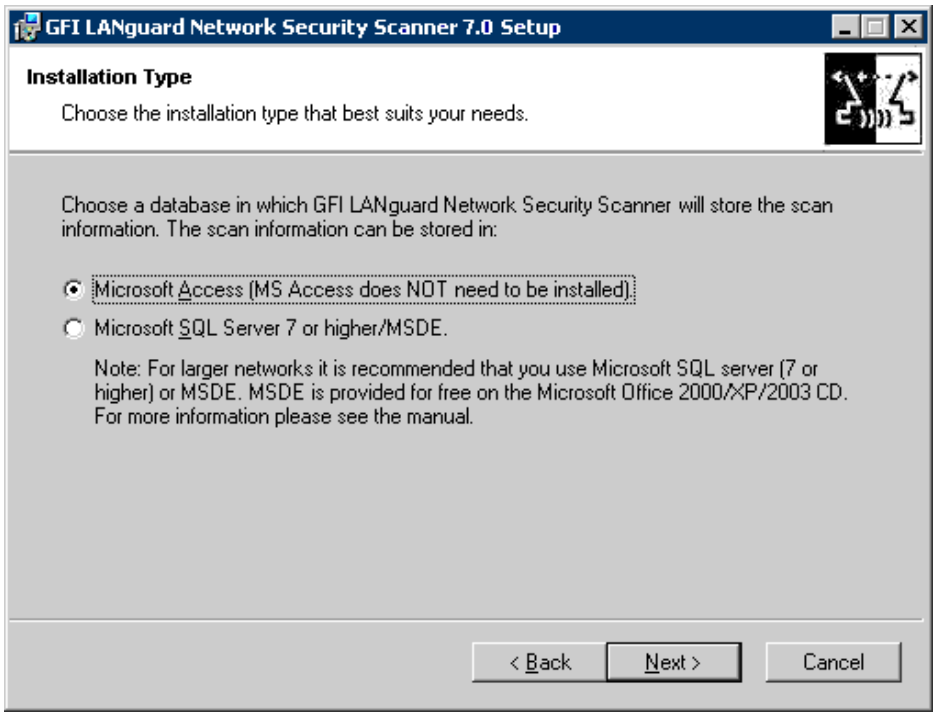
3. Specify the full username, the company name and the license key. If you are evaluating the product, leave the license key as default (i.e. 'Evaluation'). Click on **Next** to continue**.**



Screenshot 4 - Specify domain administrator credentials or use local system account

4. Specify the service account under which GFI LANguard N.S.S will be running. Click on **Next** to continue.

IMPORTANT: GFI LANguard N.S.S. **must run with administrative credentials**. It is recommended to provide Domain Administrator or Enterprise Administrator account details. This is required because GFI LANguard N.S.S. will most likely need administrative rights to access the targets computers on your network. However, it is not mandatory to provide a Domain/Enterprise Administrator account details for every target computer, since separate credentials can be provided from the configuration interface after the installation (**Configuration ▸ Computer Profiles node**).

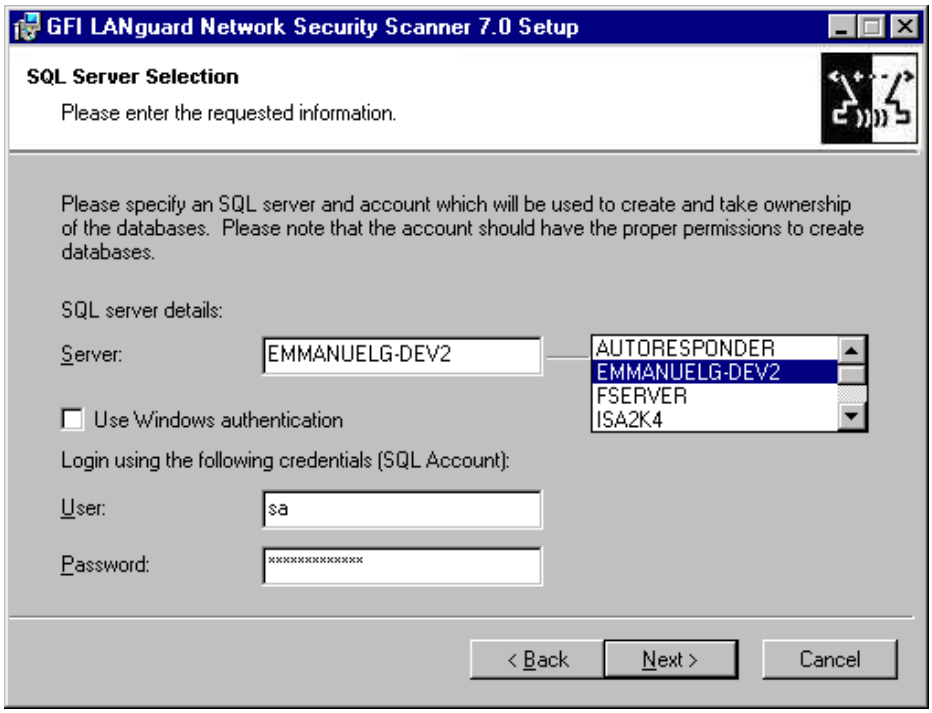


Screenshot 5 - Choose database backend

5. Specify which database backend will be used to store the scan results/information. You can choose between Microsoft Access, Microsoft SQL Server 7/2000 or MSDE. Click on **Next** to continue**.**

NOTE 1: Microsoft Access database backend usage is recommended for small networks. For medium and larger networks, usage of Microsoft SQL Server 7/2000 as a database backend is recommended.

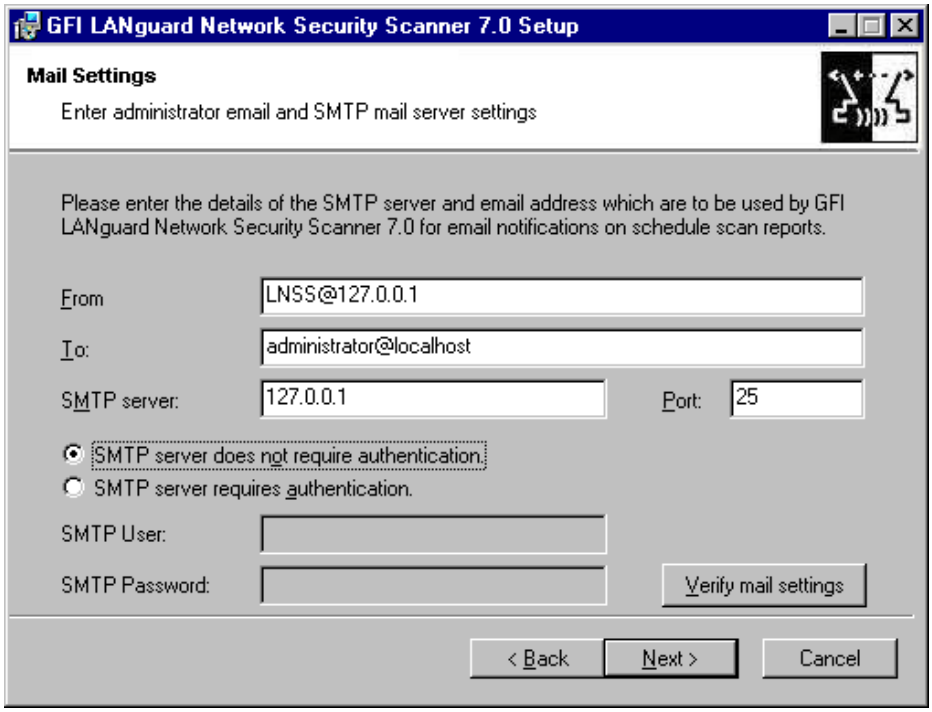
NOTE 2: MSDE can handle up to 2 GB of data while Microsoft SQL server is capable of handling larger volumes of data efficiently and without limitations.



Screenshot 6 - Specify SQL Server details

6. If Microsoft SQL Server is selected as a database backend, specify the logon credentials that will be used when logging on to the database. You can use SQL Server user accounts details or Windows NT authentication details to access the database. Click on **Next** to continue.

NOTE: When using Windows NT authentication, ensure that the GFI LANguard N.S.S. services are running under user accounts which have the necessary administrative access rights and privileges to log on to and manage the SQL Server databases.



Screenshot 7 - Specify alerting email address and mail server details

7. Specify the SMTP/mail server details (Hostname/IP and Port) as well as the email address where generic administrative notifications will be sent. Click on **Next** to continue.

8. Specify the installation path for GFI LANguard N.S.S. and click **Next**. The installation will need approximately 40 MB of free disk space.

9. Click **Finish** to finalize the installation.

Entering your license key after installation

If you have purchased GFI LANguard N.S.S., enter your License key in the **General ▸ Licensing** node (no re-installation/re-configuration required)

NOTE 1: By default, GFI LANguard N.S.S. has an unrestricted fully functional evaluation period of 10 days. If the data you provided in the download form is correct, you will receive by email a license key which enables you to evaluate GFI LANguard N.S.S. for 30 days.

NOTE 2: GFI LANguard N.S.S. licensing is based on the:

- Number of computers/IPs that will be running GFI LANguard Network Security Scanner.
- Number of computers/IPs that you wish to scan.

For example, if you wish to install GFI LANguard N.S.S. on one server, and you will be scanning a network of 20 target computers, then you have to purchase a 25 IP license.

NOTE 3: Entering the License Key should not be confused with the process of registering your company details on our website. This is important since it allows us to give you support and notify you of important product news. You may register and obtain your GFI customer account from: http://www.gfi.com/pages/regfrm.htm

NOTE 4: To find out how to buy GFI LANguard N.S.S., follow the **General ▸ How to purchase** node.

Getting started: Performing an audit

Introduction

An audit of network resources enables the administrator to identify and assess possible risks within a network. Doing this manually involves a tiresome series of repetitive and time consuming tasks that must be accurately performed on each and every network computer. GFI LANguard N.S.S. automates the security auditing process and remotely scans computers for known vulnerabilities, common misconfiguration and other potential security issues in a relatively short time. The information collected during the scanning process is then used to assist the tracking and mitigation of security issues that have been identified. Typical information enumerated during the security scanning process includes:

- The service packs level of the computer
- Missing security patches
- Wireless access points
- USB devices
- Open shares
- Open ports
- Services/applications active on the target computer(s)
- Key registry entries
- Weak passwords
- Users and groups.

To perform a security audit the scanning engine requires you to specify three primary parameters:

1. Target computer(s) to scan for security issues.

2. Scanning Profile to use (specifies vulnerability checks/tests to be done against the specified targets).

3. Authentication details to be used to log on to the target computer(s).

About scanning profiles (list of vulnerability checks/tests)

Before starting a scan you must specify which vulnerability checks/tests to be run against the specified target(s).

This is required because GFI LANguard N.S.S. contains a multitude of vulnerability checks that can be run on your network infrastructure. Although much of these vulnerability checks can be run against all network computers, there are some ‘specialized’ checks which are role specific and thus their results depend both on the services that are running on that particular target computer(s) as well as the desired

type of security scan you need to perform. For example, CGI vulnerability checks need to be run only when scanning Web servers.

In GFI LANguard N.S.S. the vulnerability checks that will be run against a target in a security scan are specified in templates called 'Scanning Profiles'. These scanning profiles hold the 'scanning instructions/parameters' that the scanning engine will follow during a security audit i.e. the vulnerability checks that must be executed against the targets as well as the information that is to be retrieved from these targets. For more information on scanning profiles, refer to the 'Scanning Profiles' chapter in this manual.

For a well balanced security scan use the 'Default Scanning Profile' option.

Logon credentials to access the target computer(s)

During a security scan, for some types of information retrieval/vulnerability tests, GFI LANguard N.S.S. needs to remotely log on to each target computer. By default GFI LANguard N.S.S. uses the security context of the user under which it is running. You can also specify alternative logon credentials to run a scan under a different security context from the currently logged on user.

While the above would fit most network scanning needs you may meet situations when you log on to some target computers with a particular administrative account and onto some other target computers with a totally different administrative account.

To cater for this situation GFI LANguard N.S.S. allows you to configure computer profiles for different targets which are located in your network. Use computer profiles to specify the logon credentials to use when logging in to a target computer even when a security scan is being run under a different security context. For example, you can use computer profiles to make sure that the computer FILESERVER is always scanned with the account COMPANY\fileserveradmin and that the computer WEBSERVER is always scanned with the account COMPANY\webserveradmin.

For more information on computer profiles refer to the 'Computer Profiles' section in the 'Configuring GFI LANguard N.S.S.' chapter in this manual.

Important considerations

1. Please note that if your company runs any type of Intrusion Detection Software (IDS) during scanning, **GFI LANguard N.S.S. will set off a multitude of IDS warnings and intrusion alerts in these applications.** If you are not responsible for the IDS system, make sure to inform the person in charge about any planned security scans.

2. Along with the IDS software warnings, be aware that a lot of the scans will show up in log files across the board. UNIX logs, web servers, etc. will all show the intrusion attempts made by the computer running GFI LANguard Network Security Scanner. If you are not the sole administrator at your site make sure that the other administrators are aware of the scans you are about to run.

Performing a security scan using default settings

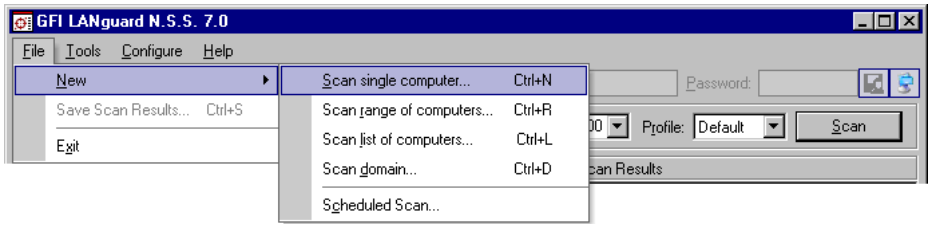
Out of the box, GFI LANguard N.S.S. includes default configuration settings which allow you to run an immediate (basic) scan soon after the installation is complete.

For a default scan you must only specify which target computer(s) you wish to audit. By default, GFI LANguard N.S.S. will:

- Authenticate to the targets using the currently logged on user account credentials (i.e. the credentials under which GFI LANguard N.S.S. is running).
- Use a generic list of default vulnerability checks which are preconfigured in the 'Default' scanning profile. This is one of the default scanning profiles which ships with GFI LANguard N.S.S.

To perform you first scan, please do as follows:

1. Click on **File ▸ New**.

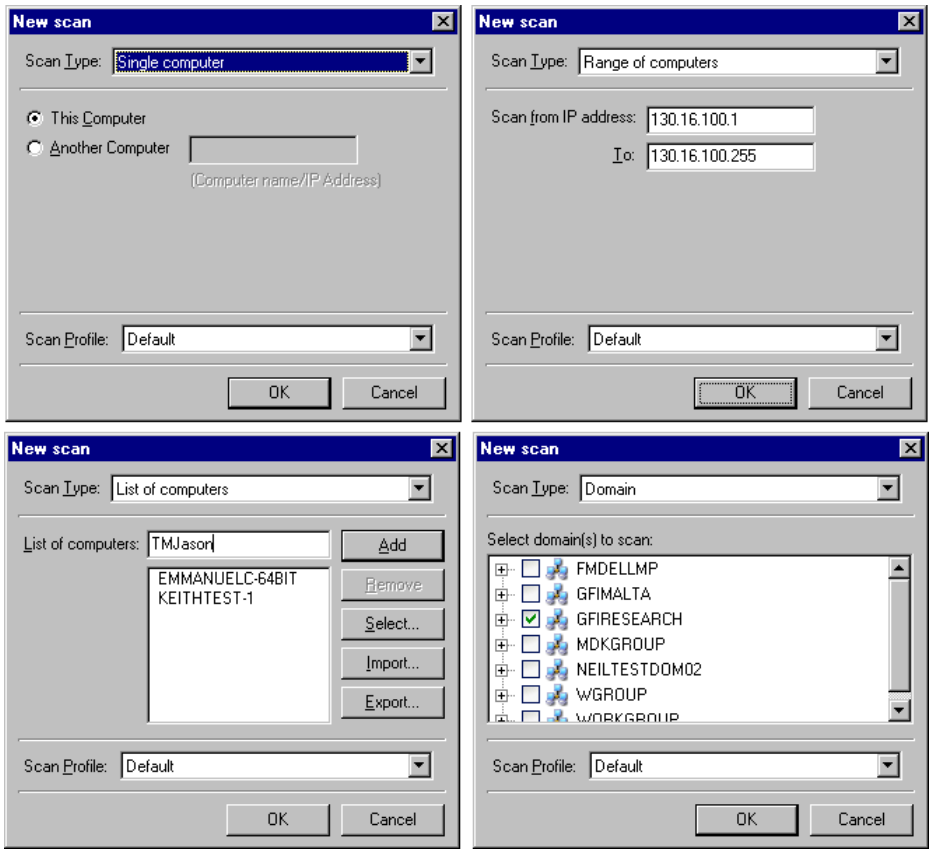


Screenshot 8 - Selecting the type of security scan

2. Select the type of scan that you wish to perform by selecting one of the following options:

- **Scan single computer…** – Select this option to scan a single computer.
- **Scan range of Computers…** – Select this option to scan a specific range of computers.
- **Scan list of Computers…** – Select this option to scan a custom list of computers.
- **Scan a Domain…** – Select this option to scan an entire Windows domain.

NOTE: At this point in time, you may ignore the **Scheduled Scan** option. This option is used to configure vulnerability scans which will be automatically executed on a specific day/time. Scheduled scans are described in more detail in the 'Configuring GFI LANguard N.S.S.' chapter in this manual.



Screenshot 9 - New Scan options dialogs.

3. Specify the requested target details (i.e. host name, IP, range of IPs or domain name).

4. Click on the **OK** button to start your default scan.

About the scanning process

GFI LANguard Network Security Scanner will start the scanning process by first identifying the targets which are available for scanning (i.e. target computers which are switched on and reachable over the network). This is done by automatically sending requests to the specified target computers using NETBIOS queries, ICMP ping and SNMP queries.

If a target computer does not respond to these queries, GFI LANguard N.S.S. will assume that the device is currently turned off or that it does not exist on the specified IP address. By default, GFI LANguard N.S.S. will NOT scan target computers which fail to reply to scanning requests.

After that the connection to a target computer is established, the scanning engine will execute the specified or default set of vulnerability checks. During a default scan the scanning engine will automatically execute a preconfigured and generic list of vulnerability checks which will test multiple areas of your network for specific weaknesses. Further on you will learn how to run checks that are more specific by selecting, customizing or creating different scanning profiles.

Performing a scan using different (default) scanning profiles

Apart from the default scanning profile, GFI LANguard N.S.S. ships with an extensive list of different scanning profiles each of which is preconfigured to perform specific or more specialized vulnerability checks. The scope of having different scanning profiles is to minimize the configuration changes required prior to every scan by using already configured vulnerability scanning templates.

In this vulnerability scan, you will specify two primary parameters:

- Targets that you wish to scan.
- The scanning profile (i.e. the vulnerability checks/tests) that will be run against your targets.

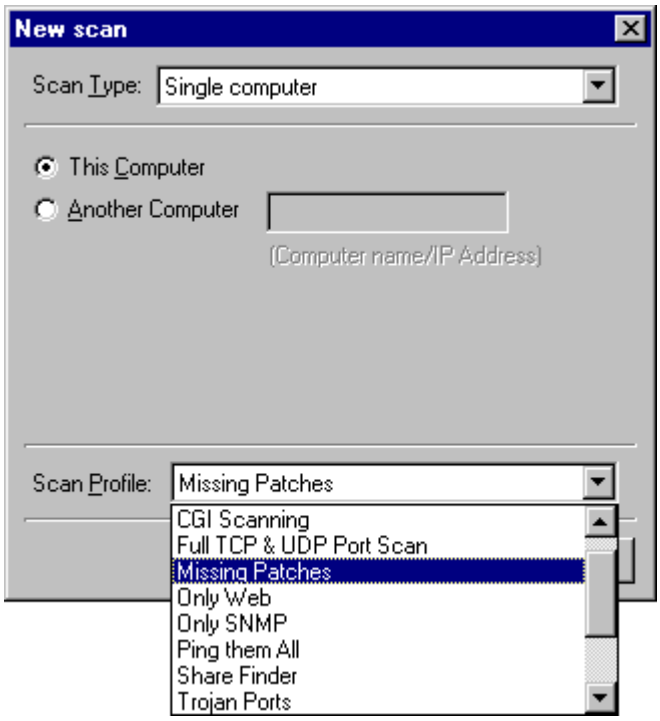
By default, GFI LANguard N.S.S. will again authenticate to the targets using the currently logged on user account credentials (i.e. the credentials under which GFI LANguard N.S.S. is running).

To run a network security audit using a different scanning profile:

1. Click on **File ▸ New**.

2. Select the type of scan that you wish to perform (for example, Scan single computer).

3. Specify the requested target details (i.e. host name, IP, range of IPs or domain name).



Screenshot 10 - New Scan dialog: Selecting a different scanning profile

4. From the 'Scan Profile' drop down at the bottom of the dialog, select the scanning profile that will be used for this network security scan.

For example, select *'Missing Patches'* to perform a network scan that checks and enumerates missing Microsoft software patches as well as the targets which are missing these patches.

5. Click on the **OK** button to start your scan.

Performing a scan using alternative target logon credentials

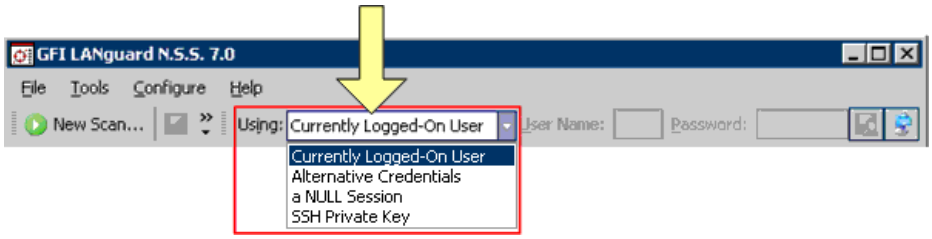
When performing a security scan GFI LANguard N.S.S. must authenticate to the target computer(s). This is required so that the scanning engine is allowed permissions to run the configured vulnerability checks against the target and to retrieve the system information required.

GFI LANguard N.S.S. authenticates to targets by 'physically' logging on to the computer(s) using the logon credentials of an account with administrative rights. This does not necessarily need to be a Domain Administrator or Enterprise Administrator account; however this user account must have administrative privileges on the target computer(s).

Different systems often require different authentication methods. For example Linux systems often request a private key file instead of the conventional password string. GFI LANguard N.S.S. supports both methods.

For more information about authentication methods refer to the 'Computer Profiles' section in the 'Configuring GFI LANguard N.S.S.' chapter in this manual.

To run a network security audit using specific logon credentials:



Screenshot 11 - GFI LANguard N.S.S. new scan toolbar: Authentication methods drop down list

1. From the credentials drop down list in the GFI LANguard N.S.S. scan toolbar, specify the authentication method to be used in this security audit by selecting one of the following options:

- *'Currently Logged-On User'* – Select this option to authenticate to target computers using Windows NT account credentials (i.e. using the account under which GFI LANguard N.S.S. is running).
- *'Null Session'* – Select this option to try and connect to target computers without authentication. In this way, you can identify what information can be accessed by non-authenticated (internal/external) users.
- *'Alternative credentials'* - Select this option to authenticate to target computers using specific credentials. Specify these credentials in the 'Username' and 'Password' fields provided next to this drop down list.
- *'SSH Private Key'* – Select this option to authenticate to Linux based target computers using a username and a private key file instead of a password string (i.e. through Public Key authentication).

  NOTE: For more information about Public Key authentication, refer to the 'About SSH Private Key file authentication' section in the 'Configuring GFI LANguard N.S.S.' chapter in this manual.

2. Click on **File ▸ New.**

3. Select the type of scan that you wish to perform (for example, Scan single computer).

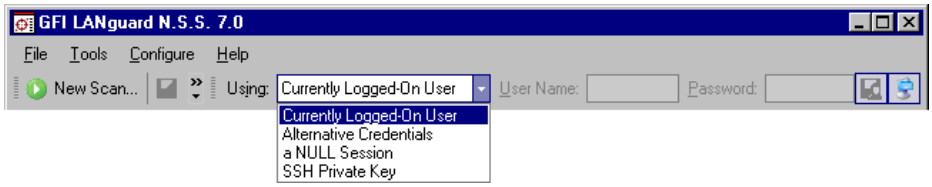
4. Specify the requested target details (i.e. host name, IP, range of IPs or domain name).

5. From the 'Scan Profile' drop down at the bottom of the dialog, select the scanning profile that will be used for this network security scan.

6. Click on the **OK** button to start your scan.

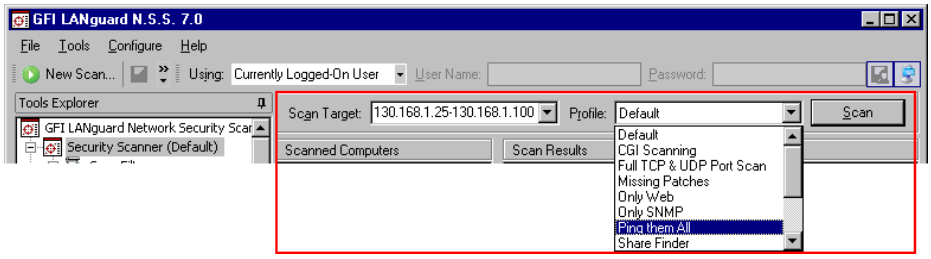
Starting security scans directly from the toolbar

To run a network security audit directly from the toolbar:



Screenshot 12 - GFI LANguard N.S.S. new scan toolbar

1. From the credentials drop down list in the GFI LANguard N.S.S. toolbar, select the authentication method to be used and if required specify the respective credentials in the adjacent fields.



Screenshot 13 - GFI LANguard N.S.S. target details toolbar

2. In 'Scan Target' drop down below, specify the targets that will be scanned (for example, TMJason,130.12.1.20-130.12.1.30,etc.).

3. From the 'Profile' drop down select the scanning profile that will be used for this network security scan.

4. Click on the **Scan** button to start your network vulnerability scan.

Getting started: Analyzing the security scan results

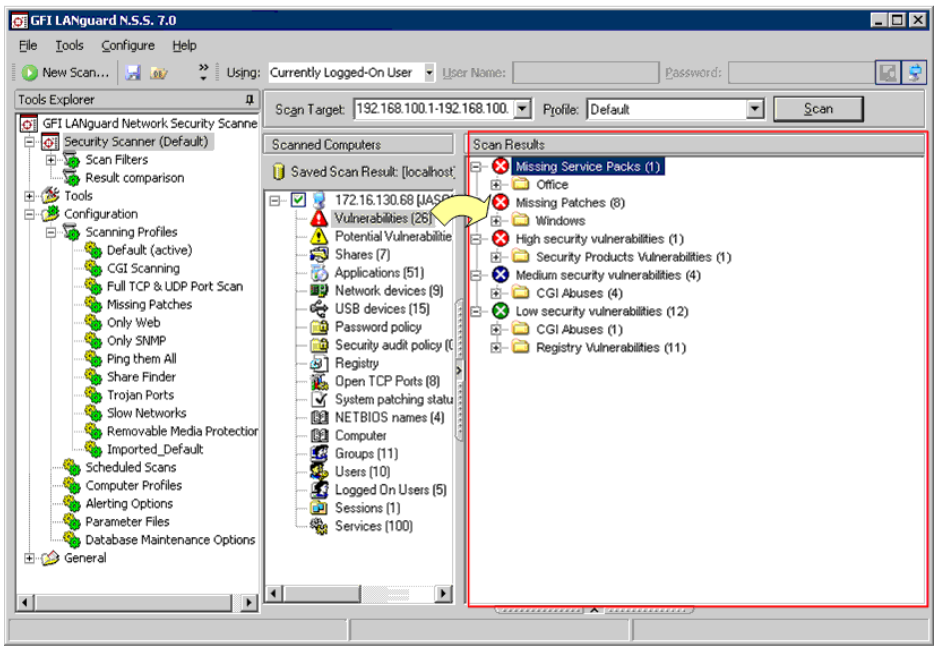
Introduction

After a security scan completes, GFI LANguard N.S.S. generates and displays the scan results in a dedicated window inside the configuration interface.

Scan results are organized by type into different categories. The amount of result categories and the type of information collected during a security scan is entirely dependent on the type of checks that have been run against the targets as well as on the parameters that have been configured in the scanning profile that was used in the audit. Hence, you will certainly obtain different scan result categories for every different scanning profile that you use to audit your network. For more information on scanning profiles refer to the 'Scanning Profiles' section further on in this manual.

You can also run filters on your scan results and display only specific scan result details. This is achieved by applying 'Scan Filters' to this information. For more information on scan filters refer to the 'Filtering scan results' chapter in this manual.

Analyzing the scan results



Screenshot 14 - GFI LANguard N.S.S. configuration interface: Analyzing the scan results

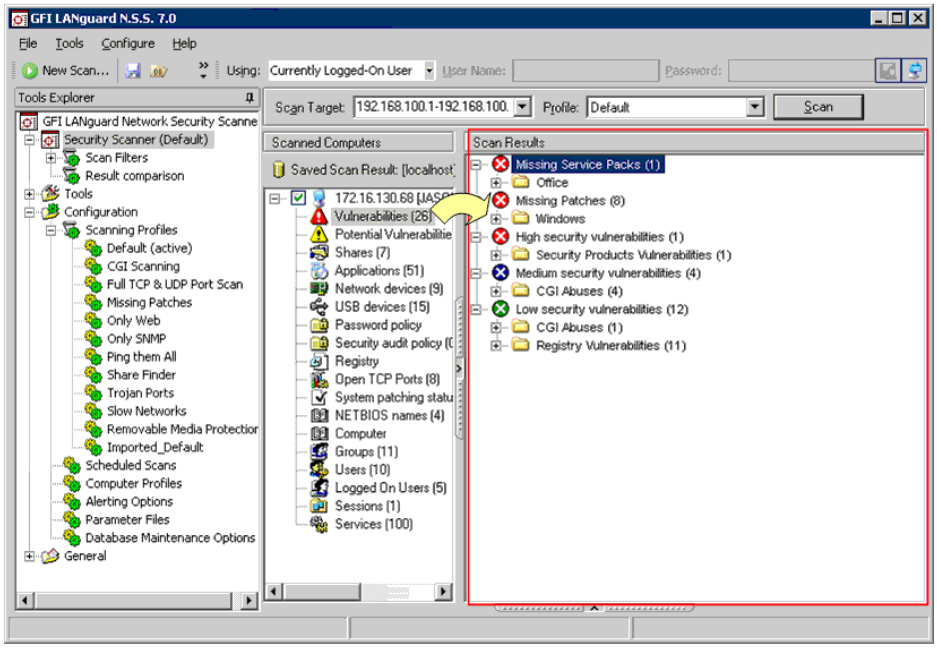
Use the information presented in the 'Scanned computers' section (middle pane) to navigate the results of the scanned computers. Security scan results are organized in a number of category sub-nodes. These can be easily used to investigate and identify security issues in the scanned targets.

Scan results are organized in the following categories:

- **Vulnerabilities**
- **Potential vulnerabilities**
- **Shares**
- **Applications**
- **Network devices**
- **USB devices**
- **Password policy**
- **Security audit policy**
- **Registry**
- **Open TCP ports**
- **System patching status**
- **NETBIOS names**
- **Computer**
- **Groups**
- **Users**
- **Logged on users**
- **Sessions**
- **Services**
- **Processes**
- **Remote time of day (TOD)**
- **Local drives.**

To view the scan results data retrieved during a security scan, click on the category of interest. The information is shown in the 'Scan Results' (right) pane.

Vulnerabilities



Screenshot 15 - The Vulnerabilities node

Click on the **Vulnerabilities** sub-node to view the security vulnerabilities identified on the target computer. Detected vulnerabilities are grouped by type and severity into five main categories:

- **Missing service packs**
- **Missing patches**
- **High security vulnerabilities**
- **Medium security vulnerabilities**
- **Low security vulnerabilities.**

Vulnerabilities ▸ Missing service packs

A Service Pack (SP) is a software program that corrects a set of known bugs or adds new features to operating systems and applications.

GFI LANguard N.S.S. checks for missing Microsoft software updates by comparing the version of the service packs currently installed on the scanned target(s) with the ones made currently available by the manufacturer.

Screenshot 16 - Missing Service Packs results tree

NOTE: GFI LANguard N.S.S. is capable of checking for missing software updates and service packs on various Microsoft products. For a complete list of supported products go to http://kbase.gfi.com/showarticle.asp?id=KBID002573.

Details shown in the results tree of this category include the:

- *'Product name'* and *'Service Pack Number'.*
- *'URL:'* - The URL link to a Knowledge Base article or other support documentation related to the detected missing service pack.
- *'Release date:'* - The date when the reported service pack was released.

To access more detailed information on a missing service pack, right-click on the particular service pack and select **More details …**.

Screenshot 17 - Missing Service pack: Bulletin info dialog

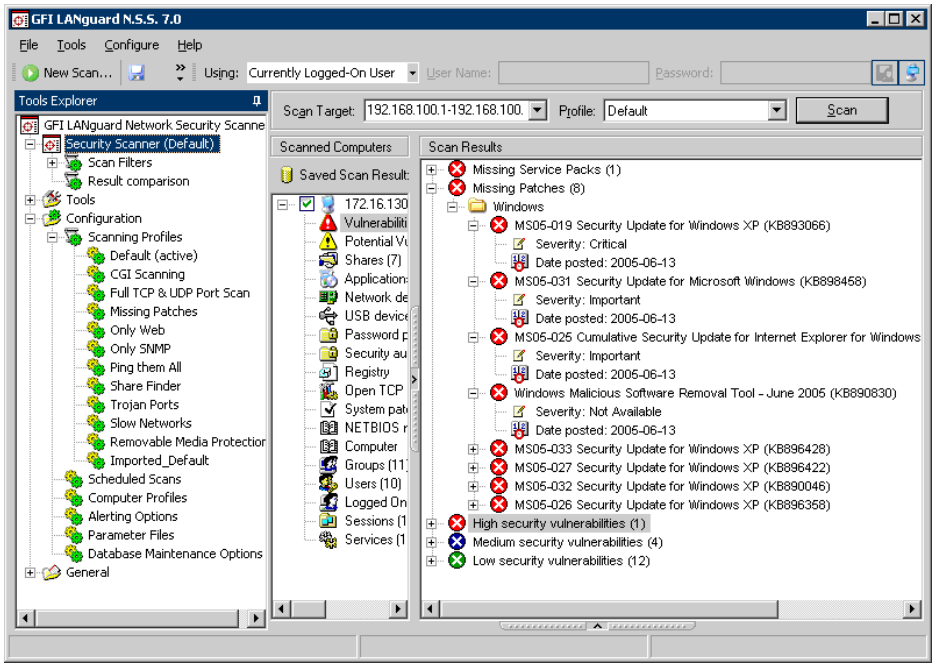
This will bring up the 'Bulletin Info' dialog of the respective service pack. The information shown in this bulletin includes:

- The QNumber. This is a unique ID number which is assigned by Microsoft to each software update for identification purposes.
- The release date of the bulletin/service pack.
- A long description of the service pack and its contents.
- The list of OS/Application(s) to which the service pack applies.
- The URL link to more information about the respective service pack.
- The name of the service pack file and the relative file size.
- The URL from where you can manually download this service pack.

Vulnerabilities ▸ Missing patches

A patch is an update which is released by a software company to address a technical/security issue. It is very common for attackers to exploit these known vulnerabilities in order to gain access to a network. Failure to patch target systems make you vulnerable to an attack resulting in either loss of business time and/or data.

GFI LANguard N.S.S. scans target computers to ensure that all relevant security updates released by Microsoft are installed.



Screenshot 18 - Missing patches detected during target scanning

Missing patches discovered during target scanning are listed and grouped under the 'Missing Patches' category.

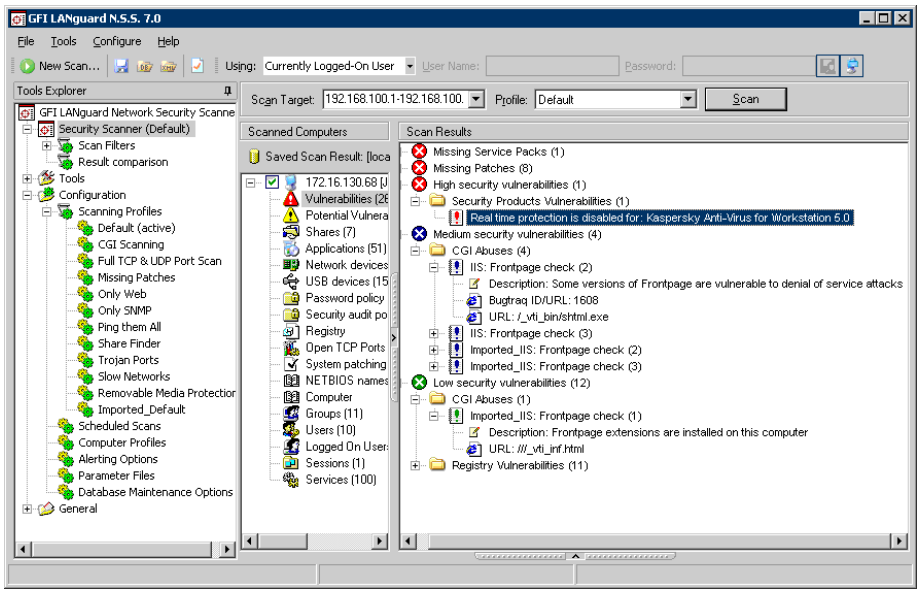
Details shown in results tree of this category include the:

- *'Patch ID'* and *'Product name'*.
- *'Bugtraq ID/URL:'* – The ID and URL of the respective Microsoft Knowledge Base article.
- *'Severity:'* - The effect that the patch has on the security level of a network device.
- *'Date Posted:'* - The release date of the missing patch.

To access more detailed information, right-click on a particular patch and select **More details…**.This will bring up the 'Bulletin Info' dialog containing addition details on the respective software patch.

NOTE: GFI LANguard N.S.S. is capable of checking for missing software updates and service packs on various Microsoft products. For a complete list of supported products go to http://kbase.gfi.com/showarticle.asp?id=KBID002573.

Vulnerabilities ▸ High, medium, low security vulnerabilities



Screenshot 19 – High, medium, low security vulnerabilities

The 'High', 'Medium' and 'Low security vulnerabilities' sub-nodes contain information on weaknesses discovered while probing a target device. These vulnerabilities are organized into 8 groups:

- **CGI abuses.**
- **FTP vulnerabilities.**
- **DNS vulnerabilities.**
- **Mail vulnerabilities.**
- **RPC vulnerabilities.**
- **Service vulnerabilities.**
- **Registry vulnerabilities.**
- **Misc/Linux/UNIX vulnerabilities**.

The content of each group is described below:

- **CGI abuses**

  This group contains details of the security vulnerabilities (such as misconfiguration issues) discovered on scanned web servers. Supported web servers include Apache, Netscape, and Microsoft I.I.S. The information listed in this section includes:

  - *'Vulnerability check name'* (for example, Imported_IIS: FrontPage Check)
  - *'Description:'* - A short description of the respective vulnerability.
  - *'Bugtraq ID/URL:'* – The ID of the relevant Microsoft Knowledge Base article(s) and the URL to more detailed information on the vulnerability.

- **FTP, DNS, Mail, RPC and Misc/Linux/UNIX vulnerabilities**

  These groups include details of the security weaknesses discovered during the scanning of particular network targets such as FTP servers, DNS servers, and SMTP/POP3/IMAP mail servers. The information shown in these sections includes links to Microsoft Knowledge Base articles or other support documentation related to the service pack.

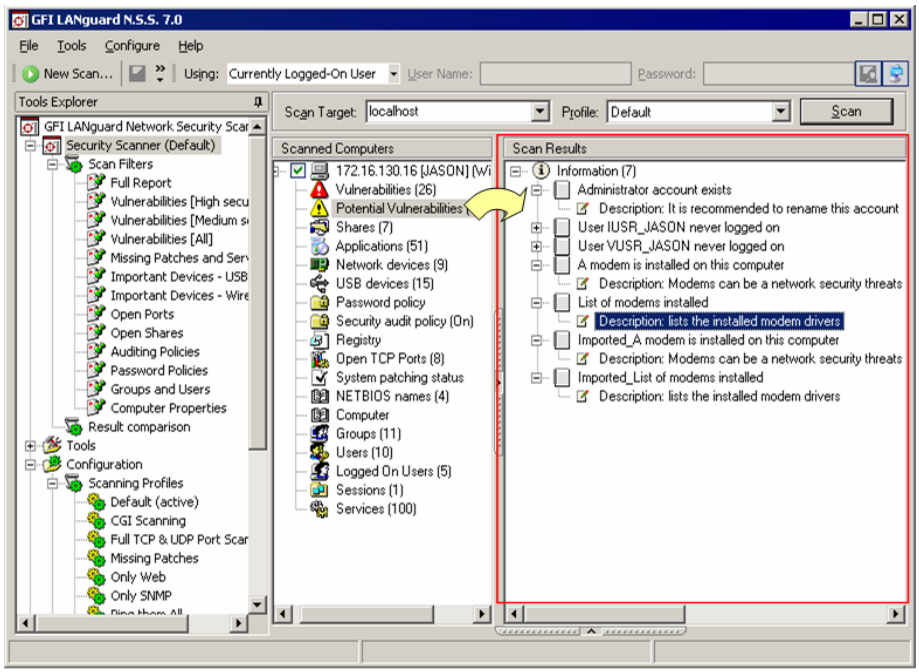
- **Service vulnerabilities**

  This group includes details of security vulnerabilities associated to services which are running on the scanned network device(s). Other details enumerated in this section include unused accounts which are still active and accessible on the scanned target computers.

- **Registry vulnerabilities**

  This group includes details of the vulnerabilities discovered in the registry settings of a scanned network device. The details shown in this category include links to support documentation as well as a short description of the respective vulnerability.

Potential vulnerabilities



Screenshot 20 - Potential vulnerabilities node

Click on the **Potential vulnerabilities** sub-node to view scan result items which were classified as possible network weaknesses. These scan result items, **although not classified as vulnerabilities, require your meticulous attention since they can be exploited** by malicious users during an attack.

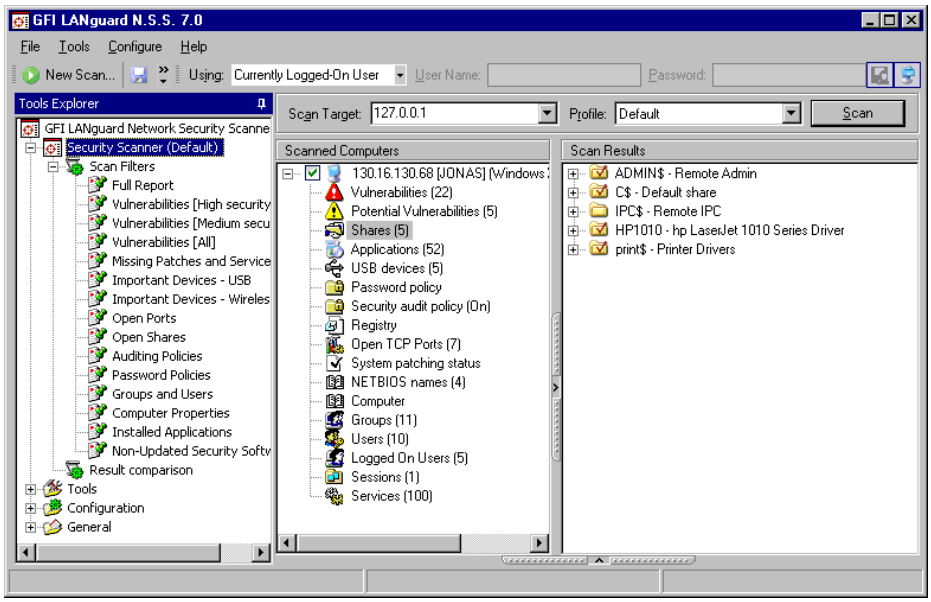
For example, during a security scan GFI LANguard N.S.S. will enumerate all of the modems which are installed and configured on the target computer. If these modems are not used or connected to a

telephone line, they are of no threat to your network (i.e. no vulnerability). On the other hand, if the modems are used and connected they can be used by your network users to gain unauthorized and unmonitored access to the Internet.

This would further allow them to both bypass your firewall and any other Internet security settings implemented (for example, virus scanning, site rating and content blocking) as well as generate high telephone bills for the company. In addition to the above, hackers might detect such connections and exploit them to gain uncontrolled access to your network system through this unmonitored route. As a result, GFI LANguard N.S.S. considers installed modems as potential threats and enumerates them in a dedicated category (i.e. the 'Potential Vulnerability' sub-node) for your attention and analysis.

Open shares

Click on the **Shares** sub-node to view all shares on a target computer.



Screenshot 21 - Shares node

In the wild, there are various worms and viruses (for example, Klez, Bugbear, Elkern and Lovgate) which spread out using open shares detected on the computers of a network.

GFI LANguard N.S.S. enumerates the properties of all shares discovered on your network. Use this data to ensure that:

1. No user is sharing whole drives with other users.

2. Anonymous/unauthenticated access to shares is not allowed and that appropriate access permissions are set up.

3. Startup folders or similar system files are not shared as these could allow less privileged users to execute code on target computers.

4. No user has unnecessary or unused shares.

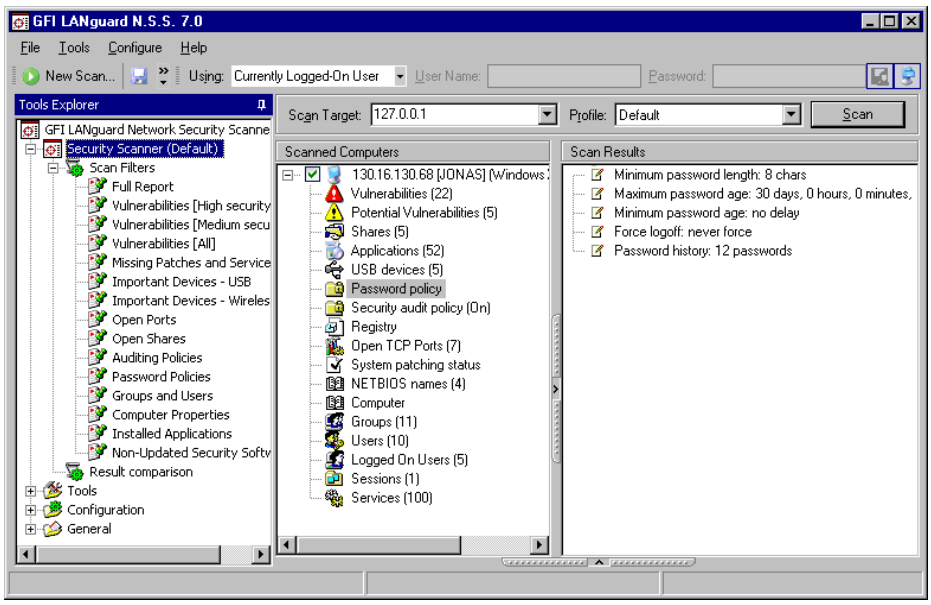
For every open share detected the following information is retrieved from the target computer:

- Share name
- Directory which is being shared on the target computer

- Share permissions and access rights
- NTFS permissions and access rights.

NOTE: Every Windows computer has administrative shares (C$, D$, E$ etc.) which GFI LANguard N.S.S. will by default enumerate during target computer scanning. As these can become irrelevant to your security audit you can configure GFI LANguard N.S.S. not to report such administrative shares. For more information on how to achieve this refer to the 'Customizing OS Data Retrieval parameters' section in the 'Scanning Profiles' chapter in this manual.

Password policy settings



Screenshot 22 - Password policy node

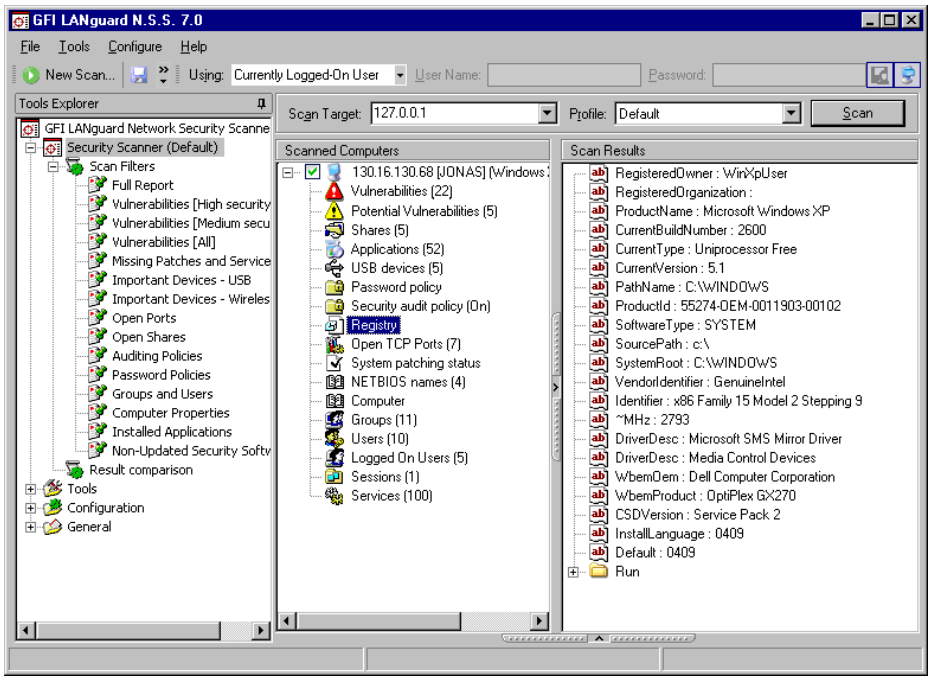
Click on the **Password Policy** sub-node to view the password policy settings of the scanned target computer(s).

Windows 2000/XP/2003 security policies provide a set of rules that can be configured for all user accounts to protect against brute force password guessing attacks. Such policies include account lockout control policies as well as password strength enforcement policies. These are essential to the enforcement of a secure network as they make it very difficult for an attacker to locate a weak link in your user base. Typical vulnerabilities in an IT infrastructure include weak passwords which are made up of few characters for example, blank or default passwords or password which are identical to the respective username.

Use the password policy settings which GFI LANguard N.S.S. retrieves from scanned target computers to identify configuration vulnerabilities on your network.

Registry settings

Click on the **Registry** sub-node to view important registry key values configured on your target computer.



Screenshot 23 - Registry node

By examining the values in the **Run** node, you can check which programs are configured to be automatically launched at startup.

This information allows you to identify Trojans, authorized or unauthorized applications as well as valid applications which can provide remote access into your network. Any type of software which is run without your express instruction from the start menu should be noted and checked for validity.

Failure to do so may provide an entry opportunity into your system.

Security audit policy settings

Click on the **Security Audit Policy** sub-node to view the security audit policy settings configured on a scanned target computer.

An important part of any security plan is the ability to monitor and audit events happening on your network. These event logs are frequently referenced in order to identify security holes or breeches. Identifying attempts and preventing them from becoming successful breeches of your system security is critical. In Windows, you can use 'Group Policies' to set up an audit policy that can track user activities or system events in specific logs.

Whilst scanning, GFI LANguard N.S.S. extracts the currently configured security audit policy settings from the target computer(s). Use this information to identify whether auditing policies are properly set up on your network computers.

GFI recommends that you set up the audit policy settings of your network computers as follows:

Auditing Policy	Success	Failure
Account logon events	Yes	Yes
Account management	Yes	Yes
Directory service access	Yes	Yes
Logon events	Yes	Yes

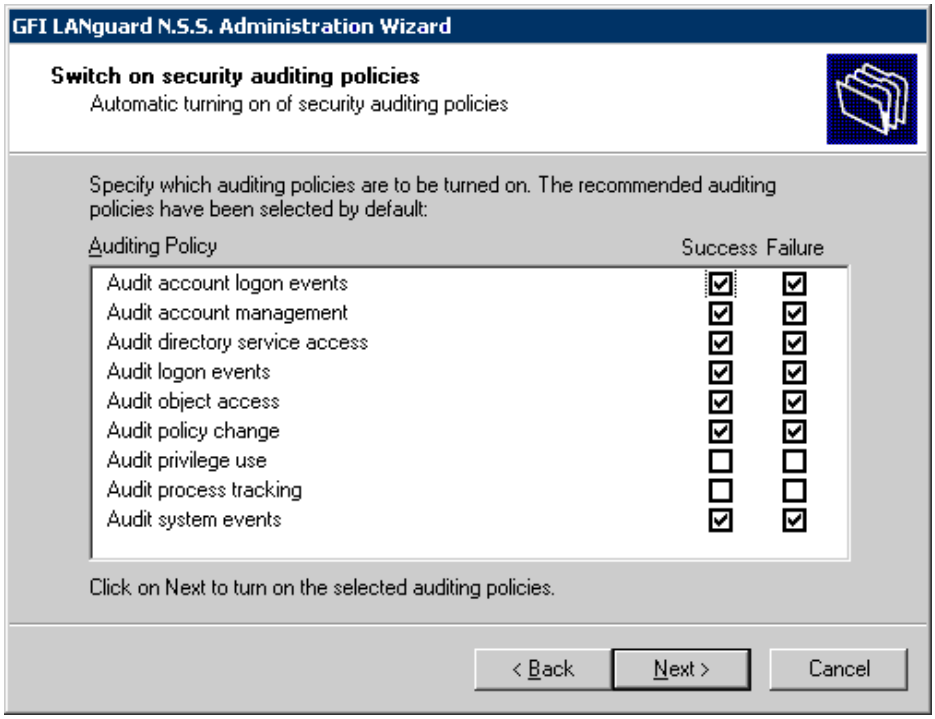
Object access	Yes	Yes
Policy change	Yes	Yes
Privilege use	No	No
Process tracking	No	No
System events	Yes	Yes

You can also remotely configure the audit policy settings of target computers directly from the GFI LANguard N.S.S configuration interface. This is done as follows:

1. From the 'Scanned Computers' (middle) pane, right-click on the respective target computer and select **Enable auditing on ▸ This computer**. This will launch the 'Audit Policy Administration Wizard'. Click on **Next** to proceed with the configuration.

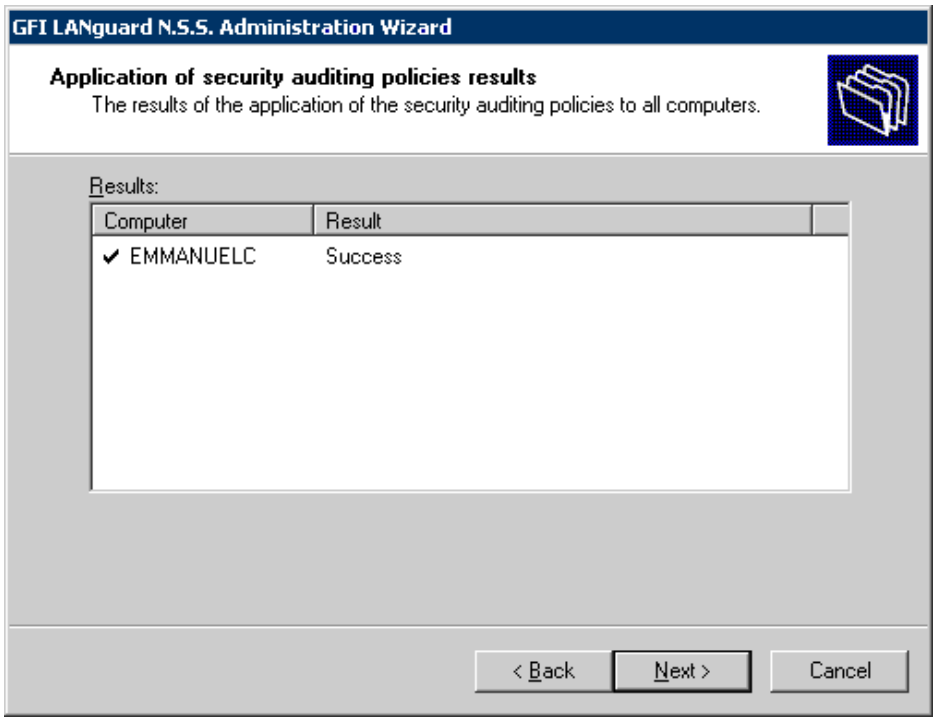
NOTE 1: To remotely configure auditing policies on a particular selection of target computers, right-click on any target computer (which is listed in the middle pane) and select **Enable auditing on ▸ Selected computers**.

NOTE 2: To remotely configure auditing policies on all target computers listed in the 'Scanned Computers' (middle) pane, right-click on any target computer and select **Enable auditing on ▸ All computers**.



Screenshot 24 - The Audit Policy Administration wizard

2. Select/unselect the check boxes of the auditing policies that you wish to set up on the selected target computer(s). For example, to log successful events, select the *'Successful'* check box of the relevant auditing policy. Click on **Next** to initiate the audit policy configuration process on the remote target computer(s).



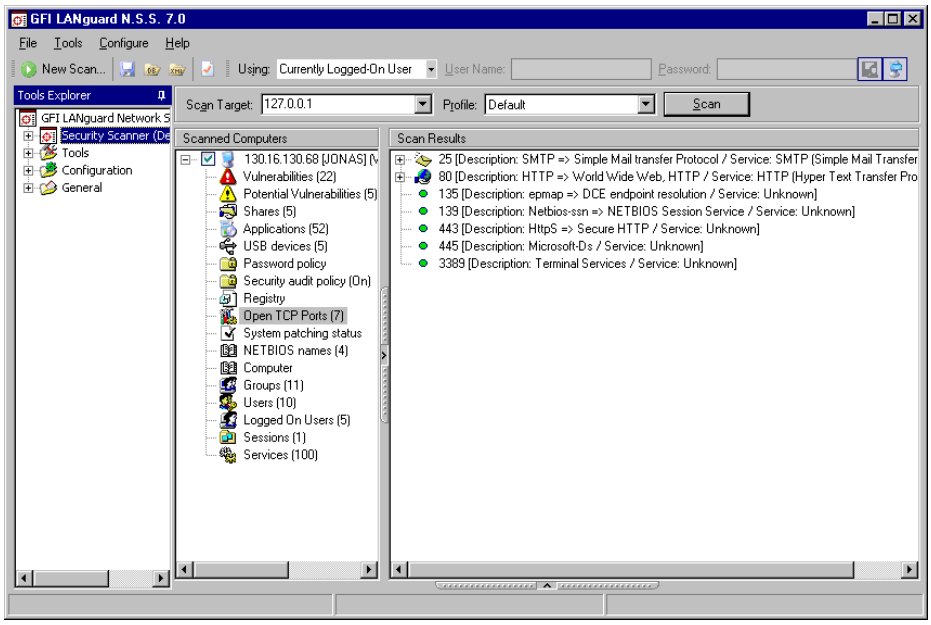
Screenshot 25 - Results dialog in audit policy wizard

3. A dialog will now show the audit policy configuration results. Click on **Next** to proceed to the last stage of the configuration process.

4. Click on **Finish** to close the 'Audit Policy Administration Wizard'.

Open ports

Click on the **Open Ports** sub-node to view a list of ports which are detected as being open for listening on a scanned target computer.



Screenshot 26 - Open TCP ports node

Open ports represent active services and applications which can be exploited by malicious users to gain access to a computer. It is very important to only leave the ports which you know are necessary for

the central/core functions of your network services. All other ports should be closed.

By default GFI LANguard N.S.S. is configured to use the 'Default Scanning Profile'. Via the use of this scanning profile, not all of the 65535 TCP and UDP ports are checked as this may take a long time to complete per target computer. When using the 'Default Scanning Profile', GFI LANguard N.S.S. performs checks on the ports most commonly exploited by hackers, Trojans, viruses, spyware and malware. Use the ' Full TCP & UDP Port Scan' scanning profile to run a full open port check on all targets.

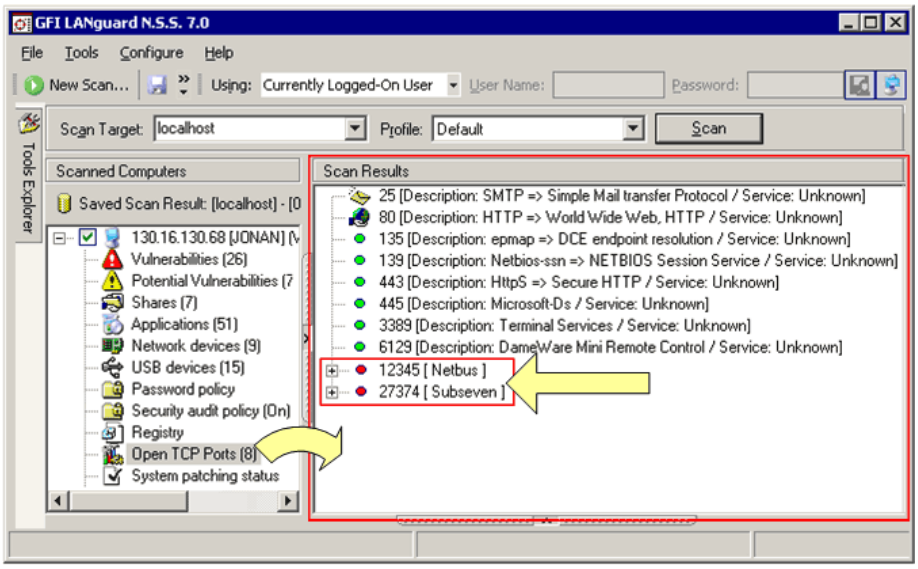
For more information on how to run security audits using different scanning profiles refer to the 'Scanning profiles in action' section in the 'Scanning Profiles' chapter in this manual.

For more information on how to customize a scanning profile refer to the 'Creating a new scanning profile' section in the 'Scanning Profiles' chapter in this manual.

Service fingerprinting

Further to detecting if the port is open or not, GFI LANguard N.S.S. uses service fingerprint technology to analyze the service(s) which are running behind the detected open port(s). Through service fingerprinting you can ensure that no hijack operation has taken place on that port. For example, you can verify that behind port 21 of a particular target computer there is an FTP server running and not an HTTP server.

Dangerous port reporting



Screenshot 27 - Scan Results: Dangerous ports are marked in RED

When a commonly exploited port is found open, GFI LANguard N.S.S., will mark it in red. Care is to be taken as even if a port shows up in red, it does not mean that it is 100% a backdoor program. Nowadays with the array of software being released it is becoming more common that a valid program uses the same ports as some known Trojans.

Users and groups

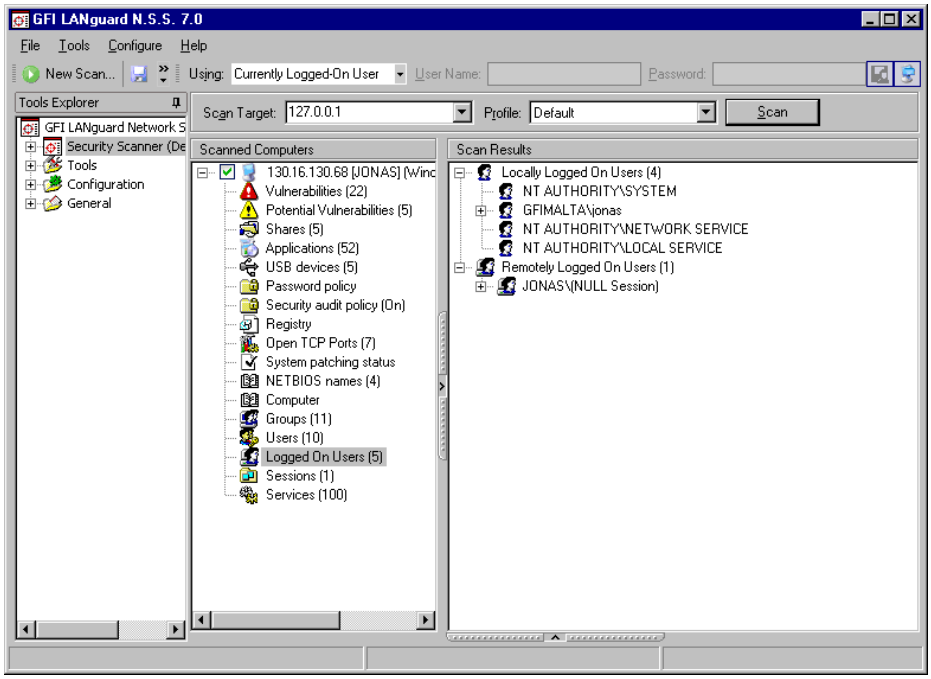
Click on the **Users** sub-node to view all local user accounts on target computer(s). Click on the **Groups** sub-node to view all local groups on the scanned target computer(s).

Use this information to identify rogue or unused users and groups that can allow access to unauthorized visitors! These include the 'Guest' account and other unused or obsolete user accounts and groups. Some backdoor programs re-enable the 'Guest' account and grant it administrative rights. Use the details enumerated in the **Users** sub-node of the scan results to inspect the access privileges assigned to each user account.

NOTE: Users should not use local accounts to log on to a network computer. For better security, users should log on to network computers using a 'Domain' or an 'Active Directory' account.

Logged on users

Click on the **Logged on Users** sub-node to access the list of users that are logged on to the scanned target computer locally (via an interactive logon) or remotely (via a remote network connection).



Screenshot 28 - Logged on users node

For every logged on user that is detected, the following information is retrieved (depending on applicability).

- Logged on username.
- *'Time and Date of the Logon'* – The time and date when the user logged on the target computer.
- *'Time elapsed since their logon'* – How long the user has been logged on this computer.
- *'Number of programs running'* – The number of programs that the interactively logged on user was running at the time of the scan.

- *'Idle time'* – How long the remote user's connection has been idle (i.e. completely inactive).
- *'Client type'* – The platform/operating system that the remote user used to connect to the target computer.
- *'Transport'* – The name of the service that was used to initiate the remote connection between the remote computer and the target computer (for example, NetBios.Smb, Terminal Service, Remote Desktop).

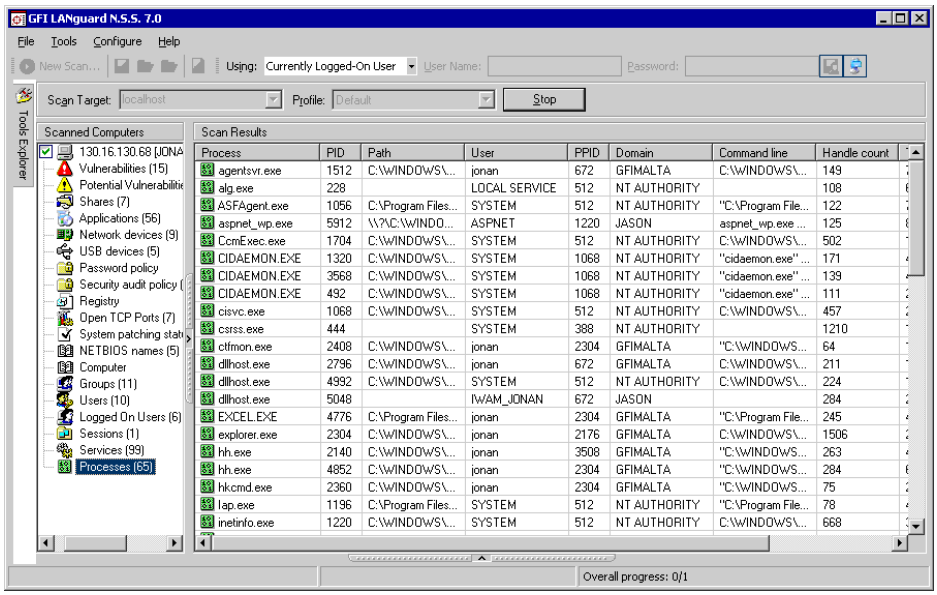
Running services

Click on the **Services** sub-node to access the list of services that were running on the target computer(s) during the security scan. Use this information to identify unknown/unrequired running services on your network computer(s).

NOTE: Each running service can be a potential security weak spot in your network system. For this reason, we recommend that you close/disable all unnecessary applications and services that are running your network. This exercise automatically hardens your network by reducing the entry points through which an attacker can penetrate into your system.

Remote running processes

Click on the **Remote Processes** sub-node to access the list of processes that were running on the target computer during a scan.



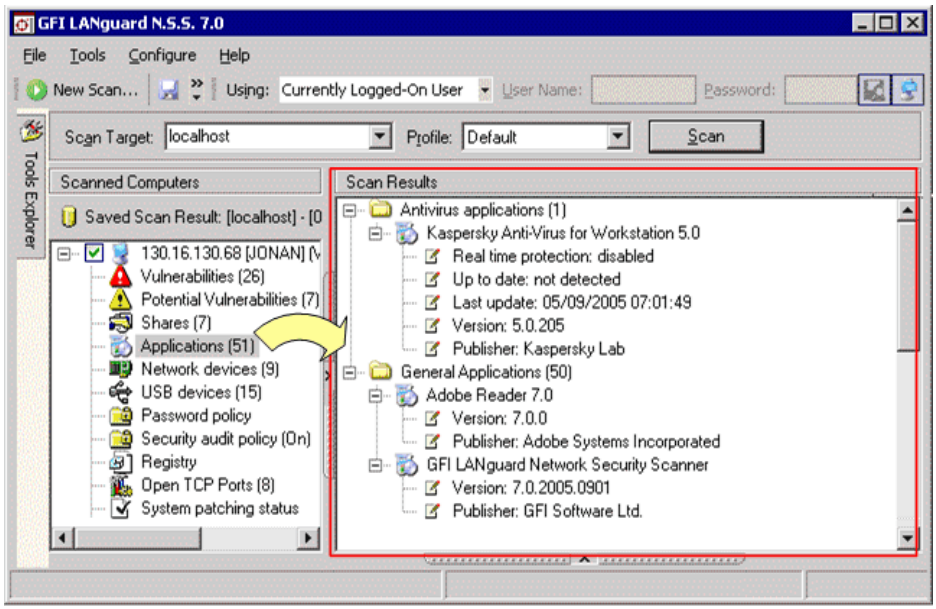
Screenshot 29 - List of running processes enumerated during a target scan

During security scanning, GFI LANguard N.S.S. harvests various information on the processes which are running on scanned target computers. Details enumerated during security scanning include:

- Process name
- Process ID
- Path
- User

- PPID
- Domain
- Command Line
- Handle Count
- Thread Count
- Priority.

Installed applications



Screenshot 30 - List of installed applications enumerated during target computer scanning

Click on the **Applications** sub-node to access the complete list of applications that are installed on a scanned target computer. Discovered applications are organized into three groups:

- **Anti-virus applications**
- **Anti-spyware applications**
- **General applications**.

The anti-virus **applications** and anti-spyware **applications** groups contain the list of security applications installed on a scanned target computer. Details enumerated in these groups include:

- *Application name.*
- *'Real time protection:'* – Denotes if real time protection is enabled or disabled in an anti-virus application.
- *'Up to date:'* – Denotes if the anti-virus/anti-spyware signature files of a security application are up to date. This is achieved by checking (where applicable) the signature file status flag of an application.
- *'Last update:'* – Shows the date and time of the last anti-virus/anti-spyware signatures update.
- *'Version:'* – Shows the version number of the security application.
- *'Publisher:'* – Shows the manufacturer details.

The **General applications** group contains the list of general purpose applications installed on a scanned target computer. These include all software programs which are not classified as anti-virus or anti-spyware products such as Adobe Acrobat Reader and GFI LANguard Network Security Scanner.

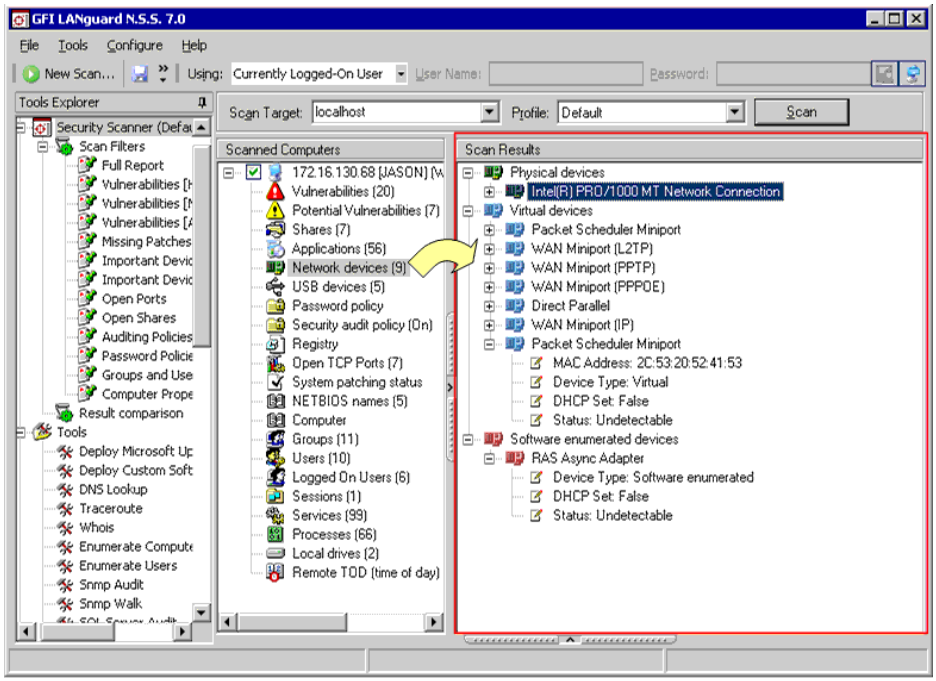
Details enumerated in the **General Applications** group include:

- *Application name.*
- *'Version:'* – Shows the version number of the application.
- *'Publisher:' – Shows t*he manufacturer details.

Network devices

Click on the **Network Devices** sub-node to access the list of network devices/components (for example, wired and wireless network cards) which are installed on a scanned target computer. Use this information to analyze and identify unauthorized devices connected to your network.

Unmonitored network devices, especially wireless ones, are becoming a main source of information leakage in organizations. Special care must be given to ensure that only authorized wireless devices are connected to your network infrastructure!.



Screenshot 31 - Network devices enumerated during a security scanning session

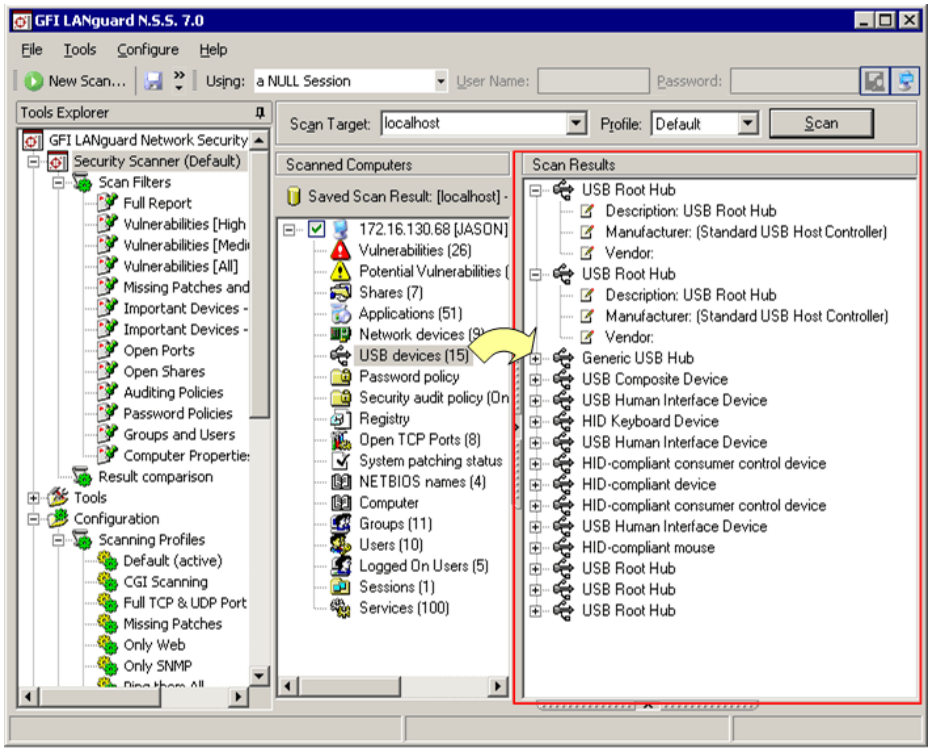
GFI LANguard N.S.S. identifies all devices on your network including physical and wireless ones. The information enumerated in the **Network Devices** sub-node is organized in four main groups:

- **Physical devices (Wired)**
- **Wireless devices**
- **Virtual devices**
- **Software enumerated devices.**

Each group includes various details about the device detected including:

- *MAC Address*
- *Assigned IP Address(es)*
- *Hostname*
- *Domain*
- *DHCP details*
- *WEP (were available)*
- *SSID (were available)*
- *Gateway*
- *Status.*

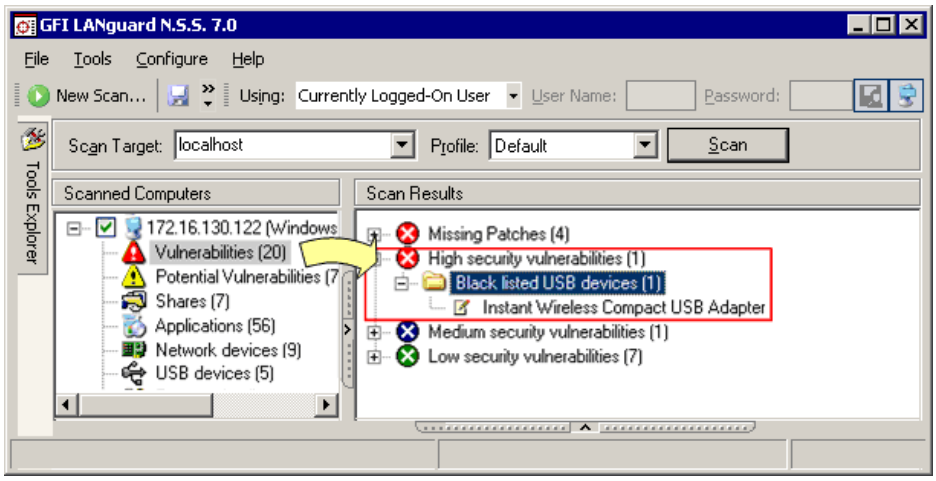
USB devices



Screenshot 32 - List of USB devices detected on a scanned target computer

Click on the **USB Devices** sub-node to access the list of USB devices connected to the target computer(s). Use the information collected in this sub-node to identify unauthorized USB devices currently plugged into the scanned target computer(s). These unauthorized devices may include portable storage devices such as the Apple iPod, or Creative Zen as well as USB wireless devices and Bluetooth dongles.

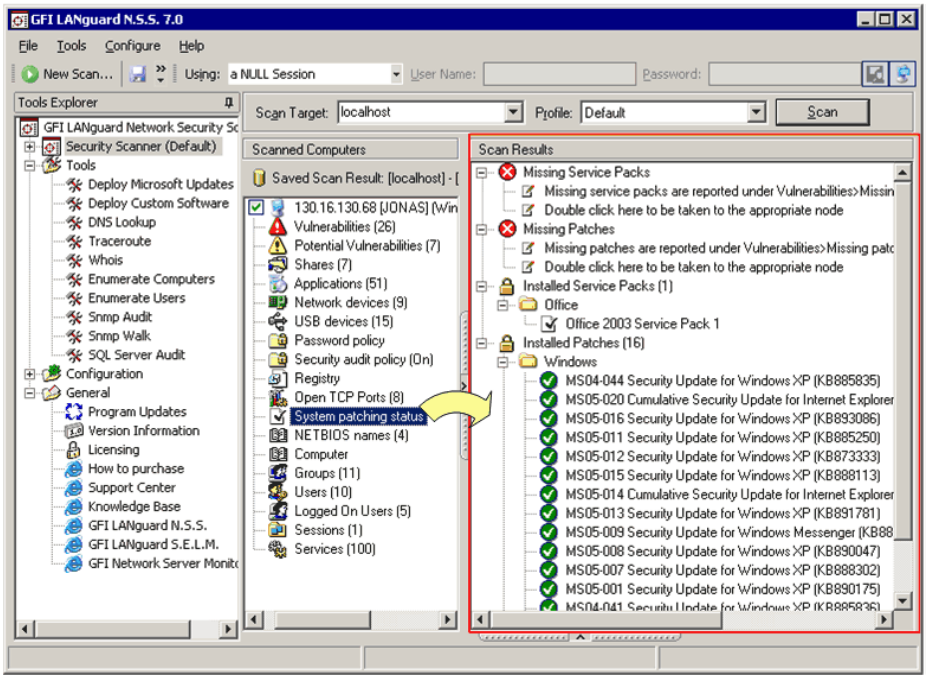
Reporting unauthorized devices as high security vulnerabilities



Screenshot 33 - Dangerous USB device listed as a High Security Vulnerability

GFI LANguard N.S.S. can be configured to distinguish between authorized and unauthorized USB devices. For more information, refer to the 'Compiling a list of unauthorized network devices' section in the 'Scanning Profiles' chapter in this manual.

System hot fixes patching status



Screenshot 34 - The list of missing and installed patches enumerated during target computer scanning

Click on the **System patching status** node for an overview of the patching status of a target computer.

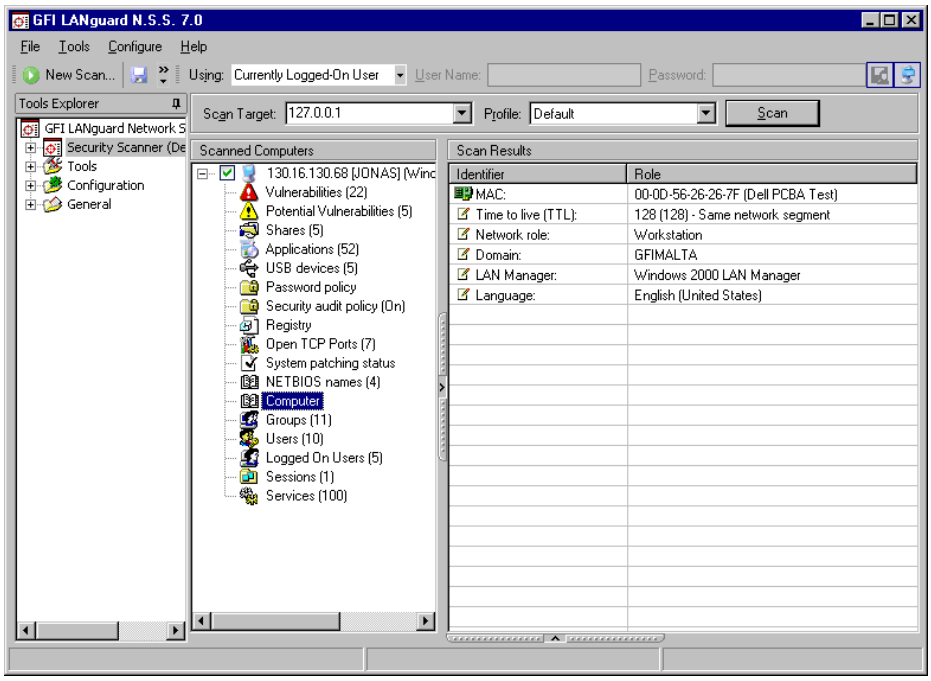
NETBIOS names

Click on the **NETBIOS names** sub-node to access the list of NetBIOS names enumerated during target computer scanning.

Each computer on a network has a unique NetBIOS name. The NetBIOS name is 16-byte address that allows NetBIOS resources to be identified on the network. NETBIOS names are successfully mapped to an IP address using NetBIOS name resolution.

During the target probing process, GFI LANguard N.S.S. queries the identity and availability of a target network computer using NetBIOS. If available, the target computer will respond to the request by sending the respective NetBIOS name.

Scanned target computer details



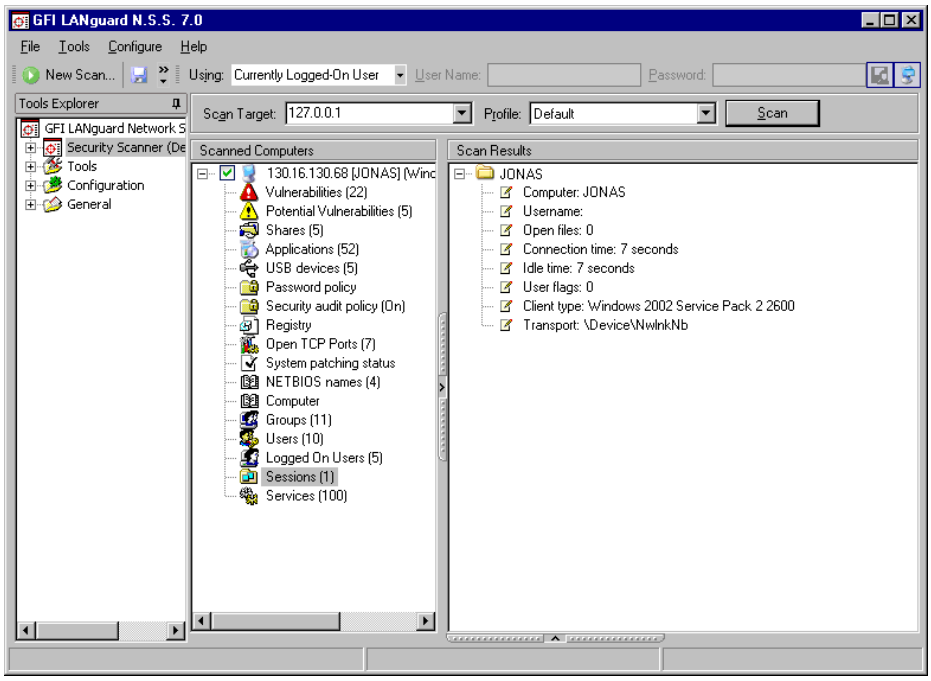
Screenshot 35 – Computer's node

Click on the **Computer** sub-node to access particular details about the scanned target computer. The details enumerated in this node include:

- '*MAC:*' - Shows the MAC address of the network card which the target computer is using to connect to the network.
- *'Time To Live (TTL):'* - Shows the maximum number of network hops allowed before a data packet expires/is discarded. Based on this value, you can identify the distance (i.e. the number of router hops) between the computer running GFI LANguard N.S.S. and the target computer that was just scanned. Typical TTL values include 32, 64, 128, and 255.
- '*Network Role:*' - Denotes whether the scanned target computer is a Workstation or a Server.
- '*Domain:*' - Denotes the domain/workgroup details. When scanning targets which are part of a domain, this field shows the list of trusted domain(s). If the scanned target computer is not part of a domain, this field will show the name of the respective Workgroup.
- '*LAN Manager:*' - Shows the type of operating system and LAN Manager in use (for example, Windows 2000 LAN Manager).

- *'Language:'* - Shows the language setting configured on the scanned target computer (for example, English).

Active sessions



Screenshot 36 – Session's node

Click on the **Sessions** sub-node to access the list of hosts that were remotely connected to the target computer during scanning. The details shown in this sub-node include:

- *'Computer:'* - The IP Address of the host which was remotely connected to the scanned target computer.
- *'Username:'* – The logged on username.
- *'Open files:'* - The number of files accessed during the session.
- *'Connection time:'* - The duration of the connection session i.e. the time (in seconds) that the user(s) has been remotely connected to the scanned target computer.
- *'Idle Time:'* - The total time (in seconds) during which the connection was inactive.
- *'Client type'* - The platform/operating system that the remotely logged on computer (i.e. client computer) is running.
- *'Transport'* - The name of the service that was used to initiate the remote connection between the client computer and the target computer (for example, NetBios.Smb).

NOTE: The information enumerated in this sub-node also includes the remote connection details of the scanning session just performed by GFI LANguard N.S.S. i.e. the IP of the computer that is running GFI LANguard N.S.S., the logon credentials, etc.

Remote time of day

Click on the **Remote TOD (time of the day)** sub-node to view the network time that was read from the target computer during the scan.

This time is generally set on network computers by the respective domain controller.

Local drives

Click on the **Local Drives** sub-node to view the list of physical drives that are accessible on the scanned target computer. The information enumerated in this sub-node includes the drive letter, the total disk space and the available disk space.

Saving and loading scan results

Introduction

By default, GFI LANguard N.S.S. automatically saves scan results to an Microsoft Access or Microsoft SQL Server database backend. However, through further configuration you can also save scan results to an external XML file.

Saved scan results can be re-loaded from both XML files and database backend into the GFI LANguard N.S.S. user interface for further processing. For example, you can re-load scan results for comparison or to deploy already discovered missing patches on particular targets without re-scanning the network system.

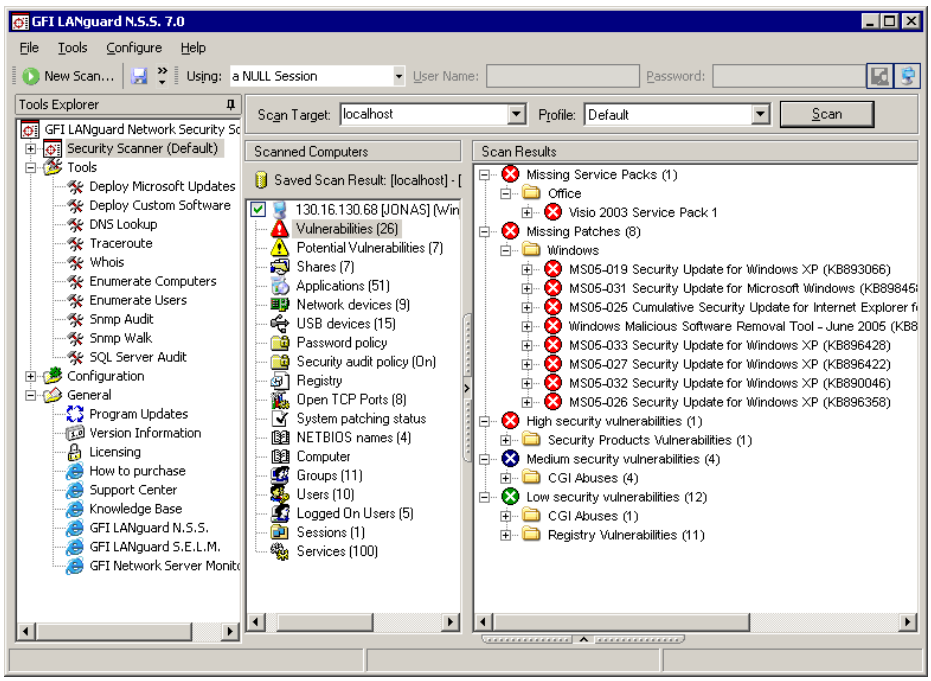
Saving scan results to an external (XML) file

Once GFI LANguard N.S.S. completes a security scan, the results are automatically saved to the database backend. To save these results to an external XML file:

1. Go to **File ▸ Save scan results…**
2. Specify the name of the XML file where the results will be stored (for example, ScanResult_11052006.xml).
3. Click on **Save**.

Loading saved scan results

Loading saved scans from database backend



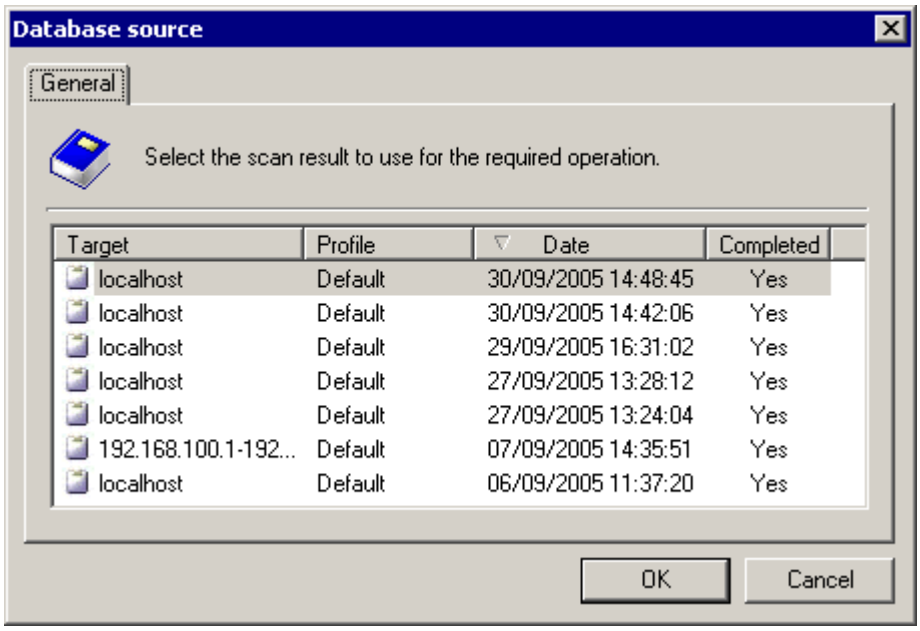
Screenshot 37 - Reloaded scan results

GFI LANguard N.S.S. can store scan results in an Microsoft Access or Microsoft SQL Server database backend. In the same database file, by default, GFI LANguard N.S.S. will save the scan results of the last 10 scans performed on the same target with the same scanning profile.

NOTE: You can change the number of saved scan results from the **Database Maintenance** node through the **Manage Saved Scan Results** tab. For more information refer to the 'Manage saved scan results' section in the 'Database Maintenance Options' chapter.

To load saved scan results from the database backend:

1. Right click on the **Security Scanner (default)** node and select **Load saved scan results from… ▸ Database**. This will bring up the saved scan results dialog.



Screenshot 38 - Saved Scan Results dialog

2. Select the scan results that you wish to load.
3. Click on **OK**.

Loading saved scan results from an external (XML) file

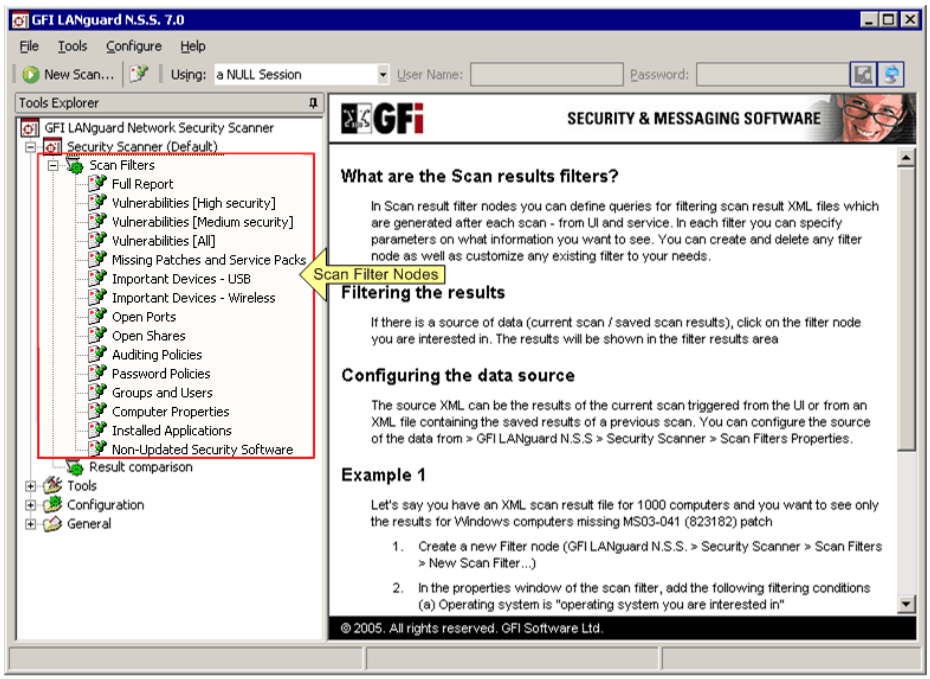
To load saved scan results from an external XML file:

1. Right click on the **Security Scanner (default)** node and select **Load saved scan results from… ▸ XML…**. This will bring up the saved XML scan results dialog.
2. Select the scan results file that you wish to load.
3. Click on **OK**.

Filtering scan results

Introduction

Following a security scan, you can filter the scan results and only display the information that you wish to analyze. For example, you can filter the information collected during a scan and only display details related to computers with high security vulnerabilities.



Screenshot 39 - Scan filter nodes

To filter scan results, you must apply a 'Scan Filter' over the data collected in the security scan. Scan filters are queries which extract and display specific scan result details. GFI LANguard N.S.S. ships with a number of default filters. These include:

- **Full report:** Shows all security related data collected during a scan.
- **Vulnerabilities [High Security]:** Shows critical issues which require immediate attention such as missing service packs, missing patches, high security vulnerabilities and open ports.
- **Vulnerabilities [Medium Security]:** Shows issues which may need to be addressed by the administrator such as average threats and medium vulnerability patches.
- **Vulnerabilities [All]:** Shows all High and Medium vulnerabilities discovered during a security scan such as missing patches, and missing service packs.

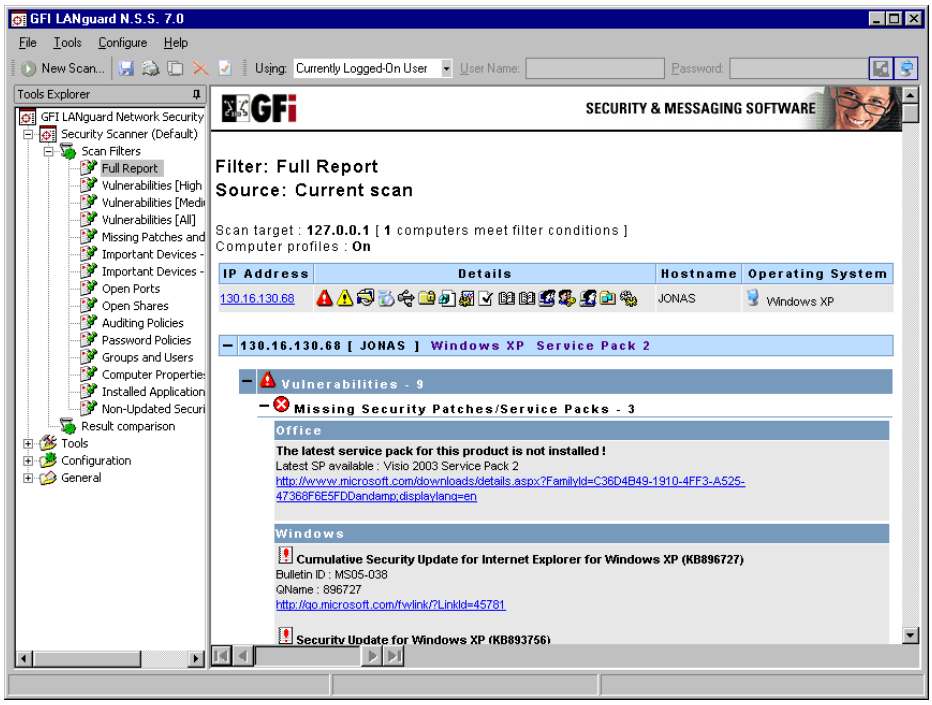
- **Missing patches and service packs:** Shows all missing service packs and patch files discovered on the scanned target computer(s).
- **Important devices – USB:** Shows all the USB devices attached to the scanned target computer(s).
- **Important devices – Wireless:** Shows all the wireless network cards, (both PCI and USB) attached to the scanned target computer(s).
- **Open ports:** Shows all open TCP and UDP ports discovered on the scanned target computer(s).
- **Open shares:** Shows all open shares and the respective access rights.
- **Auditing policies:** Shows the auditing policy settings of the scanned target computer(s).
- **Password policies:** Shows the active password policy settings configured on the scanned target computer(s).
- **Groups and users:** Shows the users and groups detected on the scanned target computer(s).
- **Computer properties:** Shows the properties of each target computer.
- **Installed applications:** Shows all the installed applications (including security software) discovered during target computer scanning.
- **Non-updated security Software:** Shows only the installed security applications (i.e. anti-virus/anti-spyware software) that have missing updates and outdated signature definition files.

NOTE: You can also create new scan filters or customize the above default scan filters.

Running a filter on a scan

To run a scan result filter on security scan results:

1. Launch and complete a security scan of your network or load the scan results of past scans from your database or XML file.



Screenshot 40 - Scan filters: Full report

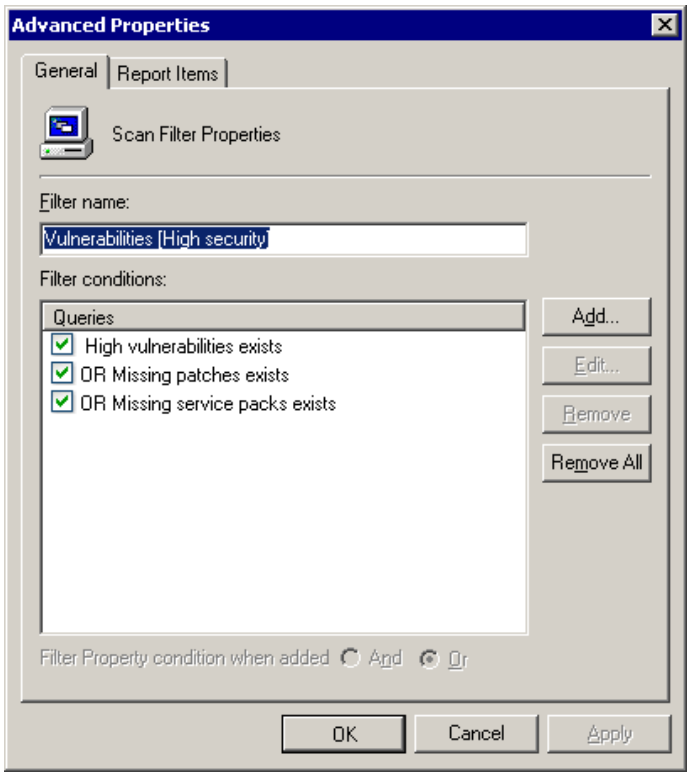
2. Expand the **Security Scanner ▸ Scan filter** nodes.

3. Select the scan filter that you want to trigger (e.g. Vulnerabilities all).

Creating a custom scan filter

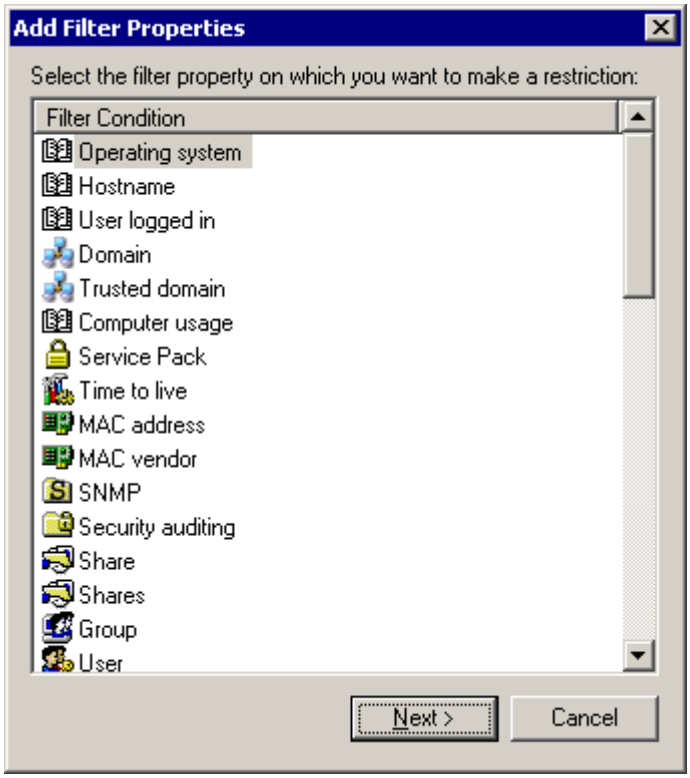
To create a custom scan filter:

1. Right click on the **Security Scanner ▸ Scan filter** node and select **New ▸ Filter…** . This will bring up the new scan filter properties dialog.



Screenshot 41 - The new Scan filter properties dialog: General tab-page

2. In the **General** tab which opens by default, specify the name of the new scan filter.

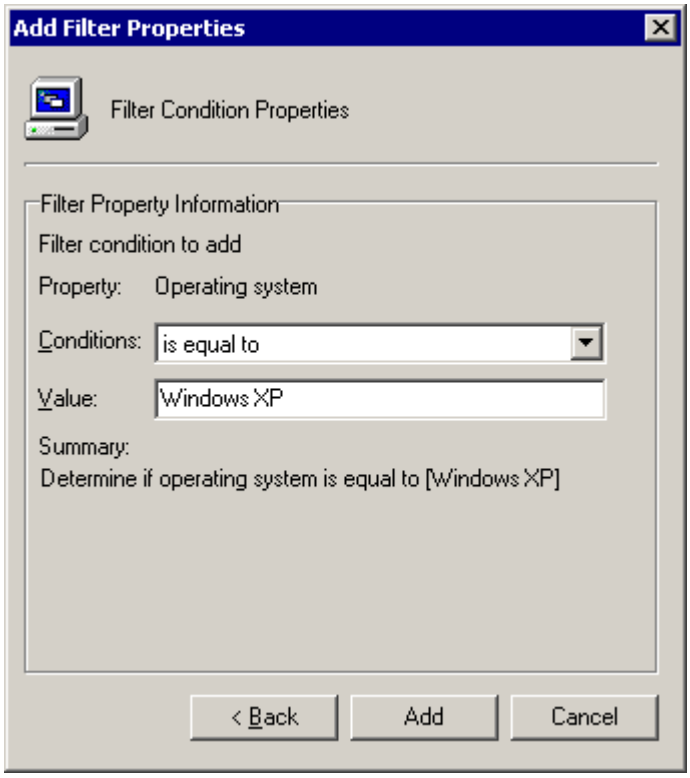


Screenshot 42 - Filter properties dialog

3. Click on **Add** and select the required filter property from the provided list (for example, Operating System). The filter property

defines what type of information will be extracted from the scan results (i.e. the area of interest of the scan filter).

4. Click on **Next** to continue.

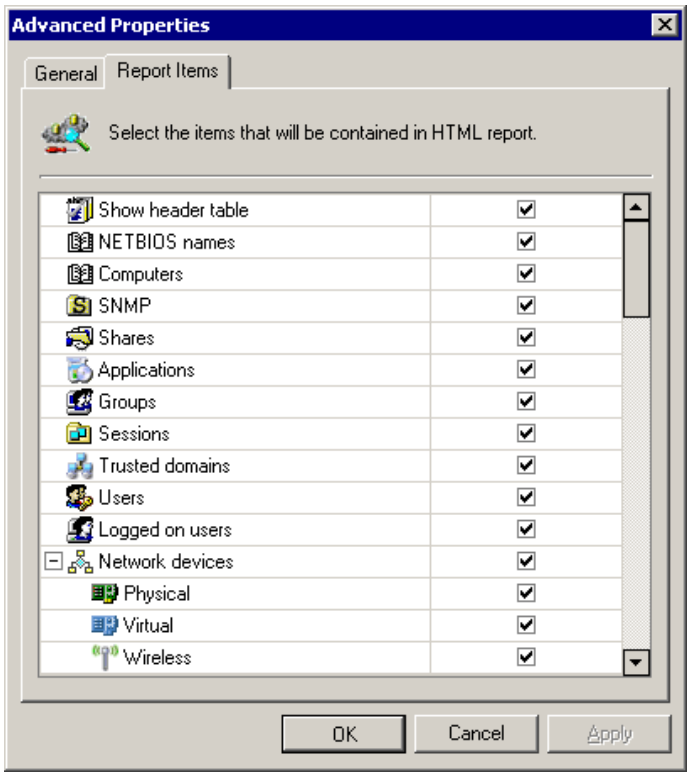


Screenshot 43 - Filter condition properties dialog

5. Select the required filter condition from the *'Conditions'* drop down and specify the filter value. The filter value is the reference string that this scan filter will use in accordance with the specified condition to extract information from scan results.

6. Click on **Add** to continue.

NOTE: You can create multiple filter conditions for every scan filter. This allows you to create powerful filters which isolate more accurately the scan results information that you may want to analyze.



Screenshot 44 - The new Scan-Filter properties dialog: Report Items tab-page

7. Click on the **Report Items** tab.

8. Select the information categories/sub-nodes which will be displayed in the configuration interface at the end of the filtering process.

9. Click on **OK** to create the filter.

The new filter will be added as a new permanent sub-node under the **Security Scanner ▸ Scan filters** node.

NOTE: To delete or customize a scan filter, right-click on the target filter and selecting **Delete…** or **Properties** respectively.

Example 1 – Create a filter which displays all computers that have a particular patch missing

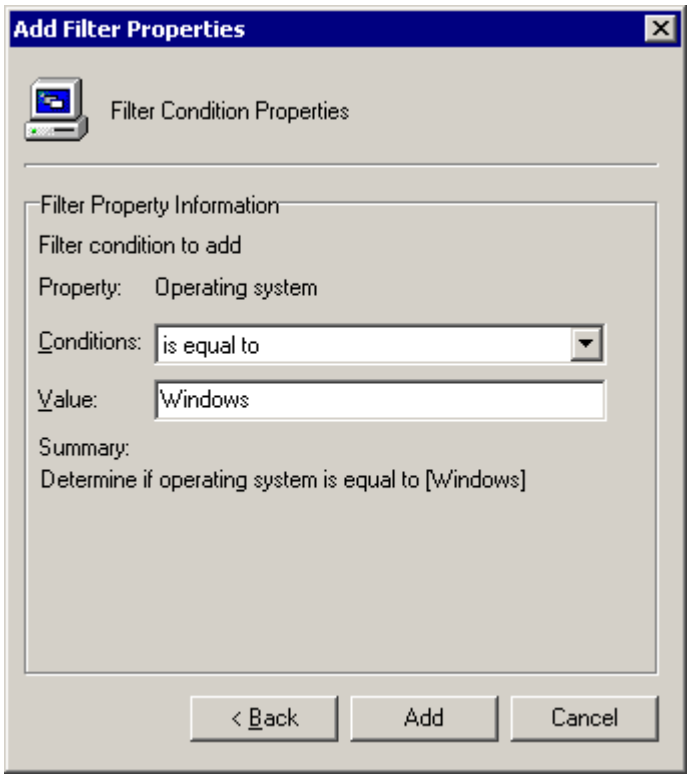
In this example, we will create a filter which lists all Windows based computers that have the MS03-026 patch (i.e. the blaster virus patch) missing.

1. Right click on the **Security Scanner ▸ Scan filter** node and select **New ▸ Filter…** . This will bring up the new scan filter properties dialog.

2. In the filter name field type in *'Missing Blaster Patch'.*

3. Click on the **Add** button.

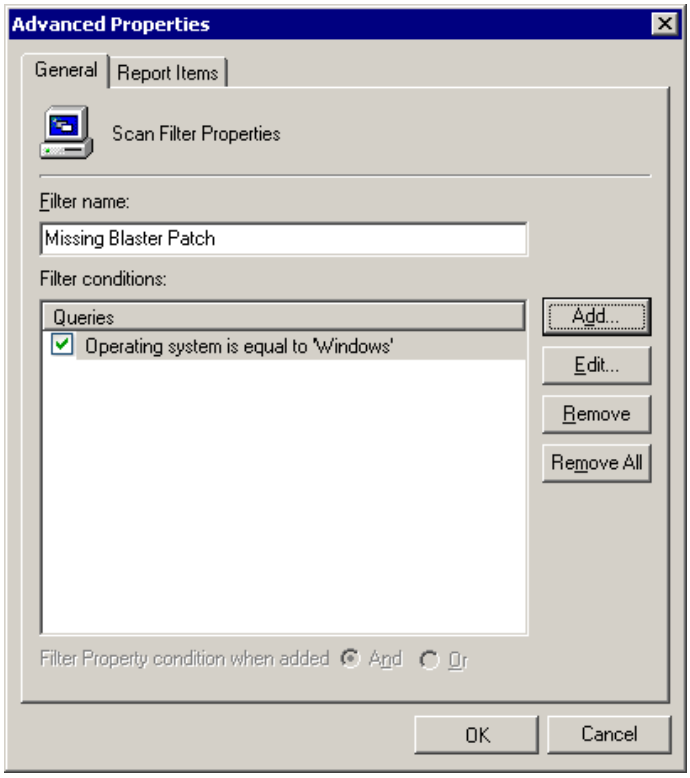
4. Select the *'Operating System'* option and then click on **Next**.



Screenshot 45 - Filter conditions dialog

5. From the conditions drop down select *'Includes'* and in the value field type in *'Windows'*.

6. Click on the **Add** button to add the condition to the filter.



Screenshot 46 - The new Scan Filter properties dialog: General tab-page

7. From the new scan filter properties dialog, click on **Add** to create another filter condition in which we will specify the required patch name (i.e. MS03-026).

8. From the list of filter properties, select *'Patch'* and then click on **Next**.

9. From the conditions drop down select *'is not installed'* and in the value field type in *'MS03-026'*.

10. Click on the **Add** button to include this condition in the scan filter.

11. Click on **OK** to finalize the configuration and create the filter. The new filter is added as a new permanent sub-node. (**Security Scanner ▸ Scan filter ▸ Missing Blaster Patch)**.

Example 2 – Create a filter that lists all Sun stations with a web server

To create a filter which lists all Sun workstations that are running a web server on port 80, perform the following steps:

1. Right click on the **Security Scanner ▸ Scan filter** node and select **New ▸ Filter…**. This will bring up the new scan filter properties dialog.

2. In the filter name field type in *'Sun WS web servers on port 80'.*

3. Click on the **Add** button.

4. From the list of filter properties select *'Operating System'* and then click on **Next**.

5. From the conditions drop down select '*Includes'* and in the value field type in *'Sun OS'.*

6. Click on the **Add** button.

7. From the properties dialog, click on the **Add** button to add another filter condition.

8. Select '*TCP Port'* and click on **Next**. This will bring up again the filter conditions dialog.

9. From the conditions drop down select *'is open*' and in the value field type in *'80'*.

10. Click on the **Add** button to include this condition in the scan filter.

11. Click on **OK** to finalize the configuration and create the filter. The new filter will be added as a new permanent node. (**Security Scanner ▸ Scan filter ▸ Sun WS web servers on port 80**).

Configuring GFI LANguard N.S.S.

Introduction

All the GFI LANguard N.S.S. configuration options are accessible via a set of sub-nodes included under the **Configuration** node. These are the:

- **Scanning profiles** node
- **Scheduled scans** node
- **Computer profiles** node
- **Alerting options** node
- **Parameter files** node
- **Database maintenance options**' node.

Use the above mentioned nodes to:

- Customize the default security scanning profiles
- Add new scanning profiles with different scanning options
- Configure scheduled security scans
- Configure the GFI LANguard N.S.S. email alerting options
- Configure the database backend to use.

Scanning Profiles

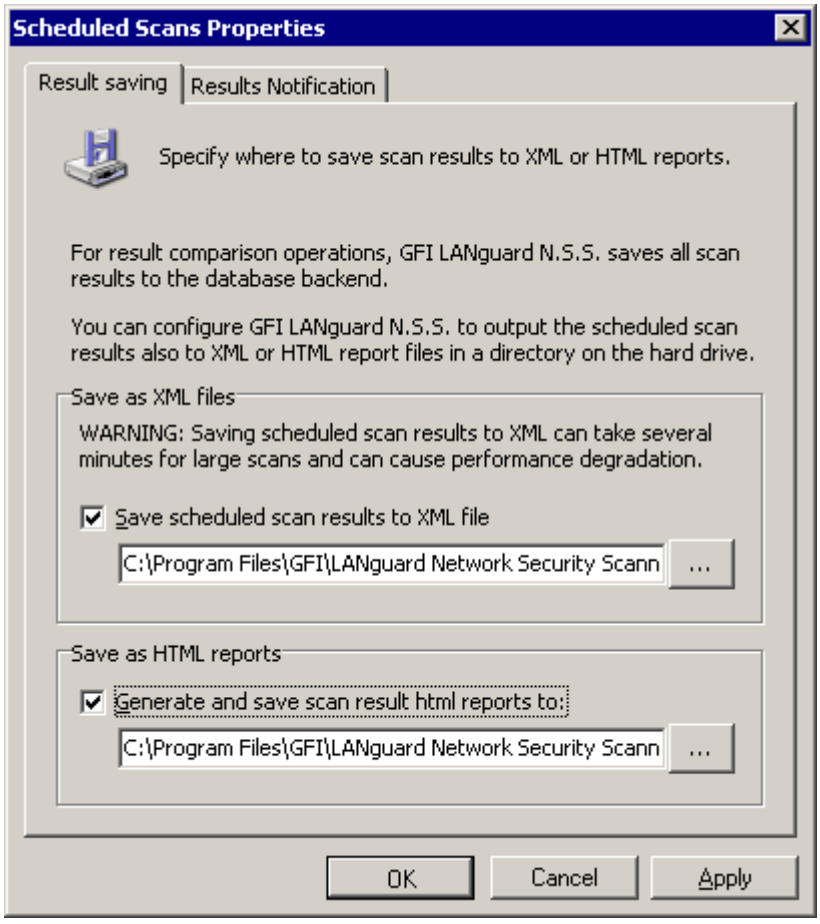
Scanning Profiles are preconfigured templates which define the way that vulnerability scanning is carried out (for example, which vulnerability checks will be executed during a target computer scan). These profiles provide the vulnerability test instructions and parameters which the scanning engine requires to perform a security audit against selected targets.

GFI LANguard N.S.S. supports multiple scanning profiles. In fact it ships with a number of default scanning profiles which you can use to perform general or specialized target vulnerability scans. Further more, you can customize these default scanning profiles by adding or removing vulnerability checks as well as customize the respective operational parameters. You can also create new custom scanning profiles which suite your network infrastructure and target scanning needs.

For more information on how to create, configure and customize scanning profiles refer to the 'Scanning Profiles' chapter in this manual.

Scheduled scans

Use the **Configuration ▸ Scheduled Scans** sub-node to configure scans which are to be automatically executed periodically or on a specific day/time. This allows you to automatically execute particular scans at night or early in the morning on regular bases. The 'Scheduled Scan' configuration options are organized in 2 tabs; the **Result Saving** tab and the **Results Notification** tab. To access these tabs Right click on **Configuration ▸ Scheduled Scans** and select **Properties**. This will bring up the Scheduled Scans configuration dialog.

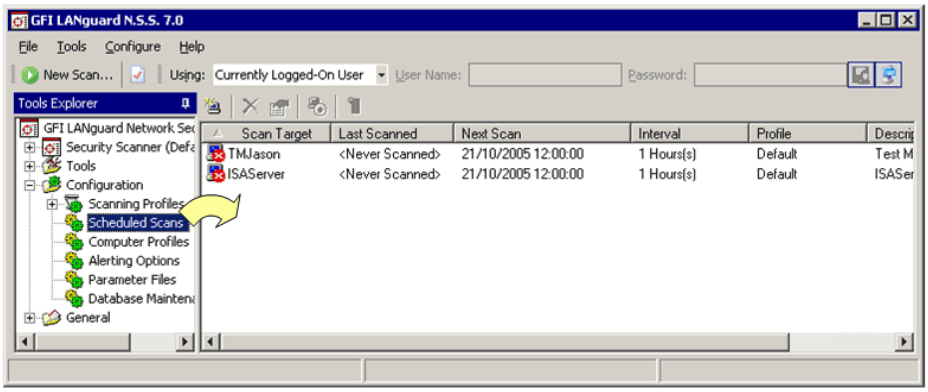


Screenshot 47 - The Scheduled Scans configuration dialog

By default, all scheduled scan results are stored in the database backend. Use the **Result Saving** tab to configure the scheduled scans properties and store scheduled scan results to a specific XML file or HTML file (one file per scheduled scan).

GFI LANguard N.S.S. can also be configured to automatically send scheduled scan reports to a specific email address/recipient (for example, Administrator) at the end of a scheduled scan. Use the **Results notifications** tab to specify which reports to email and the destination email address. GFI LANguard N.S.S. can automatically email 2 types of report; the 'Full Scan' report and the 'Results Comparison' report.

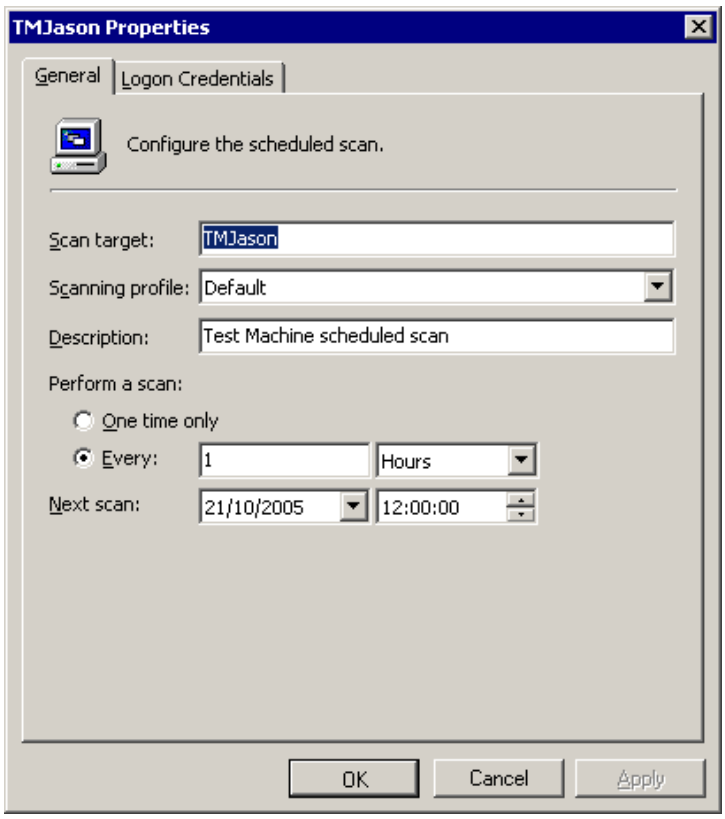
Creating a scheduled scan



Screenshot 48 - List of configured Scheduled Scans

To create a scheduled scan:

1. Right click on the **Configuration ▸ Scheduled Scans** sub-node and select **New ▸ Scheduled scan…** This will bring up the 'New Scheduled Scan' configuration dialog.



Screenshot 49 - New Scheduled Scan dialog

2. In the **General** tab which opens by default, specify the target computers (hostname, IP and IP range).

3 Select the scanning profile that will be used for this scheduled scan and specify a description of the scheduled scan.

4. If this scheduled scan is to be run periodically, specify the frequency at which the scan will be launched.

5. Specify the date and time at which the scheduled scan will start.

6. If alternative logon credentials are required, click on the **Logon Credentials** tab.

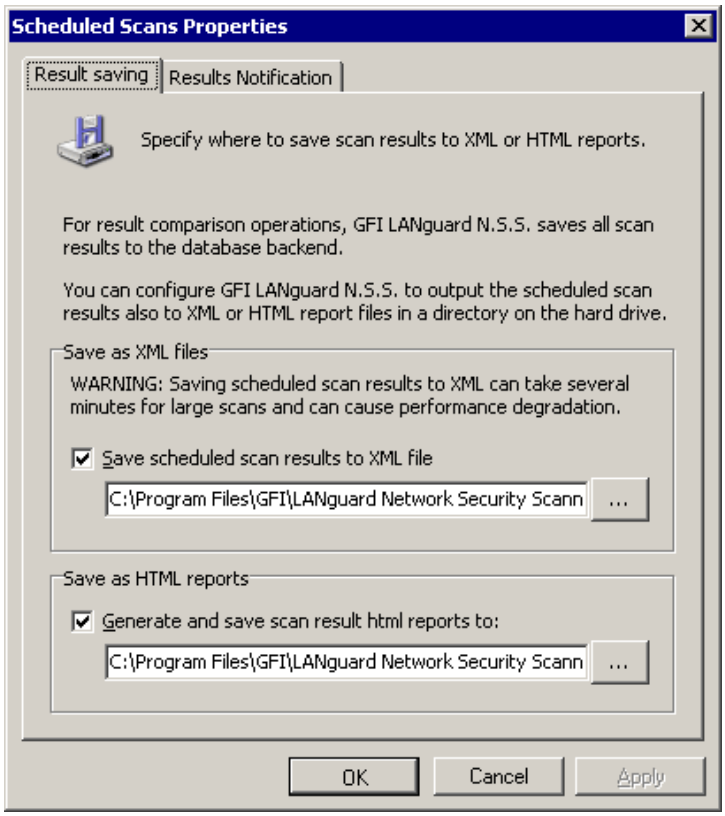
7. From the provided drop down list, select one of the following options:

- 'Alternative Credentials' – Select this option to authenticate to target computers a specific username and password string.
- 'SSH Private Key' – Select this option to authenticate to Linux based target computers using Private Key authentication. Specify the username and the 'Private Key' file in the provided fields.

NOTE: Alternatively, you can configure scheduled scans to get the authentication details directly from Computer Profiles. To enable this feature select the *'Use data from computer profiles'* option. For more information on computer profiles, refer to the 'Computer Profiles' section further on in this chapter.

8. Click on **OK** to save your settings.

Configuring the scan results saving options



Screenshot 50 - Scheduled Scans properties dialog

By default, scheduled scan results are stored in the Microsoft Access or Microsoft SQL Database backend. However, you can also output the scan results to an XML or HTML report file. These files can then be used further on for report comparison operations. To store the scan results in an XML/HTML file:

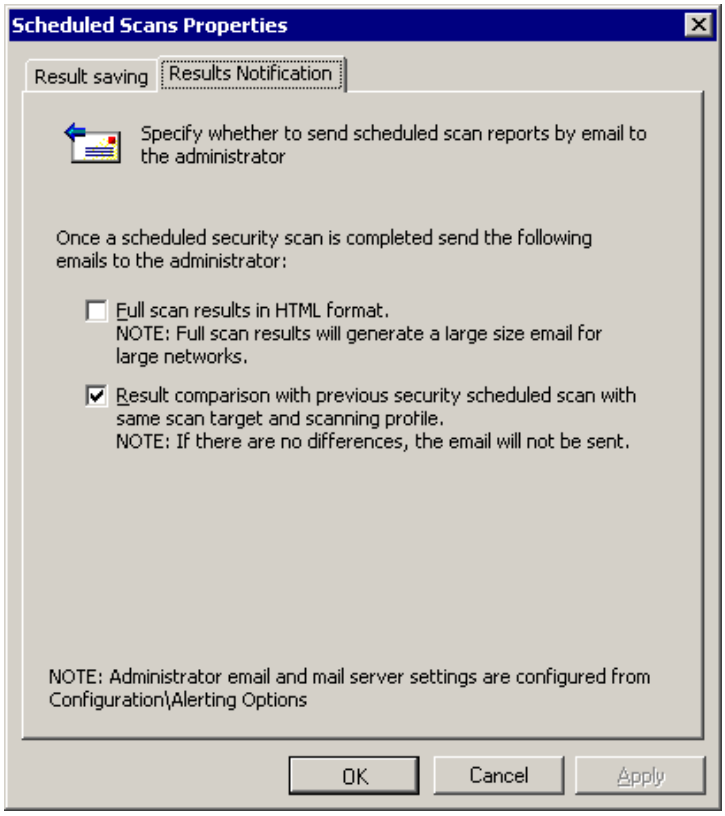
1. Right click on the **Configuration ▸ Scheduled Scans** sub-node and select **Properties**. This will bring up the scheduled scans properties dialog.

2. To save the scan results to an XML file, select the *'Save scheduled scan results to XML file'* option and specify the name and path of the XML file.

3. To save scan results to an HTML file, select the *'Generate and save scan result HTML reports to:'* option and specify the name and path of the HTML file.

4. Click on **OK** to save the settings.

Configuring result notification options



Screenshot 51 - Scheduled Scan properties: Results Notification tab

GFI LANguard N.S.S. can be configured to send scheduled scan reports to a particular recipient via email. Reports that can be sent via email include the 'Full Scan Results' report and the 'Results comparison report'. The 'Full Scan Results' report contains the results of the scheduled scan that has just been completed. The 'Result Comparison' report includes the changes/differences identified between the results of the latest scan and the results of the preceding scan.

NOTE: The 'Results Comparison' report will not be emailed to the administrator if no differences exist between the compared scan results or if you are running your very first scheduled scan.

To specify which reports will be sent via email after a scheduled scan:

1. Right click on the **Configuration ▸ Scheduled Scans** sub-node and select **Properties**. This will bring up the scheduled scans properties dialog.

2. Click on the **Results Notifications** tab.

3. Select the report(s) that will be emailed upon completion of the scheduled scan.

4. Click on **OK** to save your settings.

NOTE: Use the **Configuration ▸ Alerting Options** node to make changes in the mail server settings or administrator email address.

Computer Profiles

Use the **Configuration ▸ Computer Profiles** sub-node to specify and store the logon credentials of your network computers.

When working in both large and smaller-sized networks, you always find that for some computers, you have to log in with one set of credentials and for some other computers you have to log in with a different set of credentials. Particular systems such as Linux based systems often make use of special authentication methods such as Public key authentication. Such authentication methods generally require special/custom logon credentials such as private key files instead of the conventional password strings.

Through computer profiles, you can specify a different set of logon credentials for each target computer. The scanning engine can then refer to the logon credentials stored in these computer profiles when authenticating to target computers. This in turn obsoletes the need to specify a default set of logon credentials prior to starting a network scan as well as makes it possible to scan in the same (single) session target computers which require different logon credentials and authentication methods.

For example, you can run vulnerability checks on Windows targets which require username/password credential strings and Linux based targets which require username/SSH private key files, in a single scanning session.

About SSH Private Key file authentication

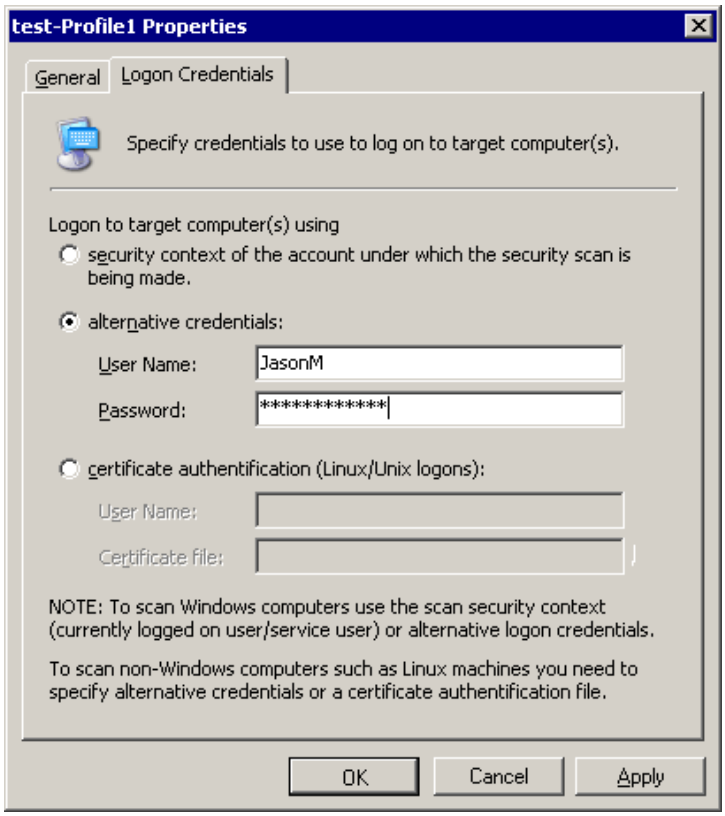
GFI LANguard N.S.S. connects to Linux based target computers through SSH connections. In Public Key cryptography, 2 keys (in the form of text files) are used to verify the authenticity of an SSH connection request. These keys are identified as the ‘SSH Private Key’ and ‘SSH Public Key’.

The SSH Private Key is the half of the key pair that the scanning engine will use to authenticate to a remote Linux based target. This means that the SSH Private Key is used instead of the conventional password string and hence must be stored on the computer which is running GFI LANguard N.S.S.

The SSH Public Key is the part which the remote target computer will use to challenge the authentication of GFI LANguard N.S.S. and is stored on the remote target computer(s).

The SSH Key pair (i.e. Public and Private Keys) are manually generated using a third party tool such as SSH-KeyGen (generally included by default in the Linux SSH package).

Creating a new computer profile



Screenshot 52 - Computer Profile properties dialog

To create a new computer profile:

1. Right click on the **Configuration ▸ Computer Profiles** sub-node and select **New ▸ Computer(s) Profile…** This will bring up the Computer Profile properties dialog.

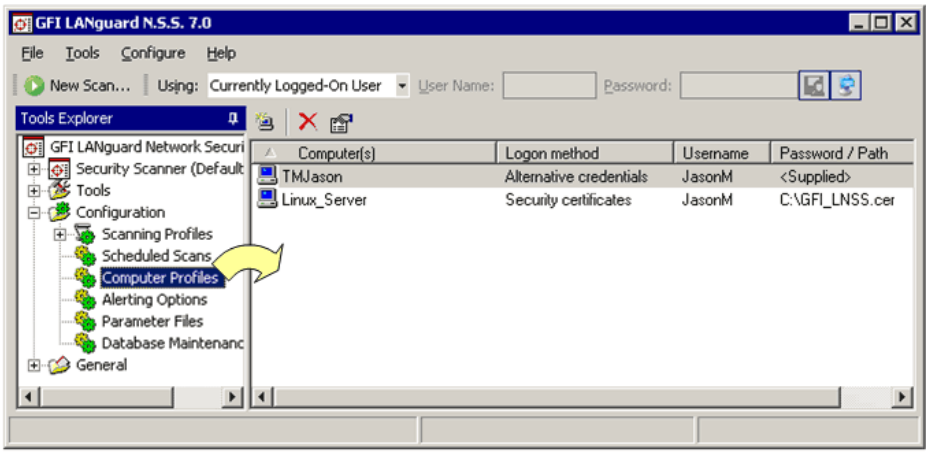
2. In the **General** tab which opens by default, specify the target computer name.

3. Click on the **Logon Credentials** tab.

4. Select the required authentication method and specify the respective logon credentials.

5. Click on **OK** to save your settings.

Changing the properties of a computer profile



Screenshot 53 - List of existing computer profiles

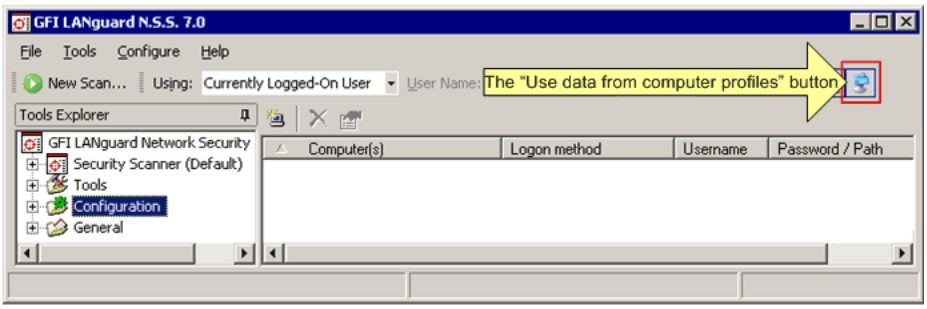
To change the properties of an existing computer profile:

1. Click on the **Configuration ▸ Computer Profiles** sub-node.

2. Right click on the computer profile that you wish to configure and select **Properties**.

3. Make the required changes and click on **OK** to save your settings.

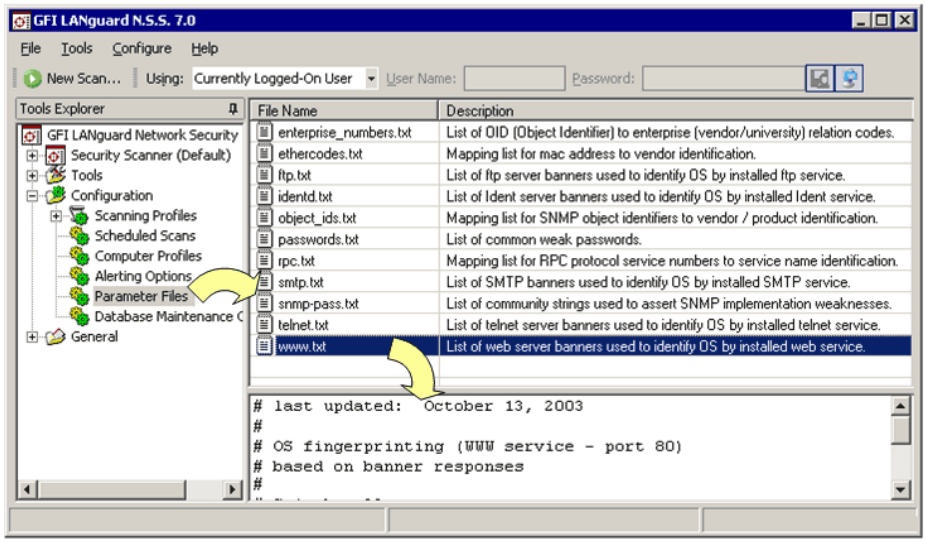
Using computer profiles in a scan



Screenshot 54 - The 'Use data from computer profiles' button

To use the credentials specified in the **Computer Profiles** node in a scan, click on the (‘Use data from computer profiles’ button) included in the GFI LANguard N.S.S. tool bar.

Parameter files



Screenshot 55 - List of Parameter Files

Use the **Configuration ▸ Parameter Files** sub-node to access and edit the various text based parameter files that GFI LANguard N.S.S. uses for target computer scanning.

NOTE: Only advanced users should modify these files. If these files are modified in an incorrect way, they will affect the functionality and reliability of the GFI LANguard N.S.S. target discovery process.

The following is a list of the parameter files that can be accessed and modified through the **Parameter Files** node:

- **Enterprise_numbers.txt** – This file contains a list of the OIDs (Object Identifiers) and the associated enterprise (vendor/university) relation codes. During target scanning, GFI LANguard N.S.S. will first query the '*object_ids.txt'* file for information on the discovered network device. If this information is not available, GFI LANguard N.S.S. will then reference the *'Enterprise_numbers.txt'* file and will attempt to identify the product manufacturer through the vendor specific information (retrieved from the target device). The vendor information is based on SMI Network Management Private Enterprise Codes, which can be found on: http://www.iana.org/assignments/enterprise-numbers.
- **Ethercodes.txt** - This file contains a list of Mac addresses together with their associated vendor(s).
- **Ftp.txt** – This file contains a list of FTP server banners through which GFI LANguard N.S.S. can identify the OS of a target computer i.e. GFI LANguard N.S.S. can identify the type of OS running on a target computer, by analyzing the installed FTP server.
- **Identd.txt** – This file contains 'identd' protocol banners through which GFI LANguard N.S.S. can identify the OS running on a target computer. i.e. GFI LANguard N.S.S. can identify an OS through the banner information.
- **Object_ids.txt** – This file contains the SNMP object_ids as well as the associated vendor(s) and product(s). When a device responds to an SNMP query, GFI LANguard N.S.S. will compare the Object ID information (sent by the target computer) to the OID information stored in this file.
- **Passwords.txt** – This file has a list of passwords which are used to check target computers for weak passwords (i.e. to perform dictionary attacks).
- **Rpc.txt** – This file contains the list of RPC protocol service numbers together with the associated service name identification. When RPC services are found running on a UNIX/Linux based target computer, GFI LANguard compares the RPC information received to the information listed in this file. In this way it can identify and verify the associated service name identification.
- **Smtp.txt** – This file contains a list of SMTP banners together with the associated Operating Systems. As with 'FTP' and 'identd' files, these banners are used by GFI LANguard N.S.S. to identify the OS that is running on the target computer.
- **Snmp-pass.txt** – This file contains a list of popular community strings. GFI LANguard N.S.S. uses these community strings to assert and identify SNMP weaknesses on a target computer. During target probing, the scanning engine will check if any of the community strings listed in this file are being used by the SNMP target server. Should it be the case, these community strings will be reported by the SNMP scanning tool in the scan results.
- **Telnet.txt** – This file contains a list of different telnet server banners. GFI LANguard N.S.S. will use these telnet banners to identify which OS is running on a target computer.

- **Www.txt** – This file contains a list of different web server banners. GFI LANguard N.S.S. will use these web server banners to identify which OS is running on a target computer.

Database Maintenance Options

Introduction

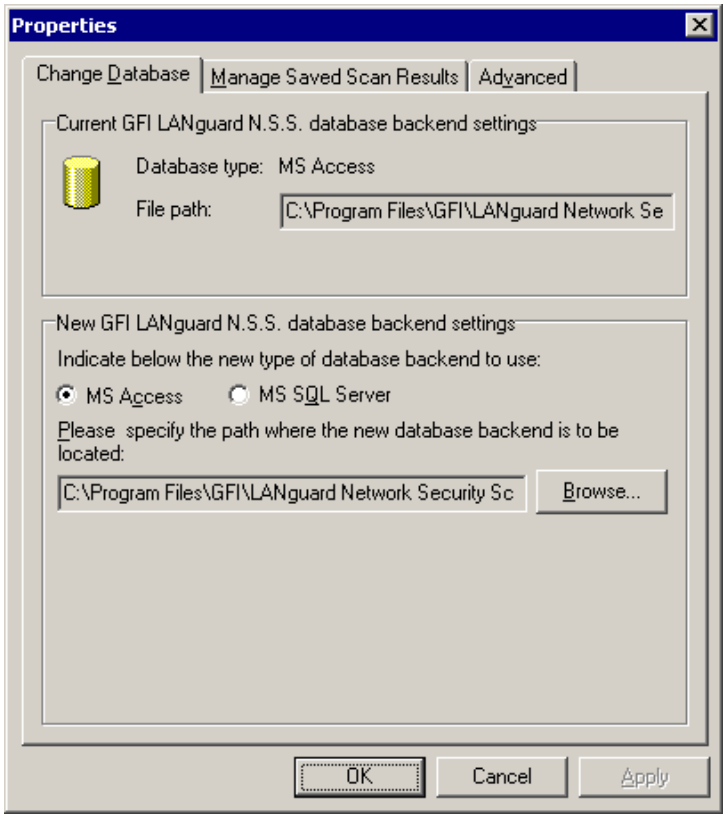
Use the **Configuration ▸ Database Maintenance Options** node to select and configure the GFI LANguard N.S.S. database backend. The database backend is used to store the results of network security scans.

From the **Database Maintenance Options** node, you can also configure the database backend maintenance features. For example, you can configure GFI LANguard N.S.S. to automatically delete scan results which are older than a particular age.

If you are using a Microsoft Access database backend, you can also schedule database compaction. Compaction allows you to repair any corrupted data and to delete database records marked for deletion in your database backend.

Configuring your database backend

To configure the database maintenance options, right-click on the **Configuration ▸ Database Maintenance Options** node and select **Properties**. This will bring up the database maintenance properties dialog.



Screenshot 56 - The database maintenance properties dialog

The options included in this dialog are accessible through three tabs. These are the:

- **Change Database** tab
- **Manage Saved Scan Results** tab
- **Advanced** tab.

Selecting your database backend

Use the **Change Database** tab to specify which database backend will be used to store the saved scan results. Supported database backends include *Microsoft Access* and *Microsoft SQL Server 2000 or higher*.

Storing scan results in an Microsoft Access database backend

To store scan results in an Microsoft Access database:

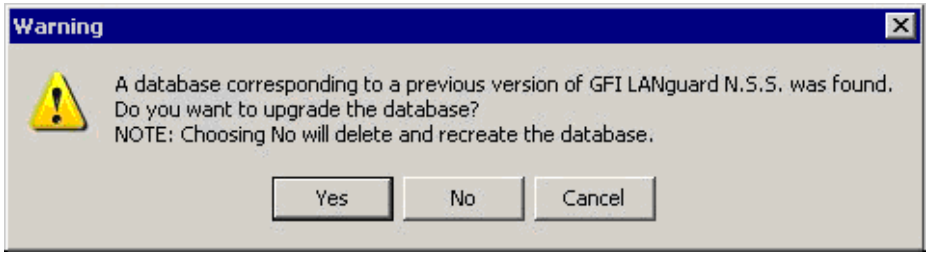
1. Right click on the **Configuration ▸ Database Maintenance Options** node and select **Properties**.

2. Select the *'Microsoft Access'* option

3 Specify the full path (including the file name) of your Microsoft Access database backend.

NOTE 1: If the specified database file does not exist it will be created for you.

NOTE 2: If the specified database file already exists and belongs to a previous version of GFI LANguard N.S.S. the following message is displayed.



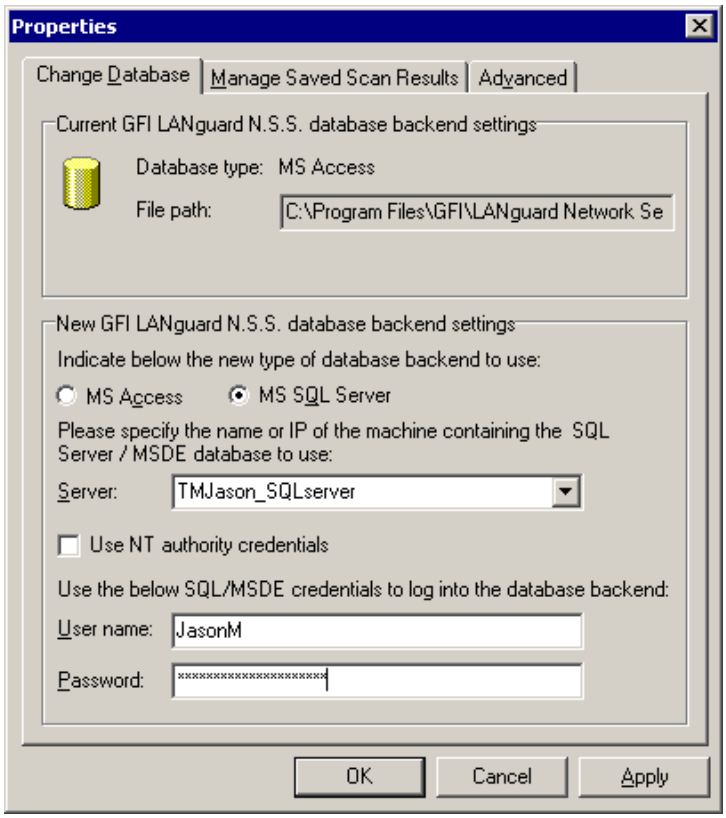
Screenshot 57 - Database backend upgrade dialog

Click on **Yes** to upgrade the existing scan results database to GFI LANguard N.S.S. 7.0.

Click on **No** to overwrite the existing database.

4. Click on the **OK** button to save your settings.

Storing scan results in an Microsoft SQL Server database backend



Screenshot 58 - Microsoft SQL Server database backend options

To store scan results in an Microsoft SQL Server database:

1. Right click on the **Configuration ▸ Database Maintenance Options** node and select **Properties**.

2. Select the *'Microsoft SQL Server'* option.

3. Select the SQL Server that will be hosting the database from the provided list of servers discovered on your network.

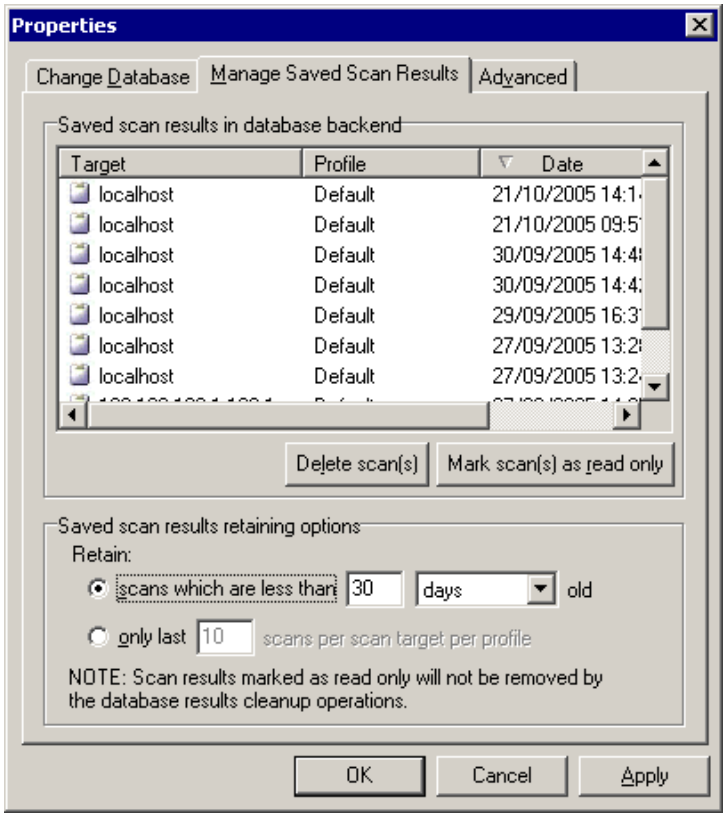
4. Specify the SQL Server credentials or select the *'Use NT authority credentials*' option to authenticate to the SQL server using windows account details.

5. Click on **OK** to save your settings.

NOTE 1: If the specified server and credentials are correct, GFI LANguard N.S.S. will automatically log on to your SQL Server and create the necessary database tables. If the database tables already exist it will re-use them.

NOTE 2: When using NT authority credentials, make sure that GFI LANguard N.S.S. services are running under an account which has both access and administrative privileges on the SQL Server databases.

Database maintenance - manage saved scan results



Screenshot 59 - Database maintenance properties: Managed saved scan results tab

Use the **Manage Saved Scan Results** tab to maintain your database backend and delete saved scan results which are no longer required. Deletion of non-required saved scan results can be achieved manually as well as automatically through scheduled database maintenance.

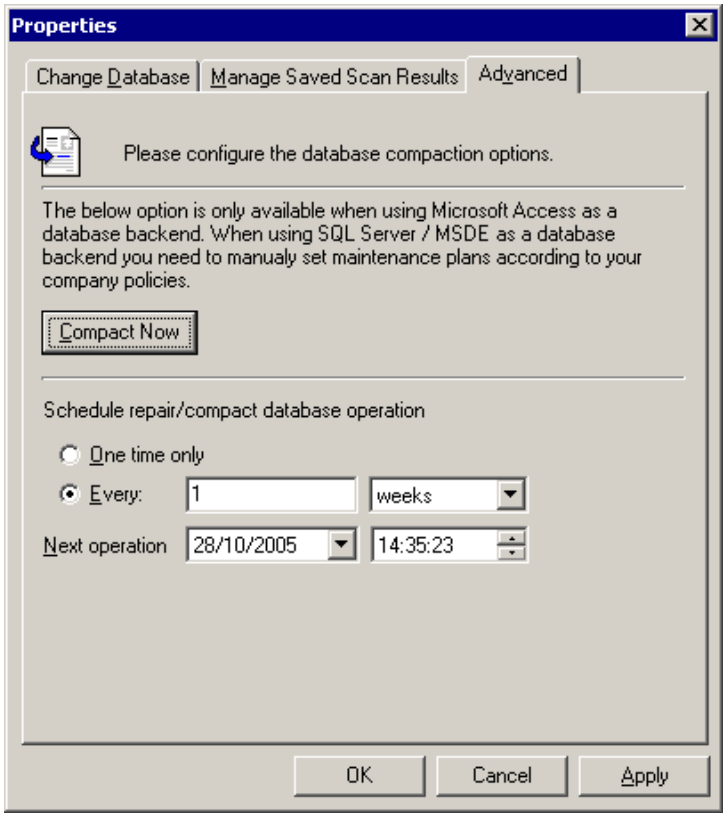
During scheduled database maintenance GFI LANguard N.S.S. automatically deletes saved scan results which are older than a specific number of days/weeks or months. You can also configure automated database maintenance to retain only a specific number of recent scan results for every scan target and scan profile.

To manually delete saved scan results, select the particular result(s) and click on the **Delete Scan(s)** button.

To let GFI LANguard N.S.S. manage database maintenance for you, select one of the following options:

- *'Scans which are less than'* – Select this option to automatically delete scan results which are older than a specific number of days/weeks or months.
- *'Only last'* – Select this option to retain only a specific number of recent scan results.

Database maintenance - advanced options



Screenshot 60 - Database Maintenance properties: Advanced tab

Use the **Advanced** tab to compact and repair an Microsoft Access based database backend.

One of the most important things you can do to improve your database's performance is to regularly repair and compact it. During compaction the database files are reorganized and records that have been marked for deletion are removed. In this way you can regain precious storage space.

During the compaction process, GFI LANguard N.S.S. also repairs corrupted database backend files. Corruption may occur for various reasons. In most cases, a Microsoft Access database gets corrupted when the database is unexpectedly closed before records are saved (for example, due to a power failure, hung up processes, forced reboots, etc.).

Through the **Advanced** tab, you can:

- Manually repair and compact a Microsoft Access database backend by clicking on the **Compact Now** button.
- Automate and schedule compaction of the Microsoft Access database backend. In this way, the GFI LANguard attendant service will automatically handle the compaction process for you.

Through the options provided in the **Advanced** tab, you can specify the frequency at which the scheduled database compaction will take place.

To compact your Microsoft Access database backend once, select the *'One time only'* option.

To compact your database backend on regular basis (i.e. periodically), select the *'Every'* option and specify:

1. The frequency in days/weeks or months at which the compact and repair operations will be executed on your database backend.

2. The date and time when the first/next compaction session will take place.

Scanning Profiles

Introduction

Scanning profiles are configurable templates which determine the vulnerability tests that will be run against the target computers as well as the data that will be retrieved from scanned targets during a security audit.

GFI LANguard N.S.S. ships with a default list of scanning profiles which you can use to perform different scans on your network and retrieve various information without having to make configuration changes. The number of tests performed by each scanning profile varies according to the network vulnerability area which must be checked for weaknesses.

For example, you can have scanning profiles that run a number of vulnerability checks which cover various/extensive areas of your network (for example, the 'Default' scanning profile) as well as 'specialized' scanning profiles which run vulnerability checks and report only weaknesses related to a specific area of your network (for example, such as the Trojan Ports scanning profile which scans only for open ports which are commonly exploited by hackers and Trojan applications).

The list of default scanning profiles is accessible by expanding the **Configuration ▸ Scanning profiles** node. Out of the box, GFI LANguard N.S.S. includes an extensive list of different scanning profiles, some of which are listed below:

- **Default**: Use this scanning profile to retrieve various pieces of information as well as perform a balanced varied set of security vulnerability tests on your target computer(s). The information retrieved from the target(s) includes: Commonly exploited open ports, installed applications, installed security applications and status of signature files, OS data, users and groups, network devices, missing patch and service packs, USB devices, shares, time of day, sessions, audit policies and running services.
- **CGI scanning**: Use this scanning profile to retrieve OS information and perform security tests which are directly relevant to Web Servers.
- **Full TCP and UDP port scan**: Use this scanning profile to perform a full TCP and UDP open port scan on the target(s). All ports from 0-65535 are checked and queried during the scanning process.
- **Missing patches**: Use this scanning profile to check the target(s) for missing security updates and service packs.
- **Ping them all**: Use this scanning profile to check which target(s) in the specified range are turned on.

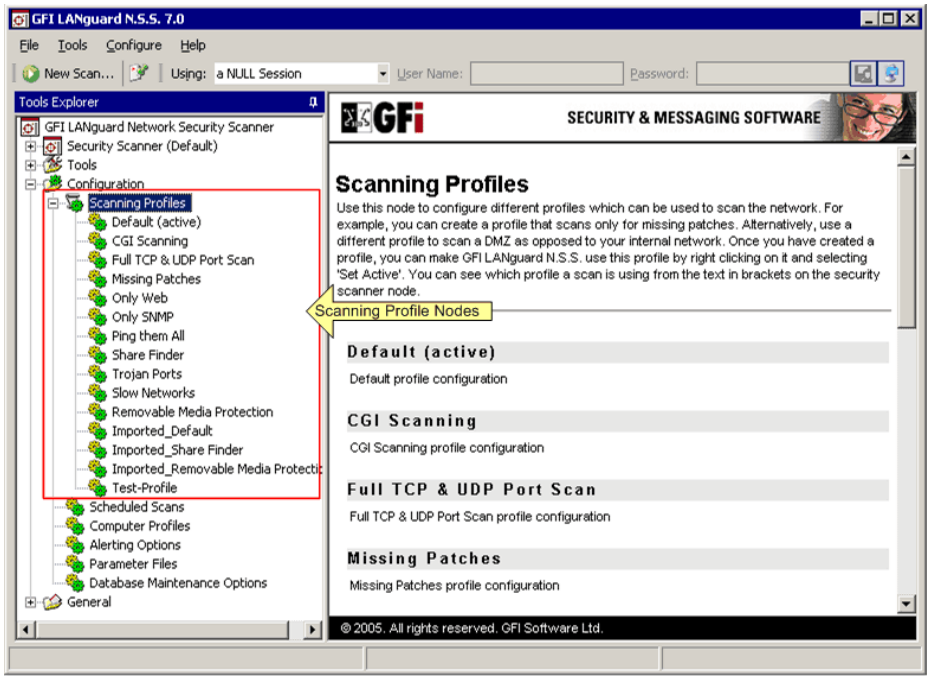
- **Share finder**: Use this scanning profile to check which shares are open on the target(s) as well as retrieve any properties related to these shares.
- **Removable media protection**: Use this scanning profile to check which removable media devices are connected to the target computer(s).
- **Applications**: Use this scanning profile to check which applications are installed on the target computer(s).
- Other options are also available.

The selection of a scanning profile for a security scan is generally dictated by the:

1. Type of tests to be performed and the data retrieval operations you want to run against your target(s).

2. Time you have to generate these reports.

WARNING: The more vulnerability checks you want to run, the more time will be consumed to complete the security audit scan.



Screenshot 61 - The Scanning Profiles node

The default set of scanning profiles is fully customizable. You can also create new custom scanning profiles which suite your network layout as well as your scanning needs. For example, you may want to create a scanning profile that is set to be used when scanning the computers in your DMZ as opposed to your internal network.

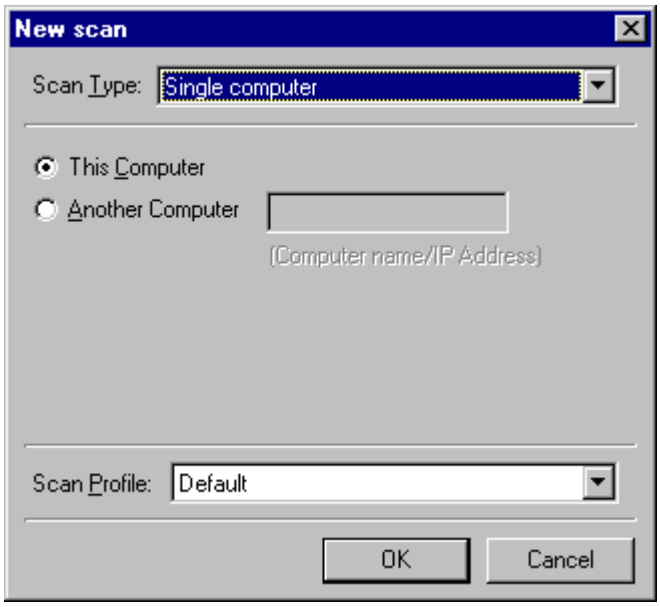
Through the use of multiple scanning profiles you can perform various network security audits without having to go through a reconfiguration process for every type of security scan required. This is possible by creating different preconfigured scanning profiles which suite specifically the security scanning needs of your IT infrastructure and which can be individually utilized in different network scanning sessions.

Use scanning profiles to your advantage as they allow you to perform specialized tests and queries (for example, enumerate only the installed applications) on your networks saving you time when less more specialized information is needed while at the same time allowing you to perform tests which take lots of time under different conditions (for example, full TCP/UDP port scans).

Scanning profiles in action

Scanning your local computer with the 'Default Scanning Profile'

1. Go on **File ▸ New ▸ Scan single computer…**
2. Select the *'This computer'* option.



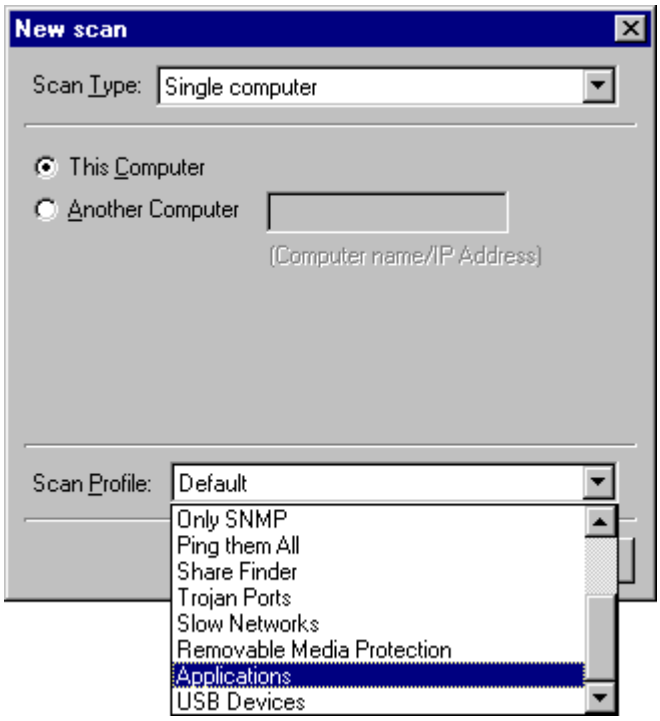
Screenshot 62 - New Scan dialog

3. Set the value of the 'Scan Profile' combo box to *'Default'*.
4. Click on **OK** to start the scan.

TIP: Take note of the time it takes to complete the scan as well as the information range it returns.

Scanning your local computer with the 'Applications Scanning Profile'

1. Go on **File ▸ New ▸ Scan single computer…**
2. Select the *'This computer'* option.



Screenshot 63 - New Scan Dialog: Selecting the 'Applications' vulnerability scanning profile

3. Set the value of the 'Scan Profile' combo box to *'Applications '*.

4. Click on **OK** to start the scan.

As you can see the time it takes to complete a vulnerability scan using the 'Applications' scanning profile is considerably less than that of the 'Default' scanning profile previously performed. This is because the 'Applications' scanning profile only performs specific vulnerability checks which analyze and report the applications that are installed on the scanned target computers. Hence no other unrelated vulnerability checks are run against the target(s) and no extra data is retrieved from the target computer(s).

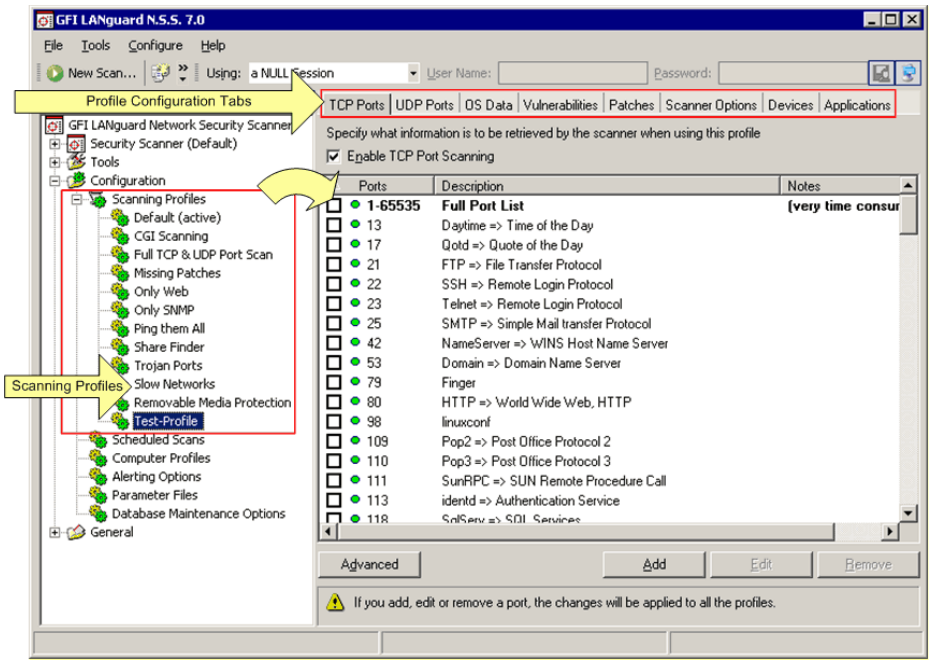
On the other hand, the 'Default' scanning profile is more generic and performs vulnerability checks on almost all vulnerable areas of your network. Hence it takes more time to complete the scan as well as more information is retrieved from the scanned targets and reported in the scan results.

Creating a new scanning profile

To create a new scanning profile:

1. Right click on the **Configuration ▸ Scanning profiles** node and select **New ▸ Scan Profile…**

2. Specify the name of the new profile in the dialog on display.



Screenshot 64 - The Scanning Profile configuration page

3. Click on the **OK** button.

In the right pane of the configuration interface, you will now be presented with a tabbed interface through which you can configure the operational parameters for this new scanning profile. The tabs displayed at the top of the scanning profile configuration page are listed below:

- **TCP ports** tab - Use the options in this tab to enable TCP port scanning and to specify which TCP ports are to be checked.
- **UDP ports** tab - Use the options in this tab to enable UDP port scanning and to specify which UDP ports are to be checked.
- **OS data** tab - Use the options in this tab to specify which operating system data is to be retrieved from the target(s).
- **Vulnerabilities** tab - Use the options in this tab to enable vulnerability scanning and to specify which vulnerability checks will be run on the target(s).
- **Patches** tab - Use the options in this tab to enable scanning for missing patches and to specify which missing security updates will be checked on the target(s).
- **Scanner properties** tab - Use the options in this tab to configure the scanning engine's operational and target discovery parameters (for example, timeout values, query methods etc.).
- **Devices** - Use the options in this tab to enable scanning for attached devices and to specify which installed network and USB devices are authorized/unauthorized.
- **Applications** - Use the options in this tab to enable installed application scanning and specify which installed applications are authorized/unauthorized.

Customizing a scanning profile

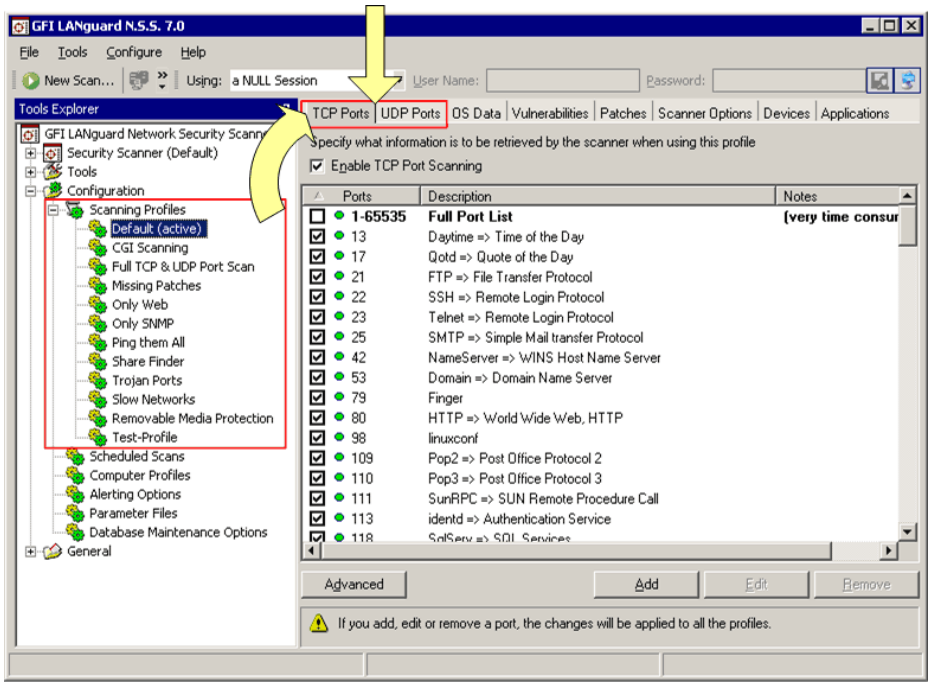
To customize a scanning profile:

1. Expand the **Configuration ▸ Scanning Profiles** node.

2. Select the scanning profile to be edited.

3. From the right pane, use the tabs at the top of the page to access the required configuration page(s) and make the necessary parameter changes. The changes will become effective in the next new scan.

Configuring TCP/UDP ports scanning options



Screenshot 65 - Scanning Profiles properties: TCP Ports tab options

Enabling/disabling TCP Port scanning

To enable TCP Port Scanning in a particular scanning profile,

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **TCP Ports** tab.

3. Select the check box next to the *'Enable TCP Port Scanning'* option.

NOTE: TCP Port scanning is configurable on a scan profile by scan profile basis. If in a particular profile this option is not selected, no open TCP port tests will be performed in the security audits carried out by this scanning profile.

Enabling/disabling UDP Port scanning

To enable UDP Port Scanning in a particular scanning profile,

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. Click on the **UDP Ports** tab.

3. Select the check box next to the *'Enable UDP Port Scanning'* option.

NOTE: UDP Port scanning is configurable on a scan profile by scan profile basis. If in a particular profile this option is not selected, no open UDP port tests will be performed in the security audits carried out by this scanning profile.

Customizing the list of TCP/UDP ports to be scanned

To specify which TCP/UDP ports will be enumerated and processed by a scanning profile during a security audit:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **TCP Ports** or **UDP Ports** tab accordingly.

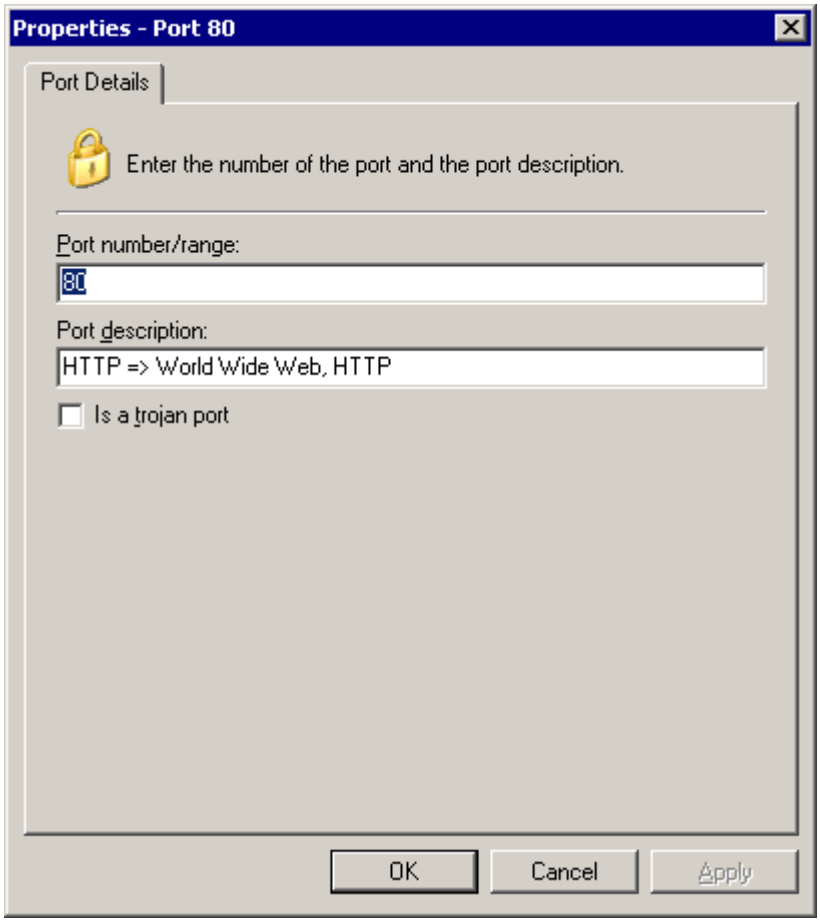
3. Select the check box of the TCP/UDP ports that will be checked by this scanning profile.

Adding a new TCP/UDP port to the list

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **TCP Ports** or **UDP Ports** tabs accordingly.

3. Click on the **Add** button. This will bring up the Add Port dialog.



Screenshot 66 - Add Port dialog

4. Specify the port number or port range (for example, '80-200') and a suitable port description.

NOTE: Always include specified port ranges within single (') quotes (for example, '80-200').

5. If the application associated with this port is a Trojan program, select the '*Is a Trojan port'* option.

How to edit or remove a port

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

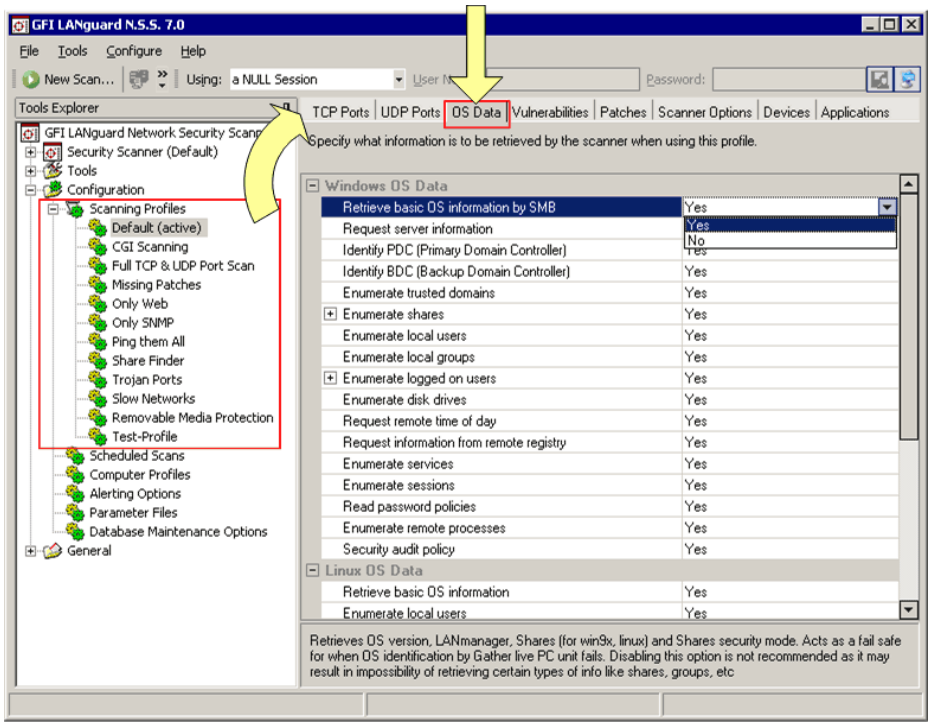
2. From the right pane, click on the **TCP Ports** or **UDP Ports** tab accordingly.

3. Select the port that you wish to edit or remove.

4. Click on the **Edit** or **Remove** buttons accordingly.

NOTE: When a port is removed, it will be deleted from ALL of the scan profiles. If you want to stop GFI LANguard N.S.S. from checking for its presence only, unselect the check box next to it.

Configuring OS data retrieval options



Screenshot 67 - Scanning Profiles properties: OS Data tab options

Use the **OS Data** tab to specify which OS information will be collected from a target computer during security scanning. GFI LANguard N.S.S. can retrieve operating system data from both Windows and Linux based target computers.

Customizing OS Data Retrieval parameters

To specify which OS Data will be enumerated and processed by a scanning profile during a security audit:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

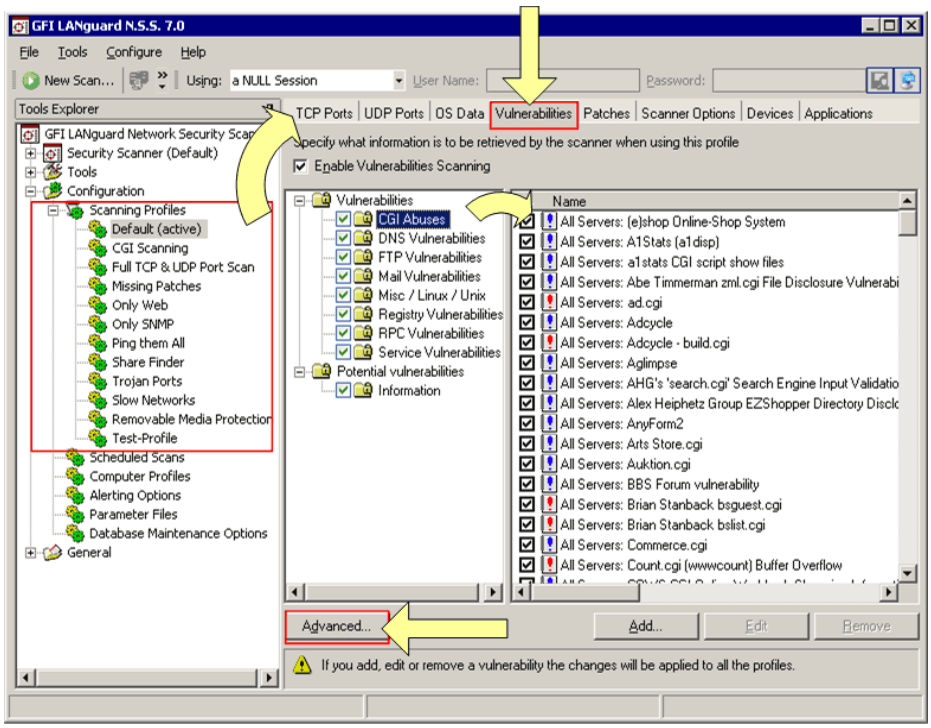
2. From the right pane, click on the **OS Data** tab.

3. Expand the *'Windows OS Data' group and 'Linux OS Data'* group accordingly.

4. Specify which Windows/Linux OS information is to be retrieved by the security scanner from the target operating systems.

For example, if you want to exclude administrative shares from scan results, expand set the *'Enumerate shares'* option and set the 'Display admin shares' option to *'No'.*

Configuring vulnerabilities scanning options



Screenshot 68 - Scanning Profiles properties: Vulnerabilities tab options

Use the **Vulnerabilities** tab to specify which vulnerabilities will be investigated during target computer scanning. By default, GFI LANguard N.S.S. ships with a pre-defined list of vulnerability checks. You can customize and select which checks are to be performed during a security audit on a scan profile by scan profile basis. You can also add your own custom vulnerability checks to suit your network's security scanning requirements.

Enabling/disabling vulnerability scanning

To enable vulnerability scanning in a particular scanning profile,

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Vulnerabilities** tab.

3. Select the check box next to the *'Enable Vulnerability Scanning'* option.

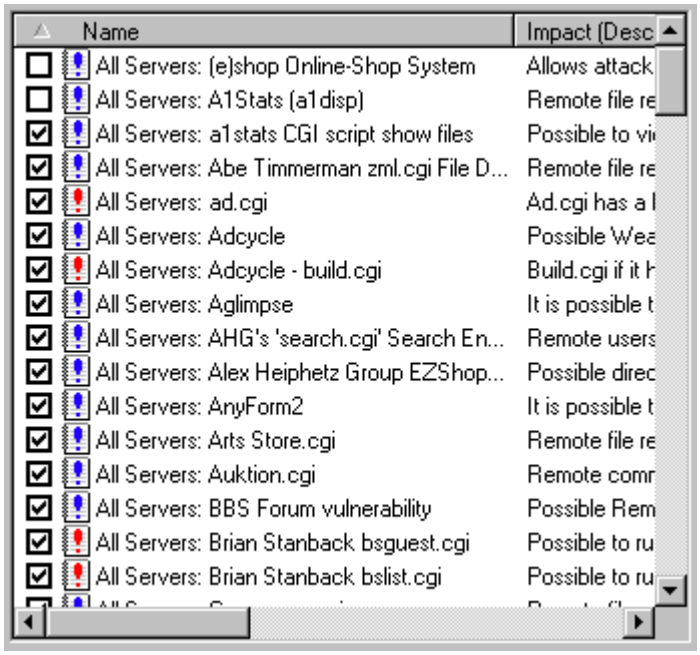
NOTE: Vulnerability scanning is configurable on a scan profile by scan profile basis. If in a particular profile this option is not selected, no vulnerability tests will be performed in the security audits carried out by this scanning profile.

Customizing the list of vulnerabilities to be scanned

To specify which vulnerabilities will be enumerated and processed by a scanning profile during a security audit:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Vulnerabilities** tab.

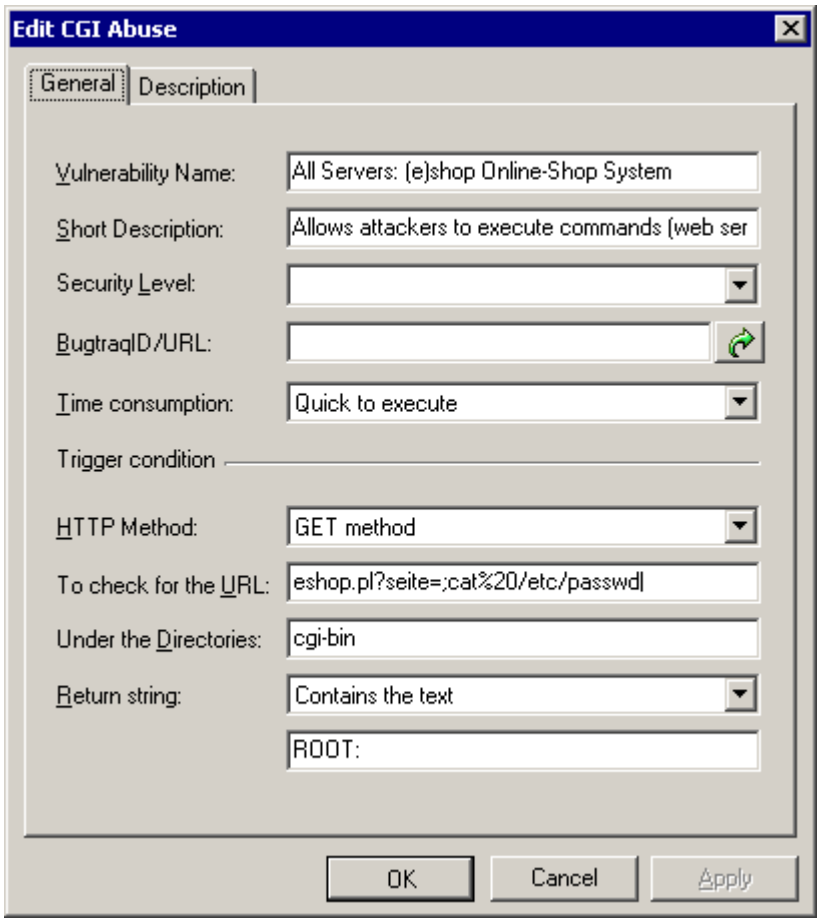


Screenshot 69 - Select the vulnerability checks to be run by this scanning profile

3. Select the check box next to the vulnerability tests that you wish to run through this scanning profile.

Customizing the properties of vulnerability checks

All the checks listed in the **Vulnerabilities** tab have specific properties which determine when the check is triggered and what details will be enumerated during a scan.



Screenshot 70 - Vulnerability properties dialog: General tab

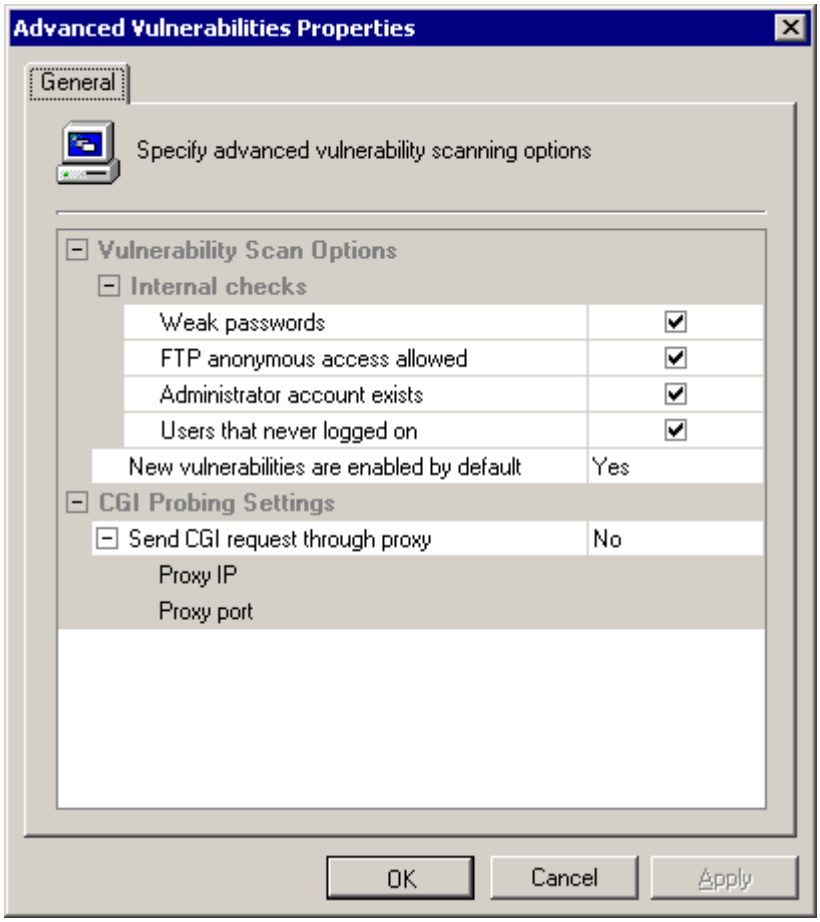
Vulnerability check properties include:

- Vulnerability name and short description.
- Security Level associated with the vulnerability.
- BugtraqID/URL to relevant information.
- Time consumed by the respective vulnerability check during scanning.
- Vulnerability check trigger conditions (for example, HTTP method, the Return string).

To change the properties of a vulnerability check:

1. Right click on the vulnerability to customize and select **Properties**.
2. Make the required changes to the check properties.
3. Click on **OK** to save your settings.

Vulnerability checks - advanced options



Screenshot 71 - Advanced vulnerability scanning dialogs

Use the **Advanced** button included in the **Vulnerabilities** tab to bring up the advanced vulnerabilities scanning options. From these options you can:

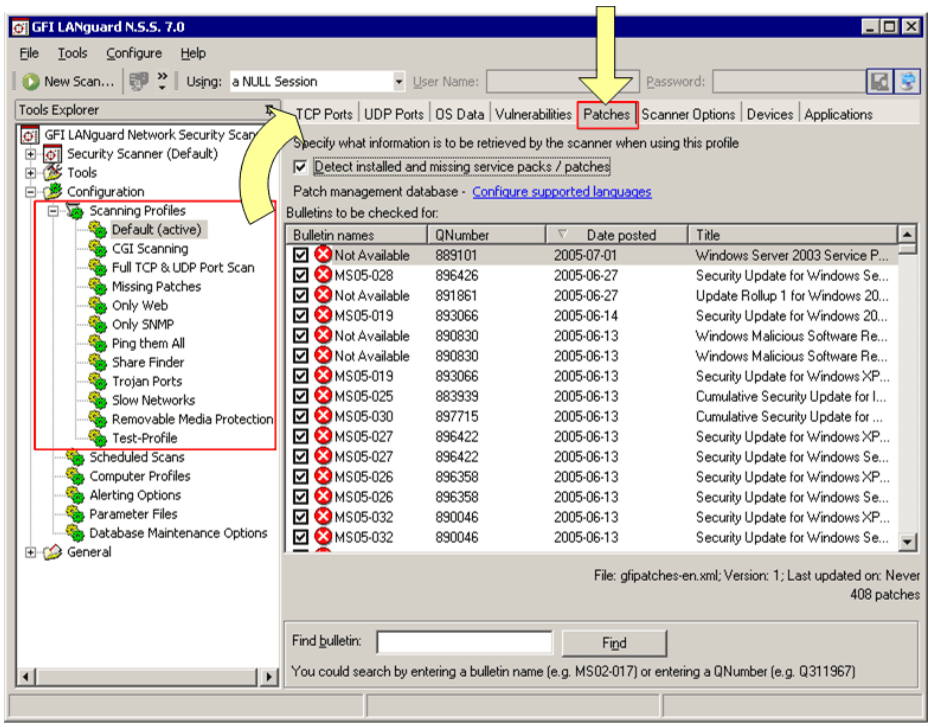
1. Configure extended vulnerability scanning features which check your target computers for weak passwords, anonymous FTP access, and unused user accounts.

2. Configure how GFI LANguard N.S.S. is to handle newly created vulnerability checks which you create. Specify whether to automatically include or exclude newly added vulnerability checks in the other scanning profiles.

3. Configure GFI LANguard N.S.S. to send CGI requests through a specific proxy server. This is mandatory when CGI requests will be sent from a computer which is behind a firewall to a target web server which is 'outside' the firewall (for example, Web servers which are on a DMZ). The firewall will generally block all the CGI requests which are directly sent by GFI LANguard N.S.S. to a target computer which is in front of the firewall. To avoid this, set the *'Send CGI requests through proxy'* option to 'Yes' and specify the name/IP address of your proxy server and the communication port which be used to convey the CGI request to the target.

Configuring patch scanning options

Customizing the missing patch scanning profile options



Screenshot 72 - Scanning Profiles properties: Patches tab options

Use the **Patches** tab to specify which security updates are to be checked for when scanning a target computer. The patches to be checked are selected from the complete list of available software updates which is included in this tab. This list is automatically updated whenever GFI releases a new missing patch definition file update for GFI LANguard N.S.S.

From this tab you can also view the Bulletin information of each software update in the list. To access this information, right-click on the respective patch and select **Properties**.

Enabling/disabling missing patch detection checks

To enable missing patch detection checks in a particular scanning profile,

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Patches** tab.

3. Select the check box next to the *'Detect installed and missing service packs/patches'* option.

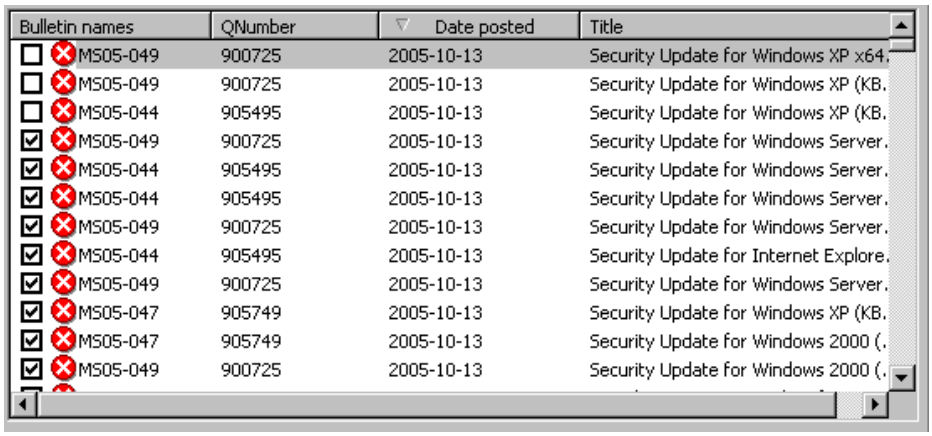
NOTE: Missing patch detection checks are configurable on a scan profile by scan profile basis. If in a particular profile this option is not selected, no missing patch detection checks will be performed in the security audits carried out by this scanning profile.

Customizing the list of software patches to be scanned

To specify which missing software patches will be enumerated and processed by a scanning profile during a security audit:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Patches** tab.

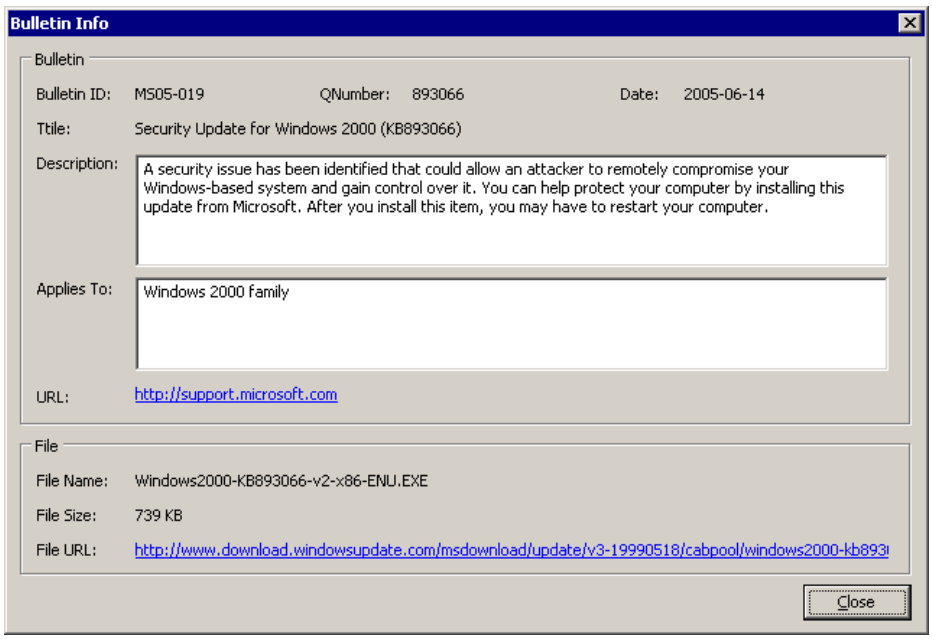


Bulletin names	QNumber	Date posted	Title
MS05-049	900725	2005-10-13	Security Update for Windows XP x64.
MS05-049	900725	2005-10-13	Security Update for Windows XP (KB.
MS05-044	905495	2005-10-13	Security Update for Windows XP (KB.
MS05-049	900725	2005-10-13	Security Update for Windows Server.
MS05-044	905495	2005-10-13	Security Update for Windows Server.
MS05-044	905495	2005-10-13	Security Update for Windows Server.
MS05-049	900725	2005-10-13	Security Update for Windows Server.
MS05-044	905495	2005-10-13	Security Update for Internet Explore.
MS05-049	900725	2005-10-13	Security Update for Windows Server.
MS05-047	905749	2005-10-13	Security Update for Windows XP (KB.
MS05-047	905749	2005-10-13	Security Update for Windows 2000 (.
MS05-049	900725	2005-10-13	Security Update for Windows 2000 (.

Screenshot 73 - Selecting the missing patches to be enumerated

3. Select/unselect the check box next to the missing patch checks that you wish to run through this scanning profile.

Using the search bulletin information facility



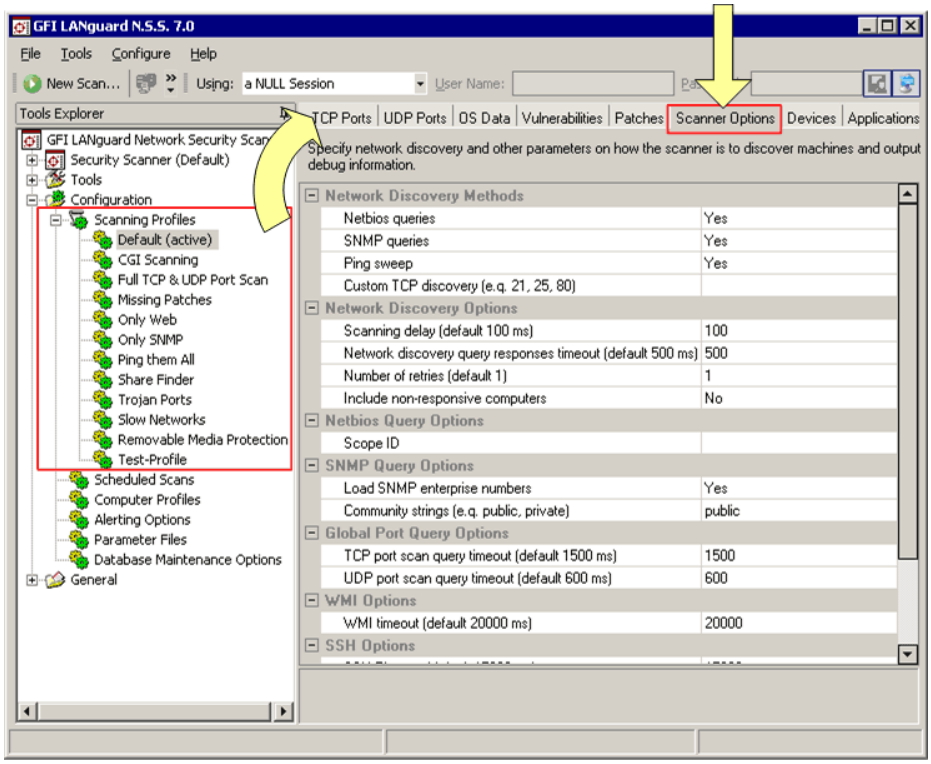
Screenshot 74 - Extended bulletin information

To search for a particular bulletin:

1. Specify the bulletin name (for example, MS02-017) or QNumber (for example, Q311987) in the search tool entry box included at the bottom of the right pane.

2. Click on **Find** to start searching for your entry.

Configuring the security scanning options



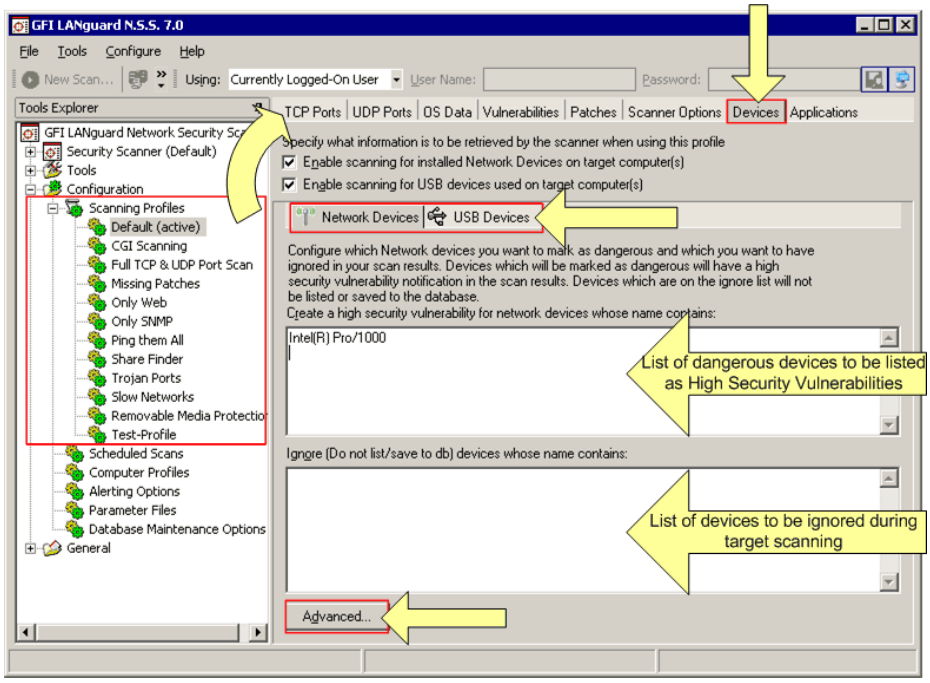
Screenshot 75 - Scanning Profiles properties: Scanner Options tab

Use the **Scanner Options** tab to configure the operational parameters of the security scanning engine. These parameters are configurable on a scan profile by scan profile basis and define how the scanning engine will perform target discovery and OS Data querying.

Configurable options include timeouts, types of queries to run during target discovery, SNMP scopes for queries and more.

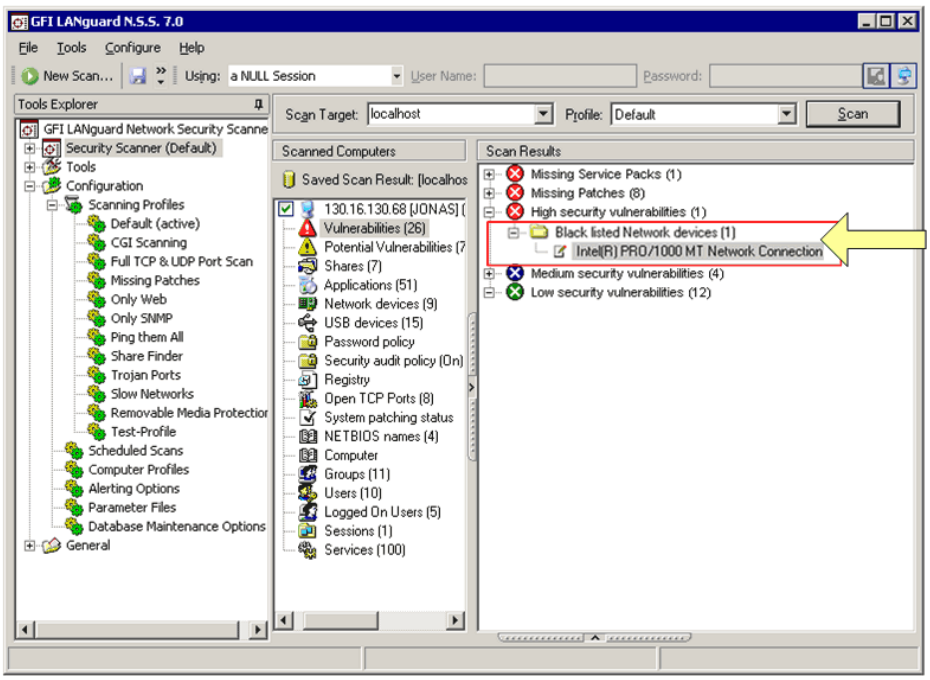
NOTE: Configure these parameters with extreme care! An incorrect configuration can effect the security scanning performance of GFI LANguard N.S.S.

Configuring the attached devices scanning options



Screenshot 76 - The Devices configuration page: Network Devices tab options

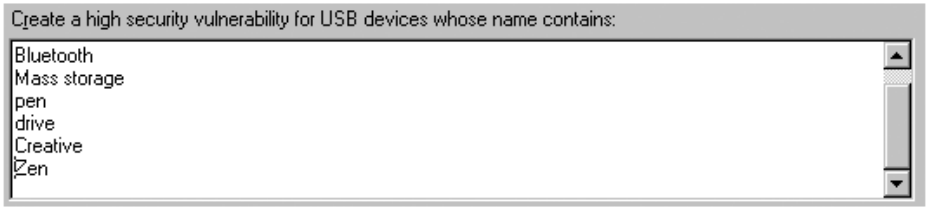
Use the **Devices** tab to enable the scanning and reporting of network and USB devices installed on your target computers.



Screenshot 77 - Dangerous network devices are listed as High Security Vulnerabilities

Together with device enumeration, you can further configure GFI LANguard N.S.S. to generate high security vulnerability alerts whenever particular USB and network hardware is detected. This is achieved by compiling a list of unauthorized/blacklisted network and USB devices which you wish to be alerted of.

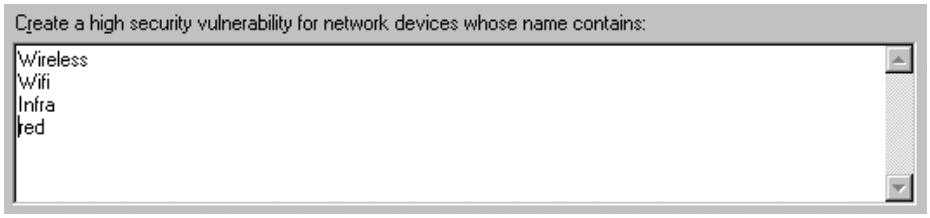
You can also configure GFI LANguard N.S.S. to exclude particular devices from the scan results which are considered as ‘safe’ such as USB keyboards. This is achieved by compiling a list of safe/white-listed devices which you would like the scanning engine to ignore during a security audit.



Screenshot 78 - List of unauthorized/blacklisted network devices

Network and USB device scanning is configurable on a scan profile by scan profile basis. Therefore you can customize your device audits by creating multiple scanning profiles with different unauthorized or safe devices lists.

For example, you can create a generic device-scanning profile which checks and enumerates all USB and network devices found connected to your targets. In this case, you do not need to specify any device in the unauthorized and ignore lists of your scanning profile. Similarly you can create a separate scanning profile which enumerates only Bluetooth dongles and wireless NIC cards connected to your target computers.



Screenshot 79 - List of unauthorized/blacklisted network devices

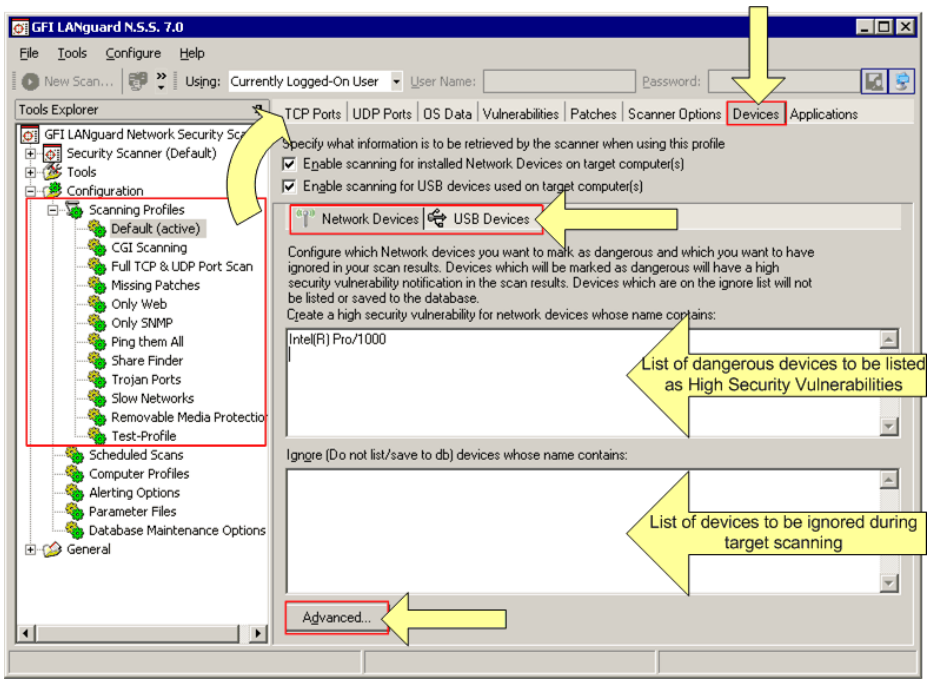
However, in this case you must specify ‘Bluetooth’ and ‘Wireless’ or ‘Wifi’ in the unauthorized network and USB lists of your scanning profile.

All the device scanning configuration options are accessible through the 2 sub-tabs contained in the devices configuration page. These are the **Network Devices** tab and the **USB Devices** tab.

Use the **Network Devices** sub-tab to configure the attached network devices scanning options and unauthorized/safe devices lists.

Use the **USB Devices** sub-tab to configure the attached USB devices scanning options and unauthorized/safe devices lists.

Scanning for attached network devices



Screenshot 80 - Device configuration page: Network Devices tab options

Enabling/disabling checks for installed network devices

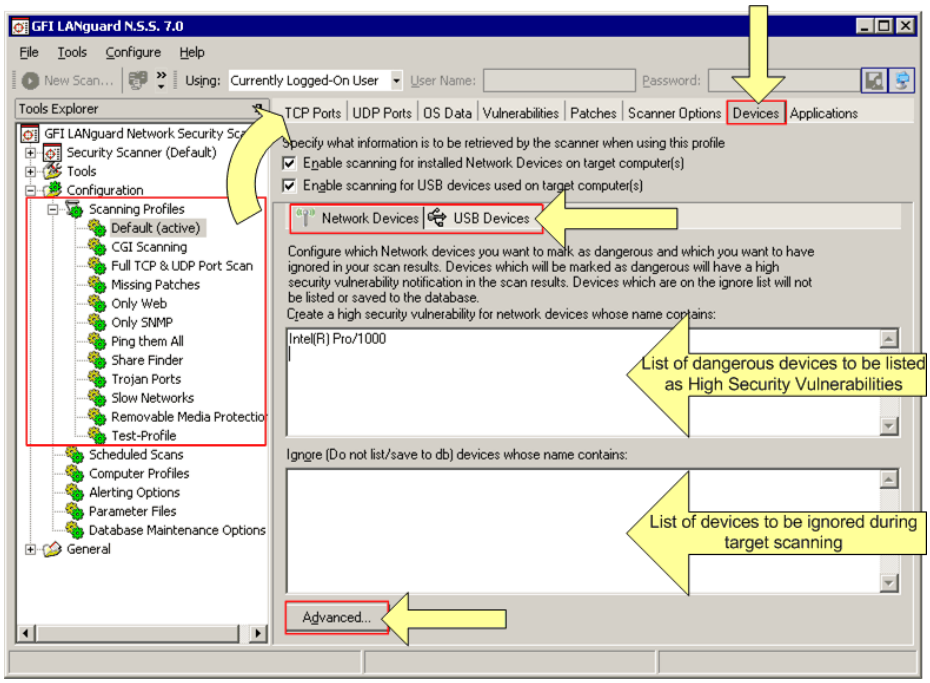
To enable scans for attached network devices in a particular scanning profile:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Devices** tab.

3. Select the check box next to the *'Enable Scanning for installed Network Devices on the target computer(s)'* option.

NOTE: Network device scanning is configurable on a scan profile by scan profile basis. If in a particular profile this option is not selected, no checks for installed network devices will be performed in the security audits carried out by this scanning profile.



Screenshot 81 - Devices configuration page: Unauthorized devices and Ignore devices lists

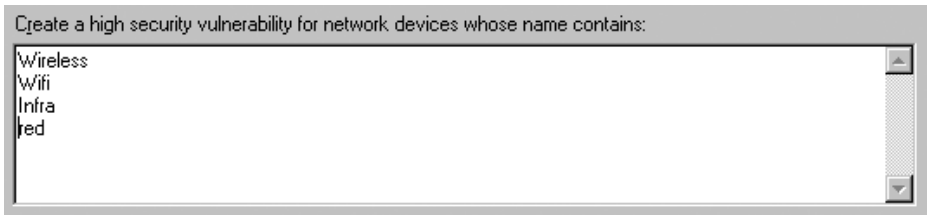
Compiling a list of unauthorized network devices

To compile a list of dangerous network devices:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Devices** tab.

3. Click on the **Network Devices** sub-tab.



Screenshot 82 - List of unauthorized/blacklisted network devices

4. In the list under 'Create a high security vulnerability for network devices whose name contains:' specify the names of the network devices that you wish to classify as high security vulnerabilities.

For example, if you enter the word "wireless" you will be notified through a high security vulnerability alert when a device whose name contains the word "wireless' is detected.

Compiling a list of safe network devices

To compile a list of safe network devices:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

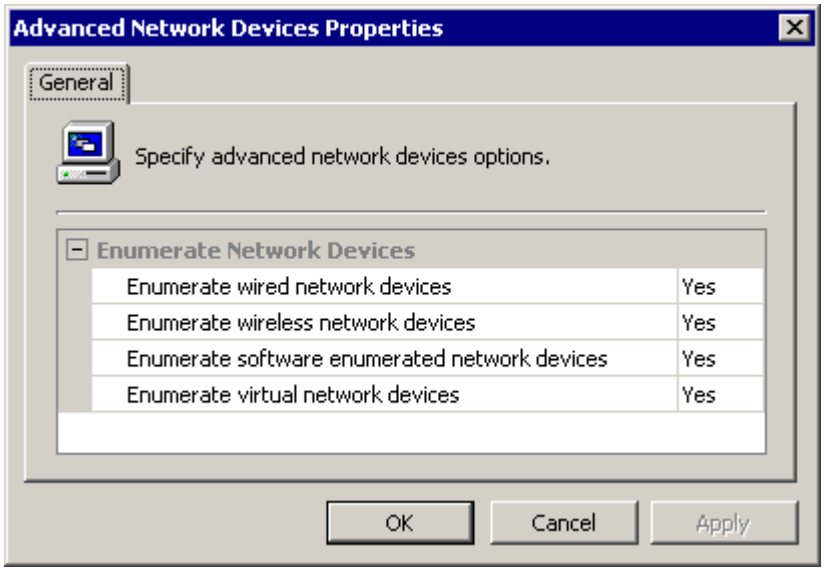
2. From the right pane, click on the **Devices** tab.

3. Click on the **Network Devices** sub-tab.

4. In the list under ‘Ignore devices (Do not list/save to db) whose name contains:’ specify the names of the safe network devices that you wish to exclude from the scan results.

NOTE: Include only one network device name per line.

Configuring advanced network device scanning options



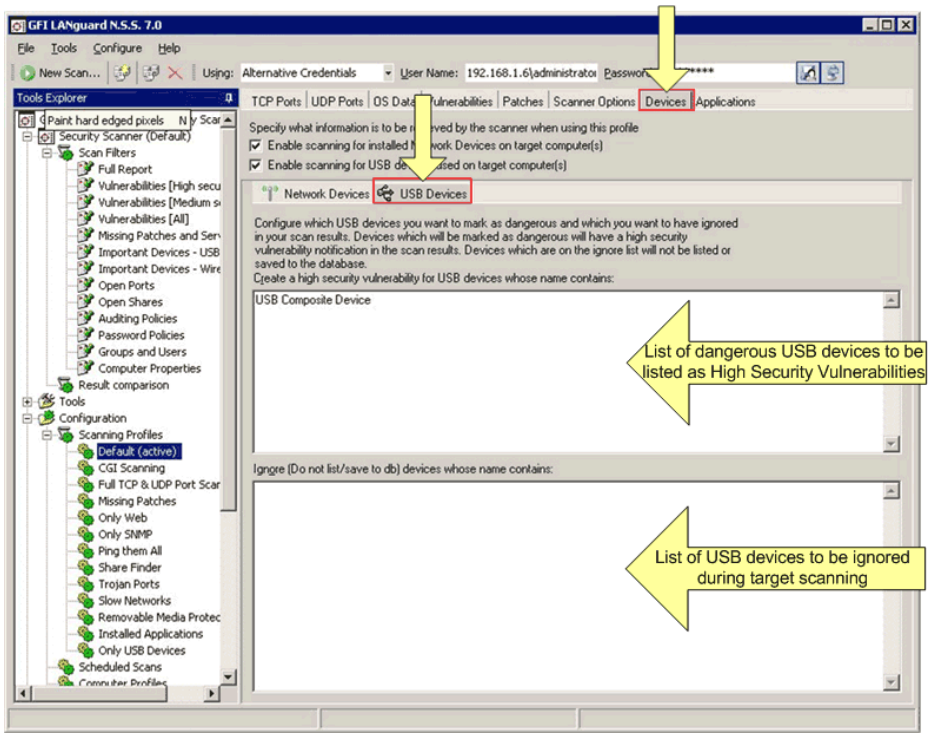
Screenshot 83 - Advanced network devices configuration dialog

From the **Devices** tab, you can also specify the type of network devices that will be checked by this scanning profile and reported in the scan results. These include: ‘wired network devices’, ‘wireless network devices’, ‘software enumerated network devices’ and ‘virtual network devices’.

To specify which network devices to enumerate in the scan results:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.
2. From the right pane, click on the **Devices** tab.
3. Click on the **Network Devices** sub-tab.
4. Click on the **Advanced** button at the bottom of the page.
5. Set the required options to *‘Yes’*.
6. Click on the **OK** button.

Scanning for USB devices



Screenshot 84 - Dangerous USB devices are listed as High Security Vulnerabilities

Enabling/disabling checks for attached USB devices

To enable scans for attached USB devices in a particular scanning profile:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Devices** tab.

3. Select the check box next to the *'Enable scanning for USB Devices installed on the target computer(s)'* option.

NOTE: USB device scanning is configurable on a scan profile by scan profile basis. If in a particular profile this option is not selected, no checks for attached USB devices will be performed in the security audits carried out by this scanning profile.

Compiling a list of unauthorized USB devices

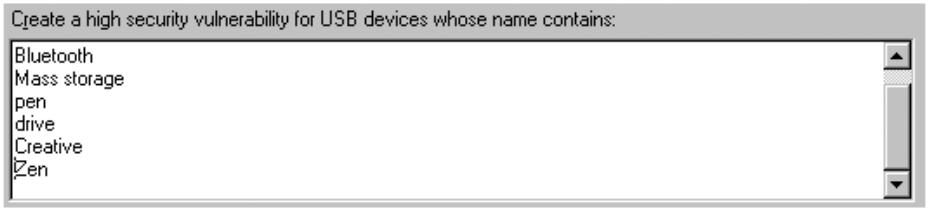
To compile a list of unauthorized/dangerous USB devices:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Devices** tab.

3. Click on the **USB Devices** sub-tab.

4. In the list under 'Create a high security vulnerability for USB devices whose name contains:' specify the names of the USB devices that you wish to classify as high security vulnerabilities.



Screenshot 85 - List of unauthorized/blacklisted USB devices

For example, if you enter the word "iPod" you will be notified through a high security vulnerability alert when a device whose name contains the word " iPod" is detected.

Compiling a list of safe USB devices

To compile a list of safe USB devices:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Devices** tab.

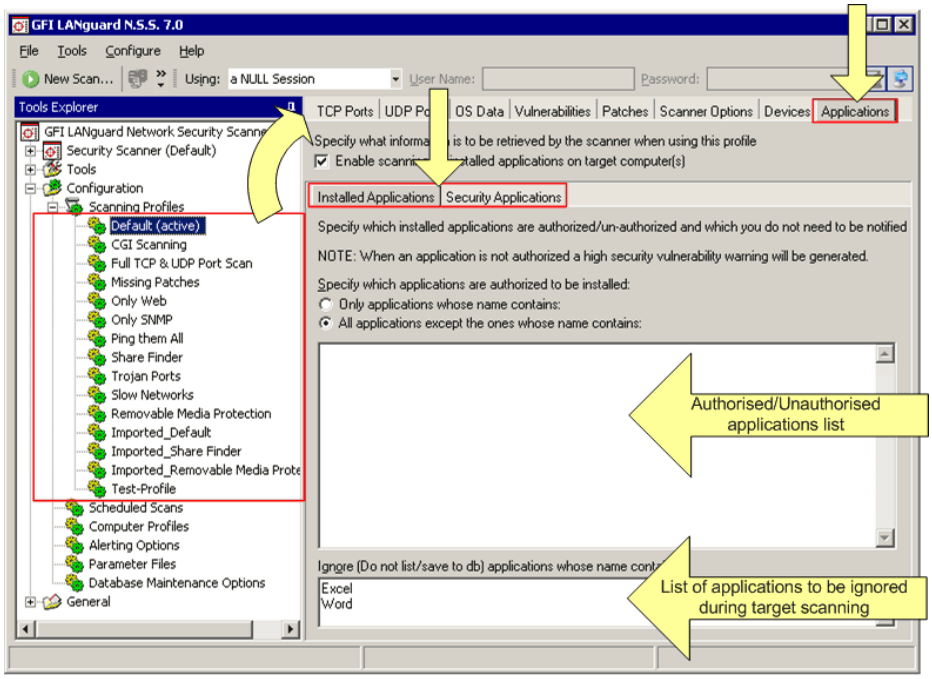
3. Click on the **USB Devices** sub-tab.

4. In the list under 'Ignore (Do not list/save to db) devices whose name contains:' specify the names of the safe USB devices (for example, USB mouse) that you wish to exclude from the scan results.

NOTE: Include only one USB device name per line.

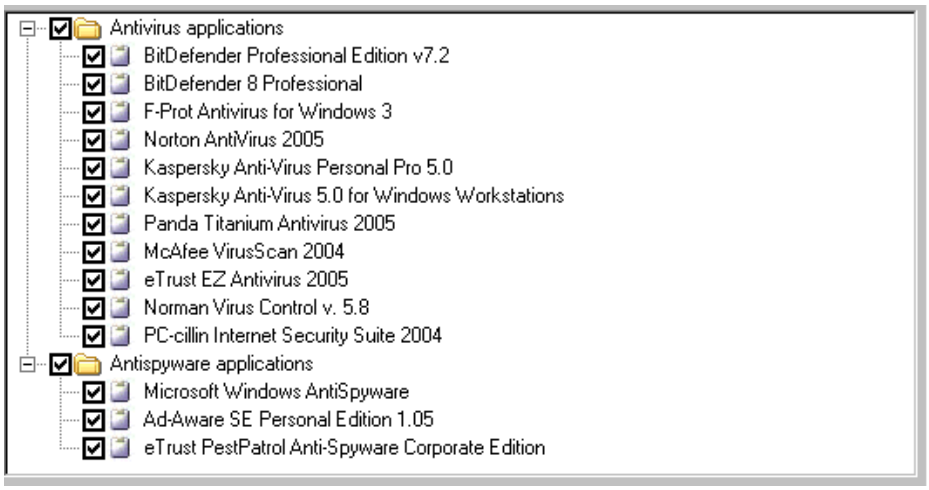
Configuring the applications scanning options

Use the **Applications** tab to specify which installed applications will be investigated by this scanning profile during a target computer scan.



Screenshot 86 - The applications configuration page

Through this tab, you can also configure GFI LANguard N.S.S. to detect and report 'unauthorized' or 'hot' software installed on scanned targets and to generate high security vulnerability alerts whenever such software is discovered.



Screenshot 87 - List of supported anti-virus and anti-spyware applications

By default, GFI LANguard N.S.S. also supports integration with particular security applications. These include various anti-virus and anti-spyware software. During security scanning, GFI LANguard N.S.S. will check if the supported virus scanner(s) or anti-spyware software is correctly configured and that the respective definition files are up to date.

Application scanning is configurable on a scan profile by scan profile basis and all the configuration options are accessible through the two sub-tabs contained in the applications configuration page. These are the **Installed Applications** sub-tab and the **Security Applications** sub-tab.

Enabling/disabling checks for installed applications

To enable scans for installed applications in a particular scanning profile:

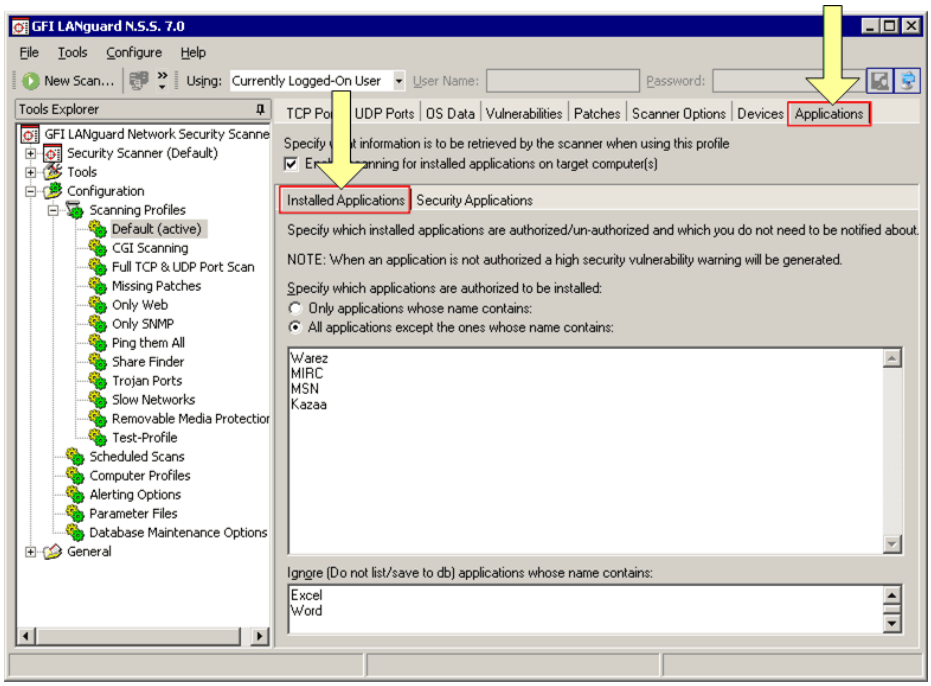
1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Applications** tab.

3. Select the check box next to the '*Enable Scanning for installed applications on target computers'* option.

NOTE: Installed applications scanning is configurable on a scan profile by scan profile basis. If in a particular profile this option is not selected, no checks for installed applications will be performed in the security audits carried out by this scanning profile.

Scanning for installed applications



Screenshot 88 - The Applications tab: Installed Applications tab options

Compiling a list of unauthorized applications

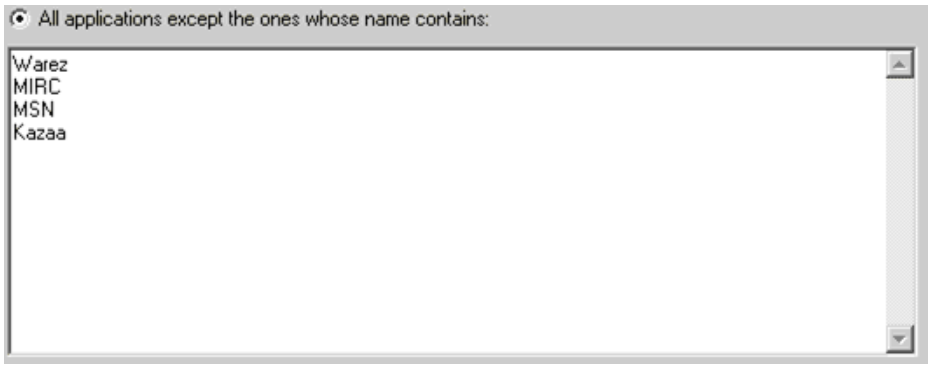
To compile a list of dangerous applications:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Applications** tab.

3. Click on the **Installed Applications** sub-tab.

4. Select the *'All applications except the ones whose name contains:'* option.



Screenshot 89 - List of unauthorized applications

5. In the list underneath the previously selected option, specify the names of the installed applications which you want to classify as high security vulnerabilities.

For example, if you enter the word "Kazaa" you will be notified through a high security vulnerability alert when an application whose name contains the word "Kazaa" is detected.

Compiling a list of safe applications

To compile a list of safe applications:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

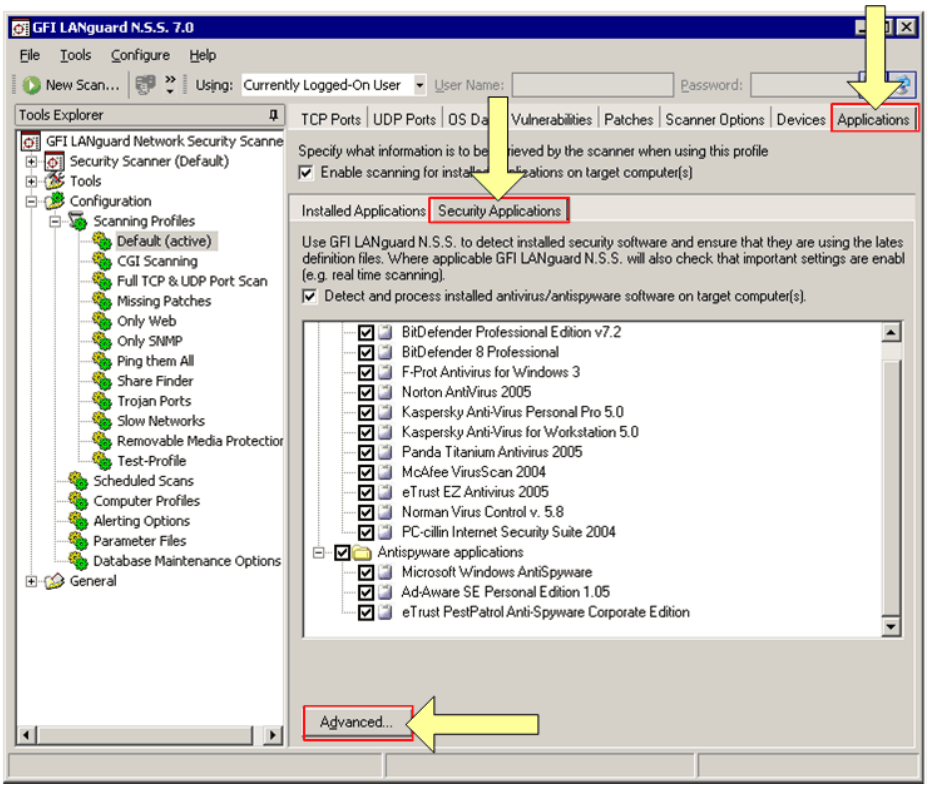
2. From the right pane, click on the **Applications** tab.

3. Click on the **Installed Applications** sub-tab.

4. In the list under 'Ignore (Do not list/save to db) applications whose name contains:' specify the names of the applications (for example, Excel) that you wish to exclude from the scan results.

NOTE: Include only one application name per line.

Scanning for security applications



Screenshot 90 - The Applications configuration page: Security Applications tab options

GFI LANguard N.S.S. ships with a default list of anti-virus and anti-spyware applications which can be checked during security scanning.

Enabling/disabling checks for security applications

To enable checks for installed security applications in a particular scanning profile:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Applications** tab.

3. Select the check box next to the '*Detect and process installed anti-virus/anti-spyware software on target computers*' option.

NOTE: Installed security applications scanning is configurable on a scan profile by scan profile basis. If in a particular profile this option is

not selected, no checks for installed security applications will be performed in the security audits carried out by this scanning profile.

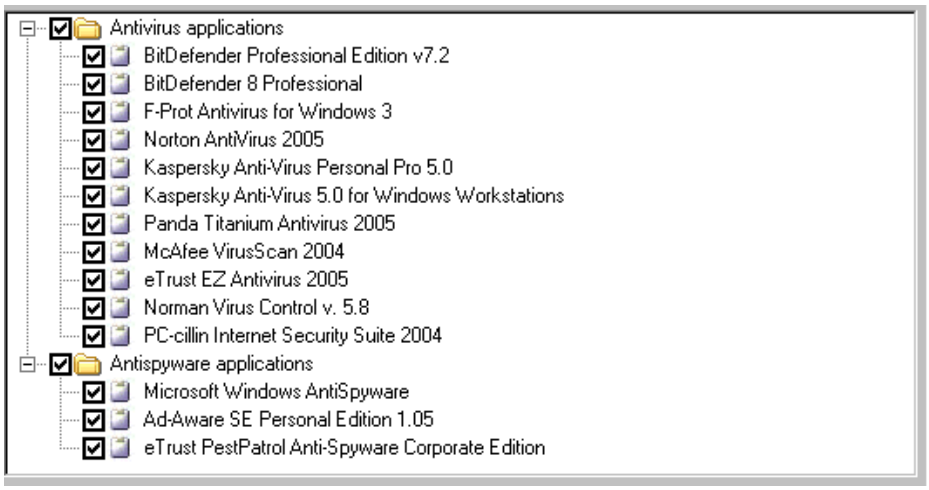
Customizing the list of security application for scanning

To specify which security applications will be scanned during an audit:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile that you wish to customize.

2. From the right pane, click on the **Applications** tab.

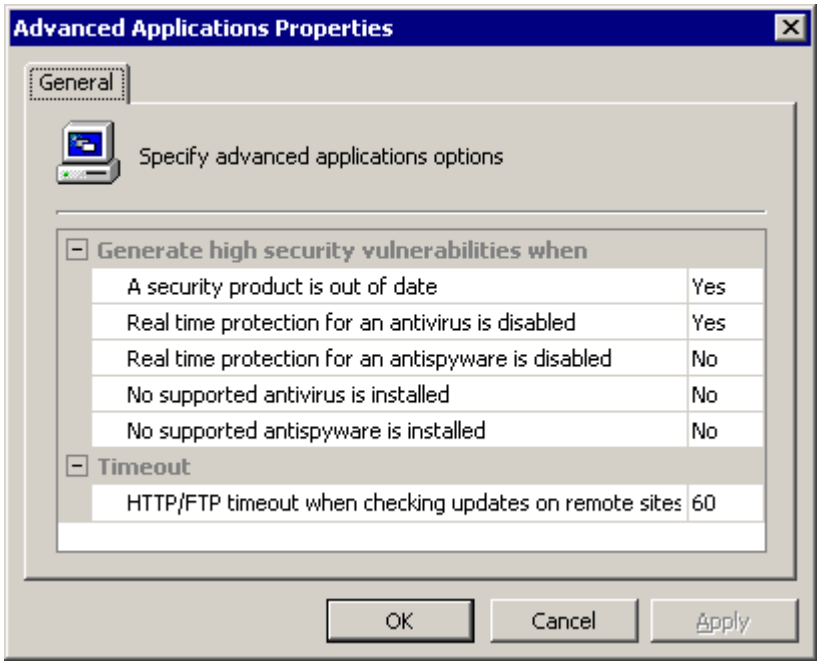
3. Click on the **Security Applications** tab.



Screenshot 91 - Selecting the security applications to be investigated

4. Select the check boxes of the security applications that you wish investigate when performing security audits with this scanning profile.

Configuring security applications - advanced options



Screenshot 92 - Advanced configuration options dialog

Use the **Advanced** button included in the **Security Applications** configuration page to configure extended security product checks which generate high security vulnerability alerts when:

- The anti-virus or anti-spyware product definitions files are out of date.
- The 'Realtime Protection' feature of a particular anti-virus or anti-spyware application is found disabled.
- None of the selected anti-virus or anti-spyware software is currently installed on the scanned target computer.

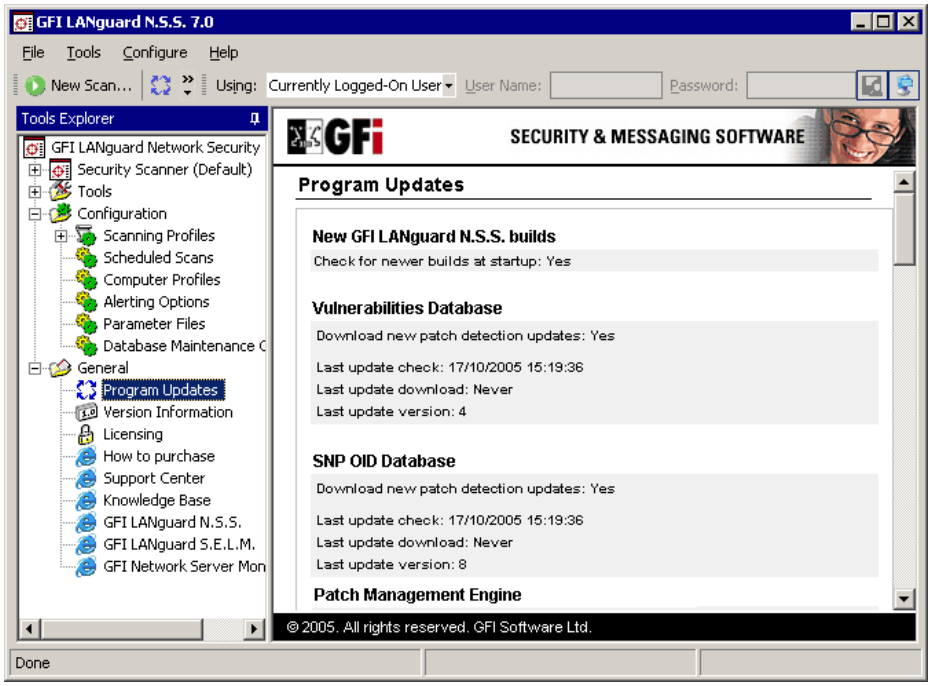
GFI LANguard N.S.S. program updates

Introduction

GFI LANguard N.S.S. uses a number of parameter files which serve different purposes in the process of security scanning your network. These databases are updated periodically by GFI offering the latest Microsoft patch management updates, vulnerability checks and device identification data. Periodically GFI also provides new GFI LANguard N.S.S. builds that contain new features as well as engine fixes and enhancements which improve the performance of your network security scanning tools.

Use the 'Program Updates' tool to download the latest reference files and program builds. By default, GFI LANguard N.S.S. is configured to automatically check for program updates at every startup. Program updates can also be started manually by bringing up the 'Program Update Wizard' from **Help ▸ Check for updates**.

Checking the version of current installed updates



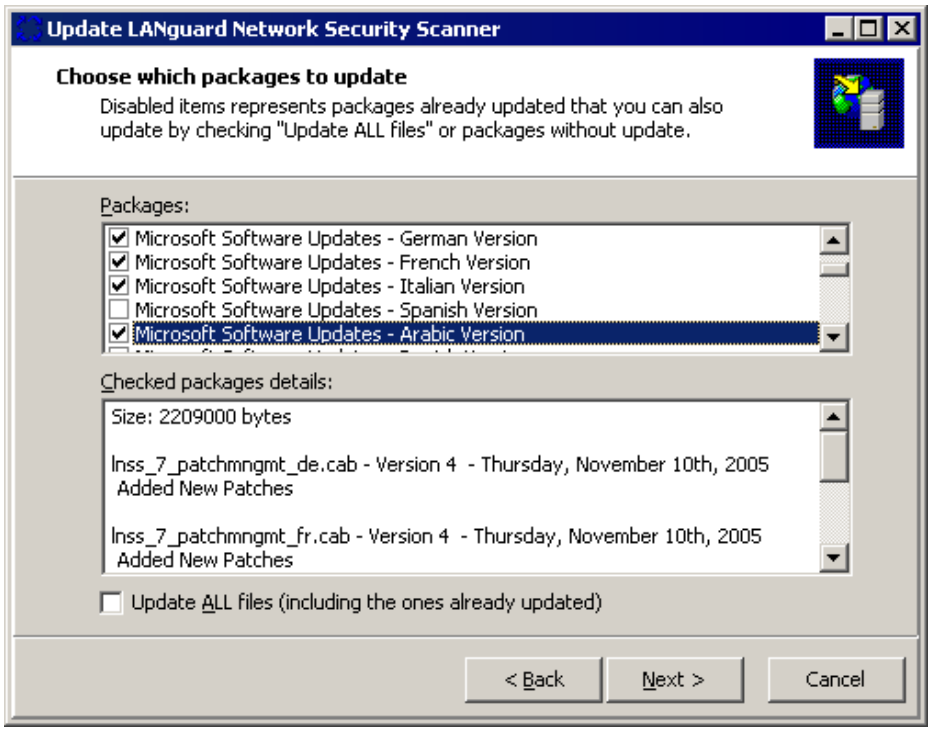
Screenshot 93 - Details on the currently installed updates

Click on the **General ▸ Program Updates** node to view the update status of your GFI LANguard N.S.S.

The program update details are organized into categories and are shown in the right pane of your configuration interface. Each category

includes the date of the last update performed, the date of the most recent download as well as the version of the current installed database updates.

Downloading software updates from Microsoft in different languages



Screenshot 94 - Selecting the Microsoft update files

Out of the box, GFI LANguard N.S.S. supports multilingual patch management. Through multilingual patch management you can download and deploy missing Microsoft product updates, discovered during a security scan, in a variety of different languages.

The security scanning engine identifies missing Microsoft patches and service packs by referencing 'Microsoft Software Update files'. These files contain the latest (complete) list of product updates currently provided by Microsoft and are available in all languages supported by Microsoft products.

Use the GFI LANguard N.S.S. 'Program Update' tool, to download the latest 'Microsoft Software Update files' in all languages currently in use on your network. This would allow the security scanning engine to discover and report both English as well as non-English missing patches and service packs. Based on this information, you can then use the patch deployment engine to download and install the missing update files in their respective languages network wide.

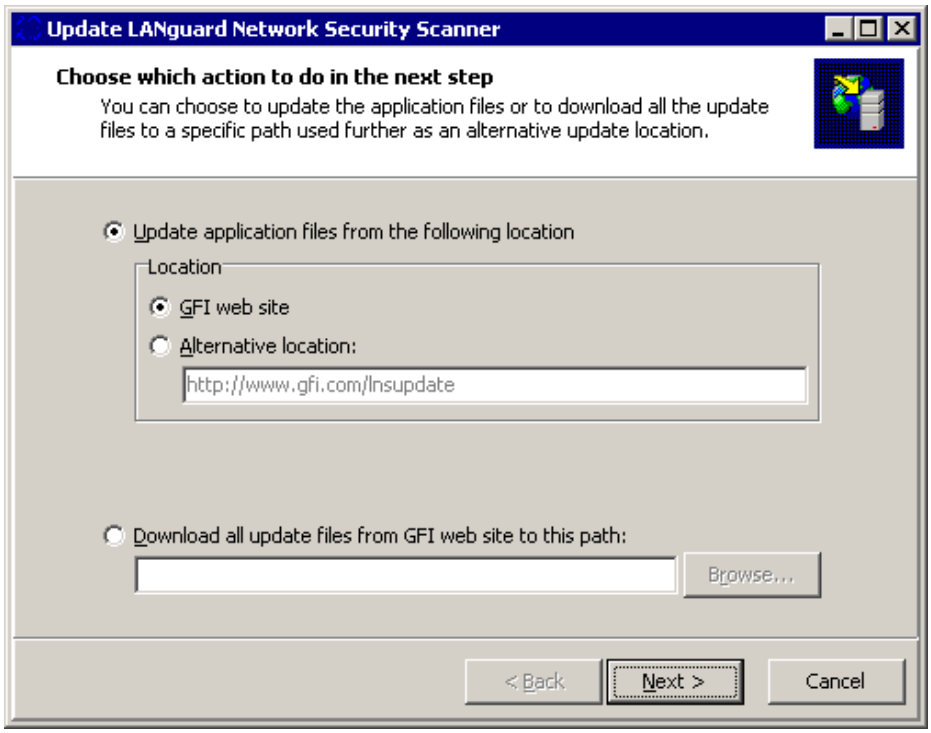
Supported languages include: English, German, French, Italian, Spanish, Arabic, Danish, Czech, Finnish, Hebrew, Hungarian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Portugese_Brazilian, Russian, Swedish, Chinese, Chinese_Taiwan, Greek, and Turkish.

Information on how to download multilingual 'Microsoft Update Files' is provided further on in this chapter.

Starting program updates manually

To manually start a GFI LANguard N.S.S. program update:

1. Right click on the **General ▸ Program Updates** node and select **Check for Updates…**. This will bring up the 'Check for updates wizard'.

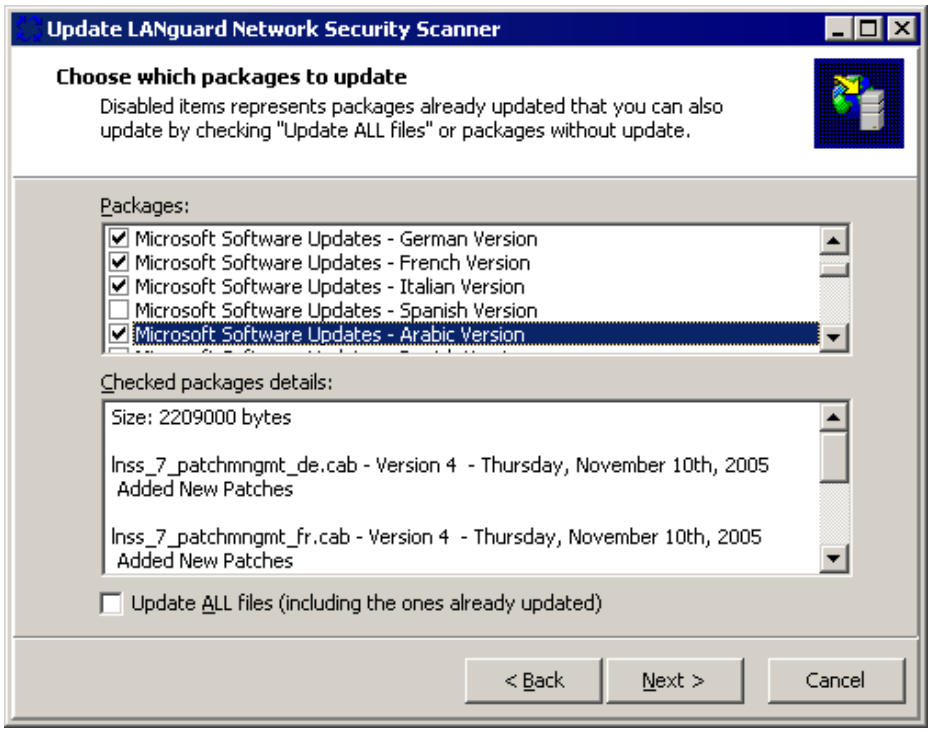


Screenshot 95 - The Check for Updates wizard: Stage 1

2. Specify the location from where the required update files will be downloaded.

3. To change the default update-download path, select the *'Download all update files……to this path'* option.

4. Click on **Next** to proceed with the update.



Screenshot 96 - The Check for updates Wizard: Stage 2

5. Select the updates that you wish to download. Available updates include:

- **GFI LANguard N.S.S. Vulnerabilities Update:** - Select this option to download new vulnerability checks and fixes.
- **GFI LANguard N.S.S. Dictionaries Update:** - Select this option to download dictionary file updates (for example, weak community strings dictionary file updates, weak passwords dictionary files updates, etc.)..).
- **Microsoft Software Updates:** - Select the 'Microsoft Software Update' files of all languages currently in use on your network. For more information refer to the 'Downloading Microsoft updates in different languages' section at the beginning of this chapter.

NOTE: Select the *'Update ALL files (including the ones already updated)'* option at the bottom of the dialog to update all files.

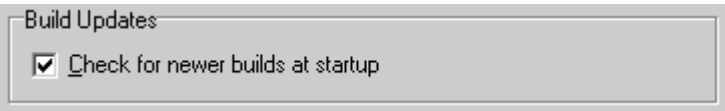
6. Click on **Next** to continue.

7. Click on **Start** to begin the update process.

Checking the availability of software updates at program startup

By default, GFI LANguard N.S.S. checks for the availability of supported updates at every program startup. To disable automated software update checks at startup:

1. Right click on the **General ▸ Program Updates** node and select **Properties**. This will bring up the Program Updates **P**roperties dialog.

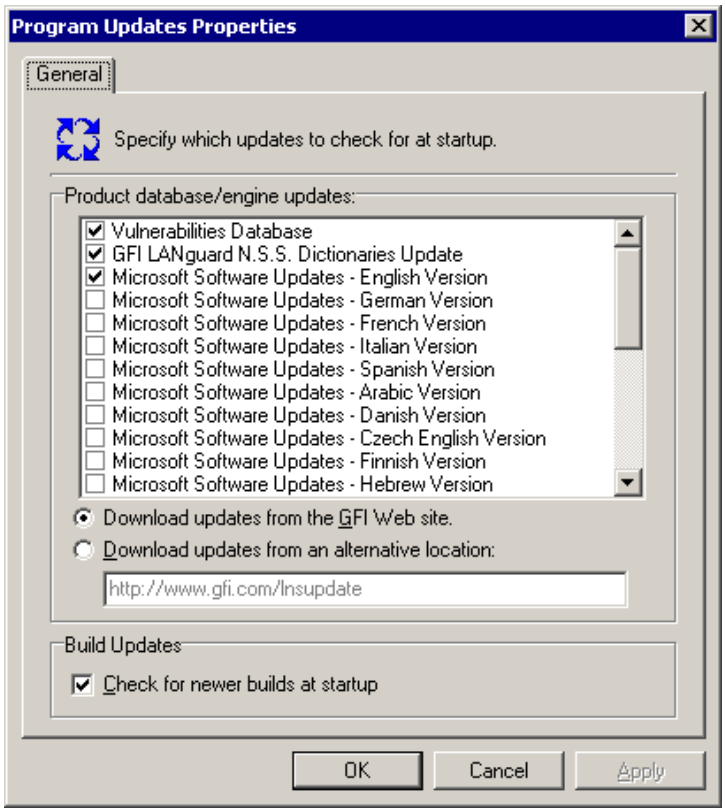


Screenshot 97 - The 'Check for newer builds at startup' option

2. Unselect the *'Check for newer builds at startup'* option at the bottom of the dialog.

Configuring which updates to check on program startup

To configure which updates are checked at program startup:



Screenshot 98 - Program Updates Properties dialog

1. Right click on the **General ▸ Program Updates** node and select **Properties**.

2. Select the database and engine updates that you wish to download.

3. Specify the location from where you wish to download the selected program updates.

4. Click on **OK** to save these settings.

Patch management: Deploying Microsoft Updates

Introduction

Use the patch management tool to automatically keep your Microsoft products up to date with the latest patches and service packs. Supported Microsoft products include Windows 2000, XP and 2003 Operating systems, Microsoft Office XP or later, Microsoft Exchange 2000 or later and Microsoft SQL Server 2000 or later. A complete list of Microsoft products supported by GFI LANguard N.S.S. is available on http://kbase.gfi.com/showarticle.asp?id=KBID002573.

To successfully deploy patches and service packs on your network system, you must:

Step 1: Scan your network system.

Step 2: Select the computers on which patches and service packs will be deployed.

Step 3: Select the patches and service packs that will be deployed.

Step 4: Download the required patches and service pack files.

Step 5: Deploy the downloaded patches and service packs to your targets.

To successfully deploy patches on the selected target computers, you must make sure that:

- GFI LANguard N.S.S. is running under an account which has administrative rights on the target computer to which the updates will be deployed.
- NetBIOS service is enabled on the remote computer.

For more information on how to enable NetBIOS refer to the 'Enabling NetBIOS on a target computer' section in the 'Miscellaneous' chapter.

About the patch deployment agent

GFI LANguard N.S.S. makes use of a patch deployment agent to deploy patches, service packs and custom software on remote targets. The patch deployment agent is a service which is silently (and automatically) installed on the remote target computer during patch deployment. Its purpose is to successfully run and monitor the installation of updates at a (configurable) scheduled time, making GFI LANguard N.S.S. more efficient and reliable than counterparts running agent-less patch deployment.

About recalled patches

It is not uncommon that Microsoft recalls patches and service packs. Cases in point are the MS03-045 patch for Windows and MS03-047

patch for Exchange that were released on the 15th October 2006. Patches are generally recalled due to newly discovered vulnerabilities or problems caused by the installation of these updates.

When this happens, GFI LANguard N.S.S. will still report recalled patches as missing, even though these cannot be installed. If you do not want to be informed about these missing patches you must disable checking for that particular patch. This is done as follows:

1. Expand the **Configuration ▸ Scanning Profiles** sub-node and select the profile that you wish to configure.

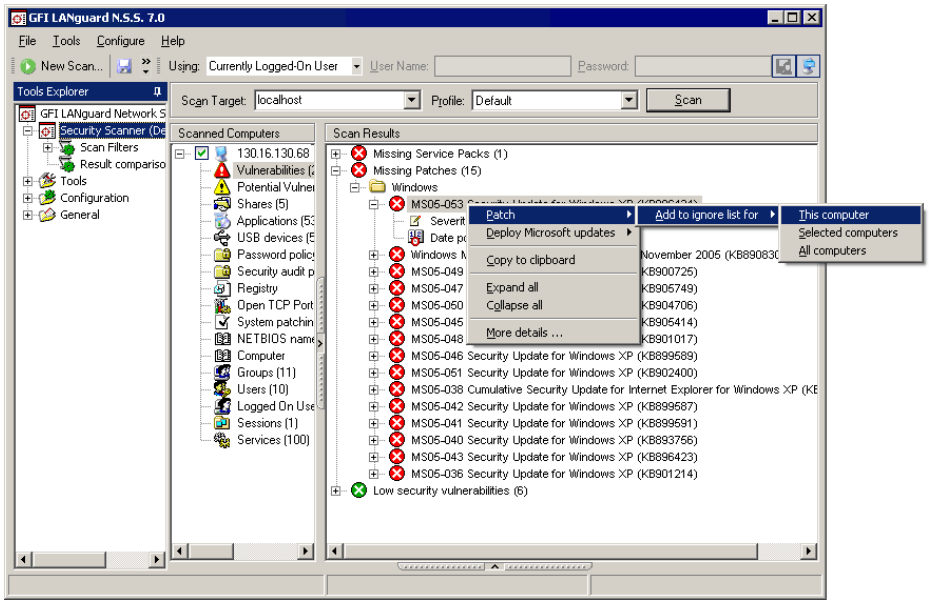
2. From the right pane, click on the **Patches** node and unselect the respective bulletin from the provided list.

You can also add recalled patches to an ignore list. The patch ignore list allows you to exclude particular patches such as recalled patches from security scanning audits. To add a missing patch to the ignore list:

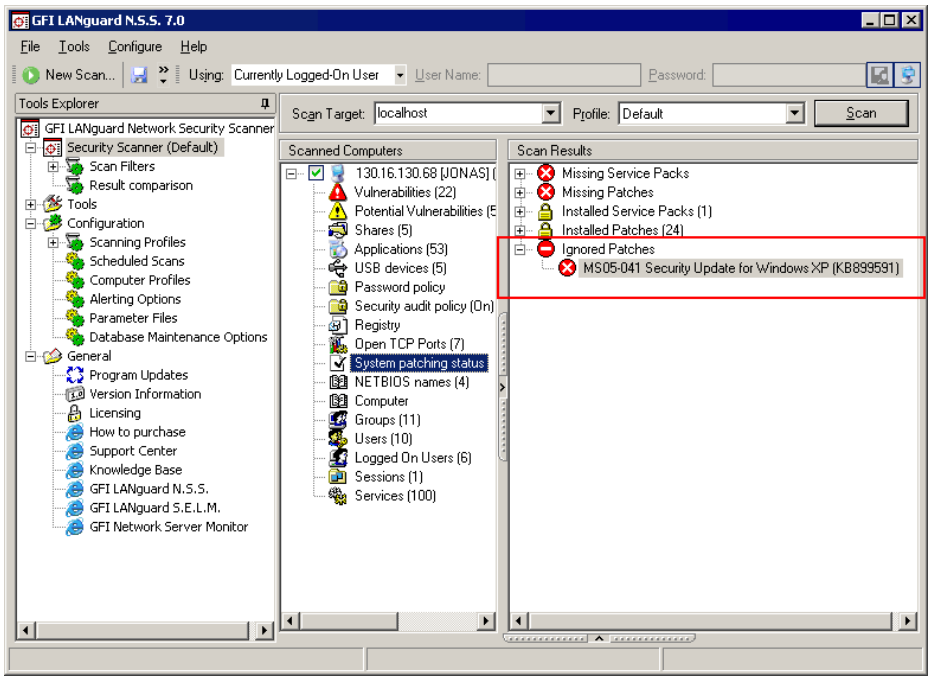
1. Perform a security scan on your network.

2. From the scan results, access the list of missing patches.

3. Select the patch that you want to add to the ignore list.



3. Right click and select **Patches ▸ Add to ignore list for ▸ This computer**.



Screenshot 99 - Patches included in the ignore list of a particular target

To view the patches in the ignore list of a particular target computer , click on the **San Results ▸ System patches status** node.

Multilingual patch management

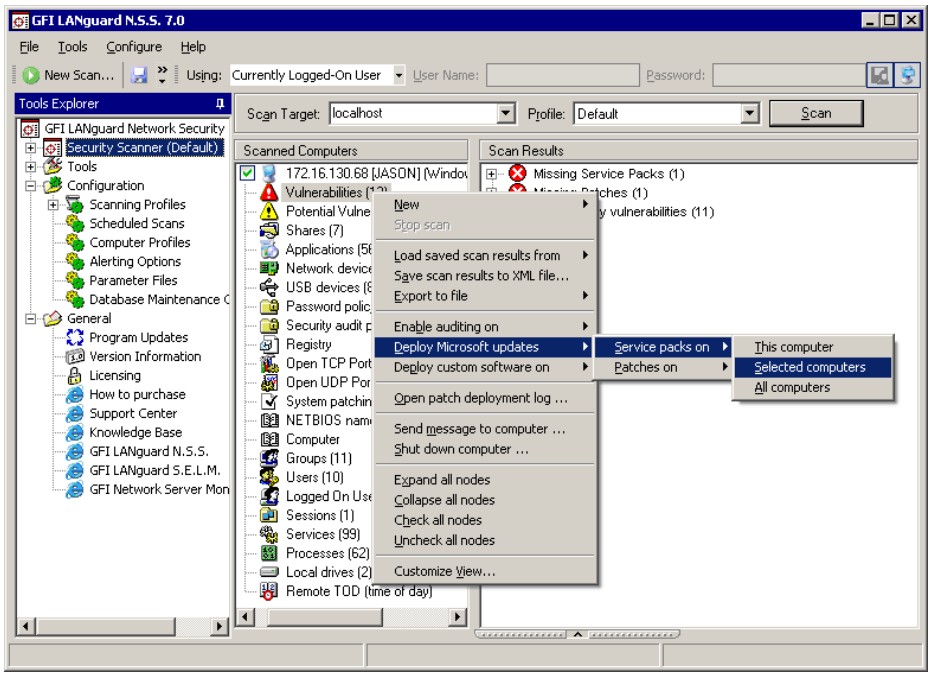
The GFI LANguard N.S.S. patch management engine automatically downloads and installs the missing Microsoft security software updates and service packs which match the language being used by the target computer.

For more information on multilingual patch management refer to the 'Downloading Microsoft updates in different languages' section at the beginning of this chapter.

Selecting the target computers where patches will be deployed

Once a network security scan has completed, you can start the deployment of missing patches and service packs on your target computers.

Missing patches and service packs can be deployed on a single target computer, on a selection of target computers as well as on all target computers that have missing patches and service packs.



Screenshot 100 - Deploying missing service packs and patches

Deploying missing updates on one computer

From the 'Scanned Computers' (middle) pane, right-click on the computer that you wish to update and select **Deploy Microsoft updates ▸ [Service packs on** or **Patches on] ▸ This computer.**

Deploying missing updates on a range of computers

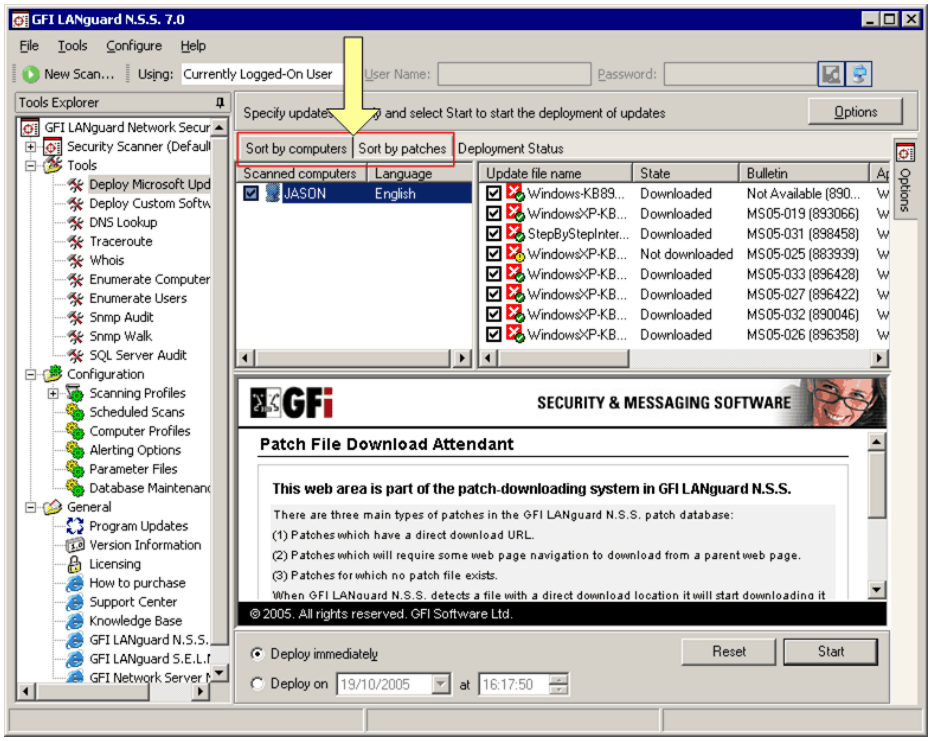
1. From the 'Scanned Computers' (middle) pane, select the check box of the computers that you wish to update.

2. Right click on any of the selected computers and select **Deploy Microsoft updates ▸ [Service packs on** or **Patches on] ▸ Selected computers.**

Deploying missing updates on all computers

From the 'Scanned Computers' (middle) pane, right-click on any of the listed target computers and select **Deploy Microsoft updates ▸ [Service packs on** or **Patches on] ▸ All computers.**

Selecting which patches to deploy



Screenshot 101 - Patch Deployment options page

After you have specified which target computers will be updated, GFI LANguard N.S.S. will automatically bring up the Patch Deployment options. These options are displayed in the right pane of the configuration interface together with the list of target computers selected and the English/non-English updates that will be downloaded and deployed on the enumerated targets.

NOTE: To manually open the patch deployment options click on **Tools ▸ Deploy Microsoft patches**.

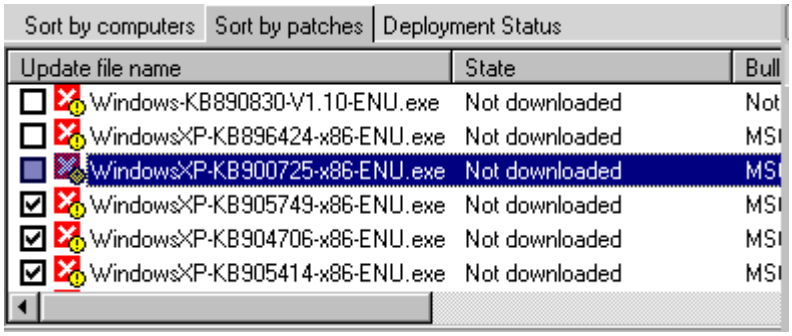
Sorting results

The Patch Deployment options page allows you to organize and view the list of service packs and patches to be deployed in two ways:

- *'Sort by computers'* – This view shows the list of missing patches grouped per target computer.
- *'Sort by patches'* – This view shows the list of all missing patches sorted by 'Update file name'.

Switch between these views by clicking on the **Sort by computers** and **Sort by patches** tabs accordingly.

Selecting the patches to be deployed



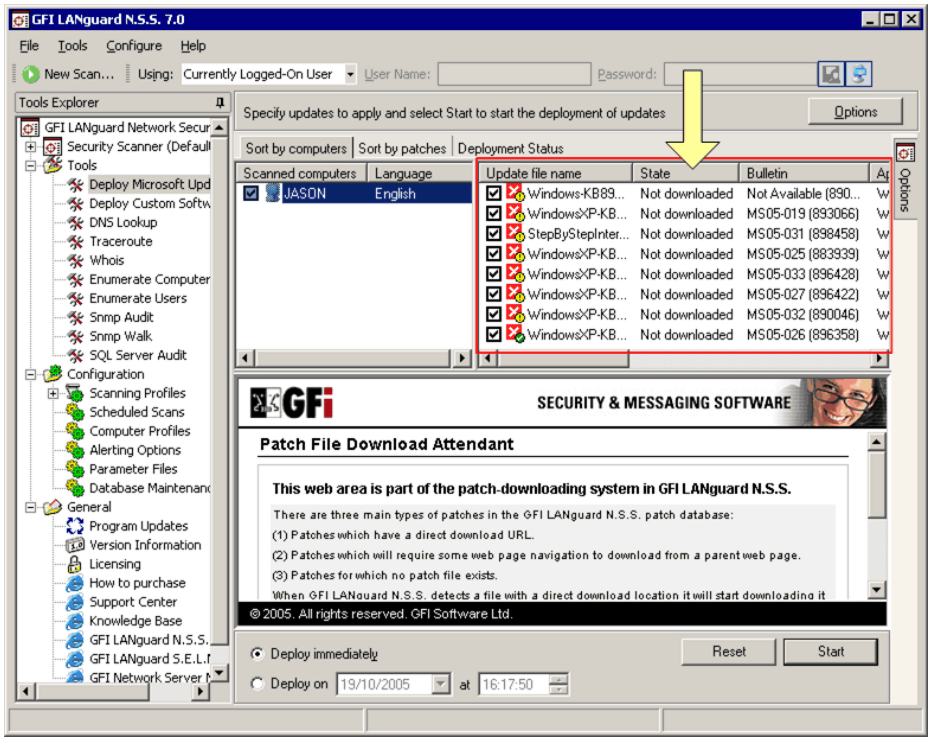
Screenshot 102 - Selecting patches to be downloaded and deployed

By default, GFI LANguard N.S.S. will download and deploy all the missing English and non-English patches and service packs discovered during a network security scan. To exclude particular patches from a download and deployment session, unselect the check box next to the respective patch.

Download the patch and service pack files

After selecting the required patches and service packs you can start to download these update files.

Once triggered, GFI LANguard N.S.S. will automatically handle downloading of missing patches and service in their respective languages (English and non-English).



Screenshot 103 - A list of patches to be downloaded

Starting patch and service pack downloads

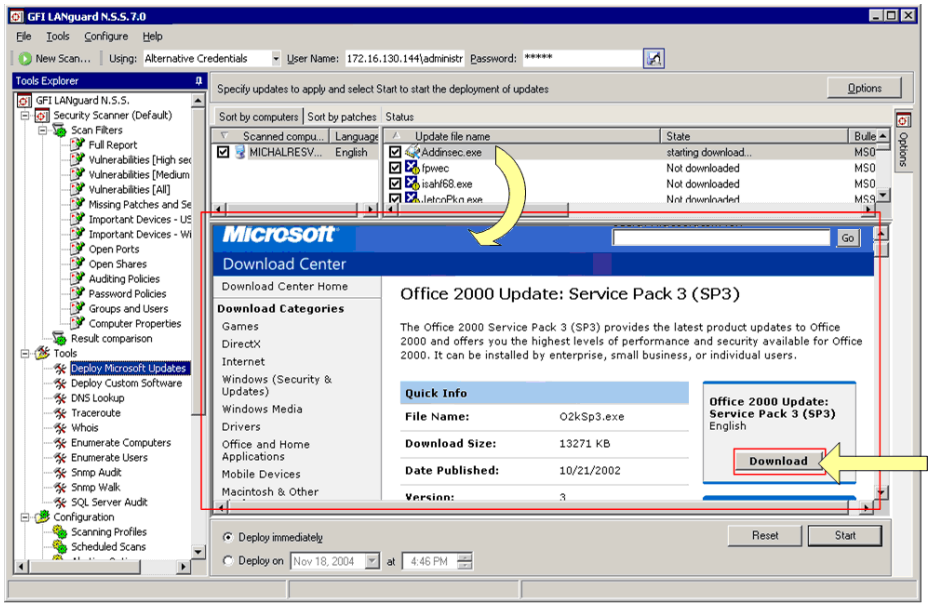
To start the download of a specific patch or service pack, right-click on the respective patch file and select **Download File**.

To start the download of all the selected patches or service packs, right-click on any patch file and select **Download all checked files**.

The icons next to each update file show the current download status. These icons indicate the following states:

- Downloaded
- Currently being downloaded
- Waiting for user to navigate to the web page to click on the link to download the file
- Not downloaded.

Downloads which require user intervention



Screenshot 104 -Downloading a patch from a web page

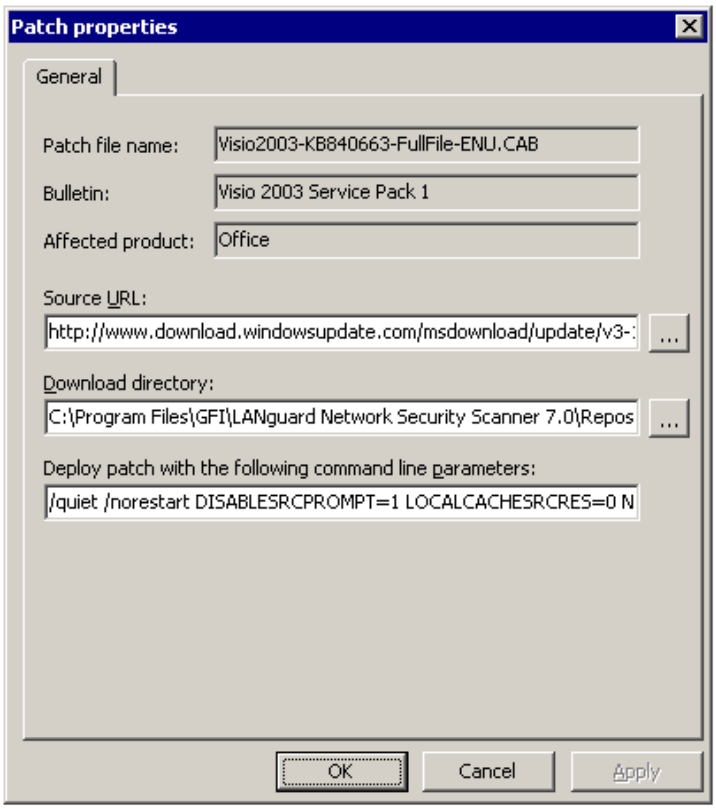
Certain patch files require that you manually download them from a specific target site. These files are denoted by the icon which is shown next to these particular files.

For such downloads, GFI LANguard N.S.S. will automatically open the parent web page in the bottom area of the deployment tool. Click on the download link shown in this web page to start the download process.

Stopping active downloads

To stop an active patch-download, right-click on the particular patch and select **Cancel Download**.

(Optional) Configure alternative patch file deployment parameters



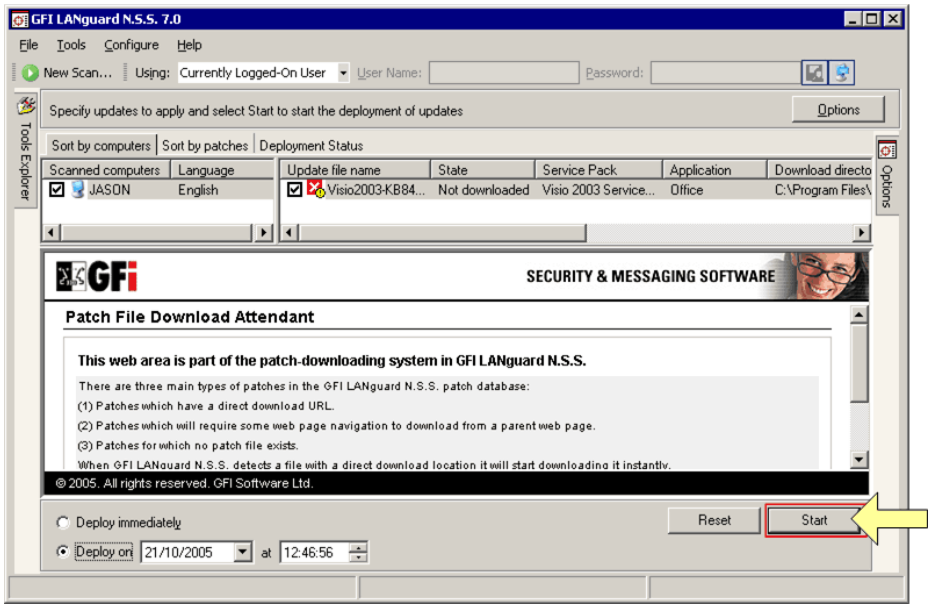
Screenshot 105 - Patch file properties dialog

You can optionally configure alternative patch deployment parameters on a patch by patch basis. Parameters that can be configured include the download URL and the destination path of the downloaded patch file. To change the deployment and download settings of a missing patch:

1. Right click on the particular patch file and select **Properties**. This will bring up the patch file properties dialog.

2. Make the required changes and click on **OK** to save these settings.

Deploy the updates

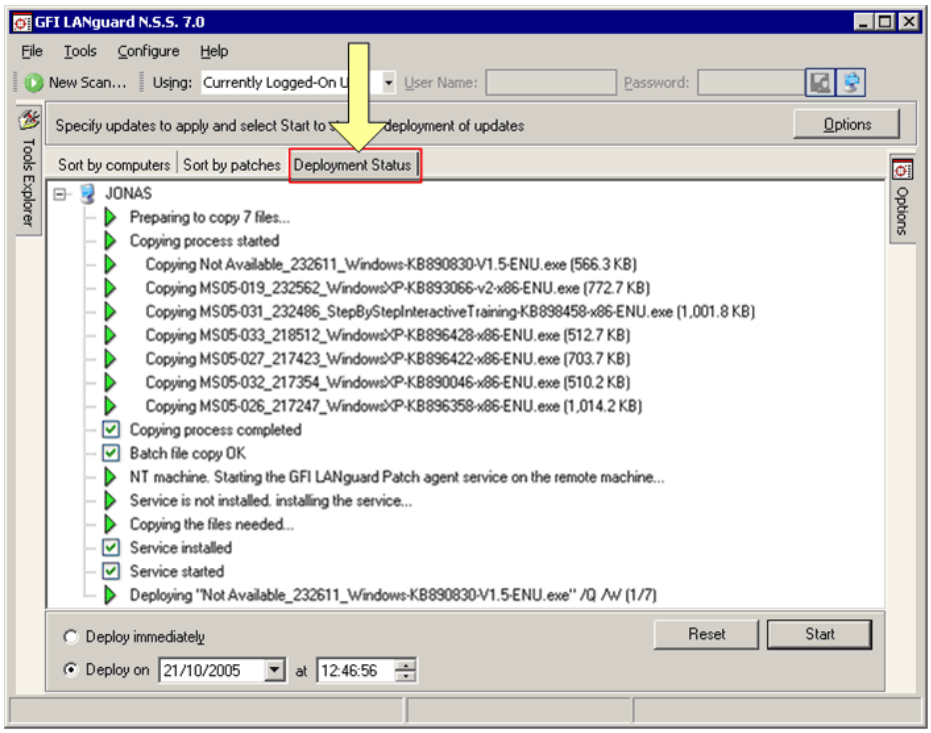


Screenshot 106 - Patch deployment options

Starting the patch deployment process

After the required patch files have been downloaded, you can proceed with the deployment of these files on the respective targets. To start the deployment process, click on the **Start** button at the bottom-right of the patch deployment page.

Monitoring the patch deployment process



Screenshot 107 - Monitoring the deployment process

To view the patch deployment activity in progress, click on the **Deployment Status** tab located next to the **Sort by patches** tab at the top of the right pane.

Patch management: Deploying custom software

Introduction

Use the 'Custom Software Deployment' tool to install custom software and deploy third party software patches or updates network wide.

For example, you can use this tool to deploy virus signature updates on your network computers.

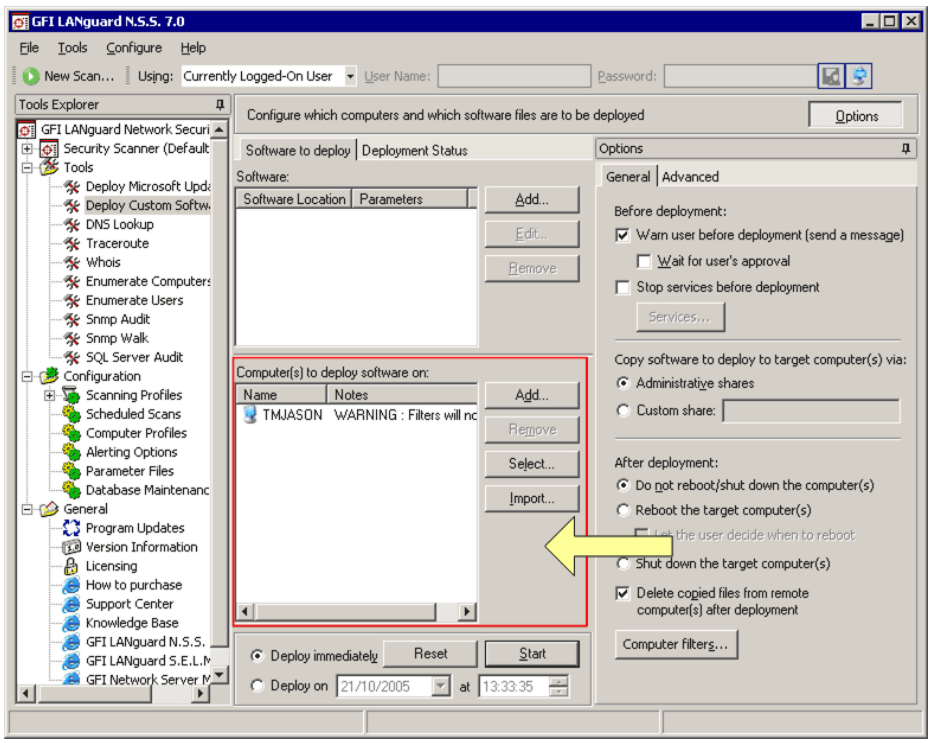
The deploy custom software tool is accessible from **Tools ▸ Deploy Custom software**. The process of deploying custom software is very similar to the process of deploying Microsoft updates on a computer. To deploy custom software on a target computer you must:

Step 1. Select the computer on which the software/update file will be installed.

Step 2. Specify the software which will be deployed.

Step 3. Start the deployment process.

Selecting targets for custom software/patch deployment



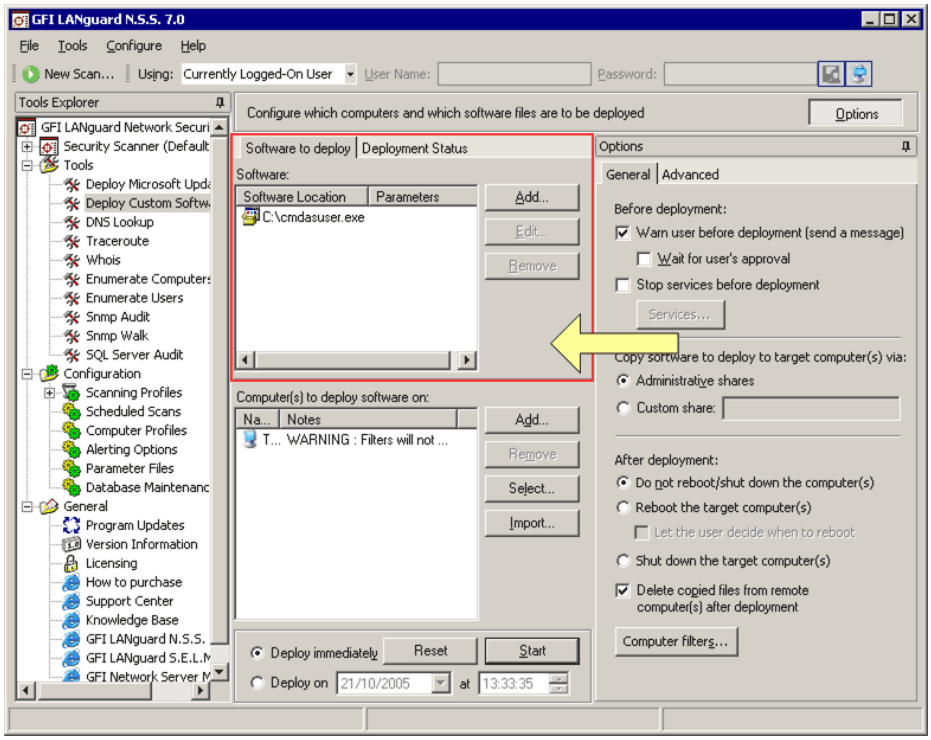
Screenshot 108 - Selecting the target computers

1. Click on the **Tools ▸ Deploy Custom software** node.

2. From the 'Computer(s) to deploy software' area (in the middle of the configuration dialog), click on **Add** to include a single computer, or click on **Select** to specify a range of computers on which custom software will be deployed.

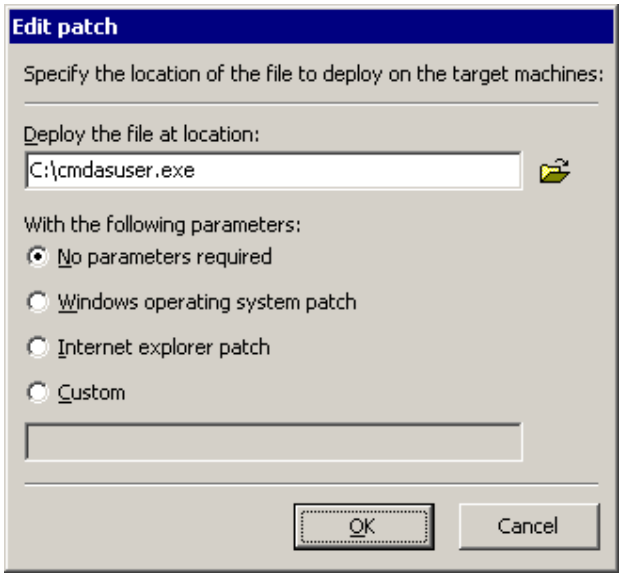
NOTE: The list of computers can also be imported from a text file by clicking on the **Import** button.

Enumerating the software to be deployed



Screenshot 109 - Selecting the software to deploy

1. From the 'Software' area (in the middle of the configuration interface), click on **Add.**



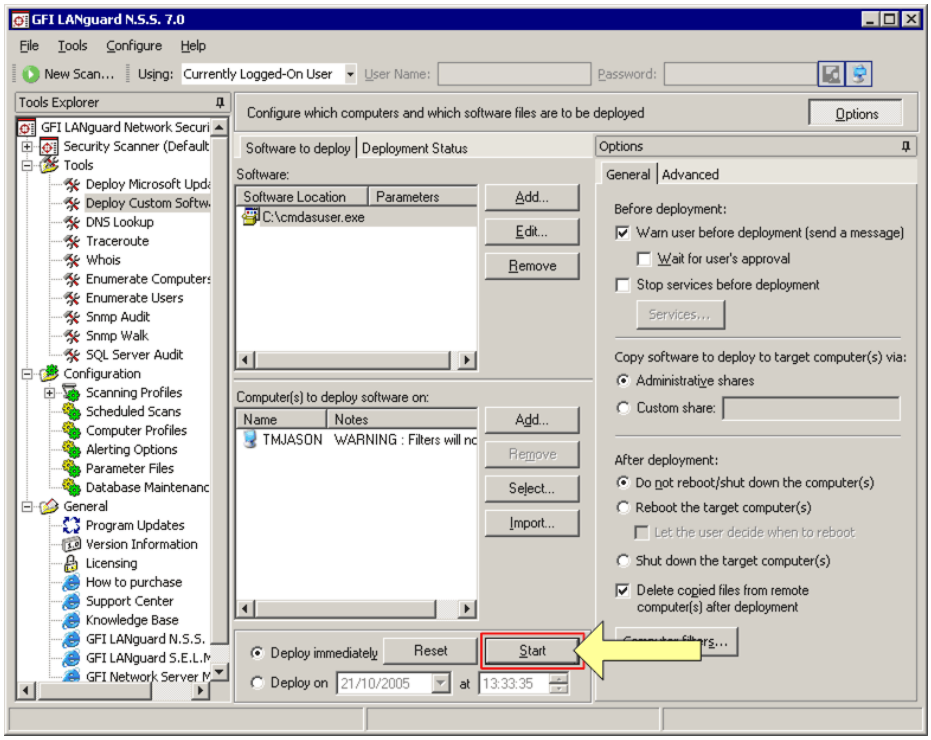
Screenshot 110 - Specifying the software to deploy

2. Specify the source file location.

3. To specify command line parameters to pass on during the deployment of the file, select one of the following options:

- *'Windows operating system patch'* – Select this option if you are going to deploy Windows OS patches.
- *'Internet explorer patch'* – Select this option if you are going to deploy Internet Explorer patches.
- *'Custom'* - Select this option if you want to include custom parameters. Specify the required parameters in the entry box provided at the bottom of the dialog.

Start the deployment process



Screenshot 111 - Software deployment details

Once you have specified which software will be deployed and on which target computer(s), begin the software deployment by clicking on the **Start** button.

Scheduling patch deployment

To schedule custom software deployment:

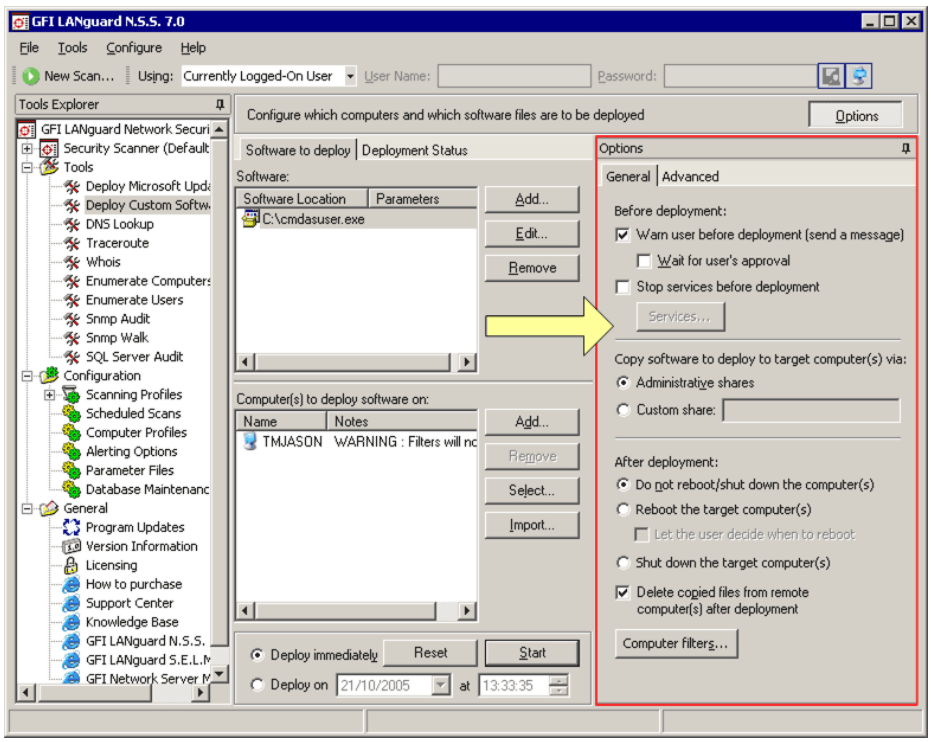
1. Select the *'Deploy on'* option.

2. Specify the preferred date and time in the provided fields.

3. Click on the **Start** button to activate the scheduled deployment process.

Deployment options

General deployment options



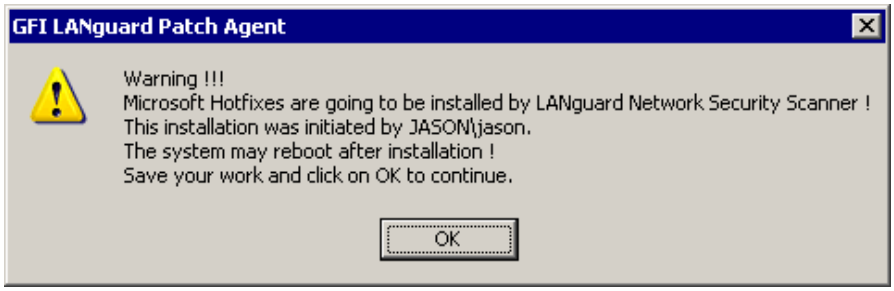
Screenshot 112 - General deployment options

The general deployment options allow you to configure before and after patch deployment actions.

Before deployment options

Configure the 'Before deployment' options in the **General** tab as follows:

- *'Warn users before deployment'* – Select this option if you want to send a message to the target computer before deploying an update.



Screenshot 113 - Deployment Warning: Informs users that a deployment process is about to start

In this way, target computer users will be allowed to save and close running programs before patches are deployed on their computer(s).

- *'Wait for user's approval'* – Select this option to request the approval of a target computer user before starting the deployment

of a file. This allows the target computer user to put on hold the deployment process in case some other important process (for example, a system backup) is already under way. In this way other processes can be left to finish prior to the deployment, just in case the target computer requires a reboot after the installation of the file. To start the patch deployment, the target computer user must click on the **OK** button included in the message dialog.

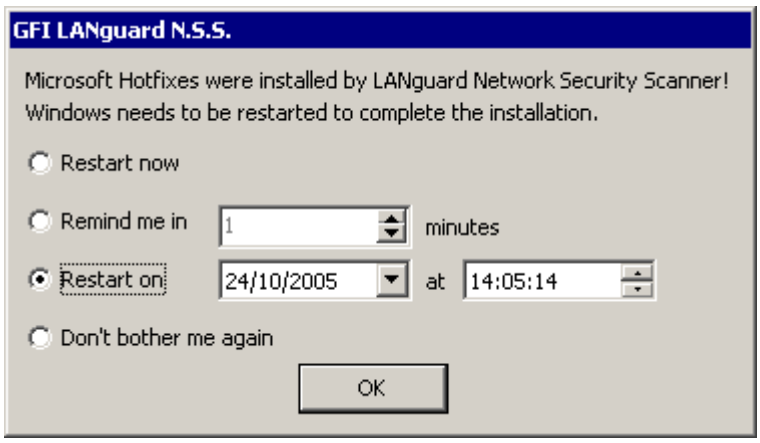
- *'Stop services before deployment'* – Select this option to stop specific services before starting the deployment. Specify the services that you wish to stop by clicking on the **Services…** button.

After deployment options

Configure the 'After deployment' options in the **General** tab as follows:

- *'Do not reboot'* – Select this option if you do NOT want to (remotely) reboot the target computer after the deployment process.
- *'Reboot the target computers'* – Select this option to automatically reboot target computers after that the software or patches have been installed.
- *'Let the user decide when to reboot'* - Select this option to let target computer users interactively decide when to reboot the computers where software/patches have been deployed.

  When this option is enabled, the dialog shown below is automatically displayed on the target computers' desktop.



Screenshot 114 - Post deployment options dialog: Allows users to decide when to reboot the target computer

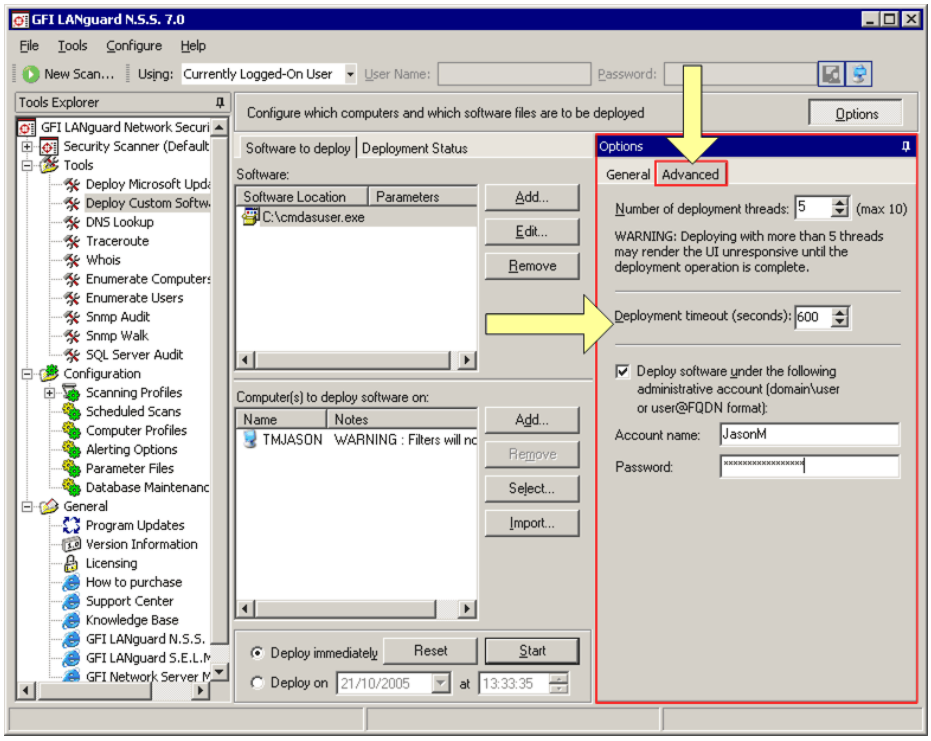
From this dialog users can select one of the following reboot options:

- o *'Restart Now'* – Select this option for immediate restart.
- o *'Remind me in [X] Minutes'* – Select this option to generate a reboot reminder at specific time intervals (in minutes).
- o *'Restart on [date] at [time]'* – Select this option to automatically reboot the target computer on a specific day and/or at a specific time.
- o *'Don't bother me again'* – Select this option to abort remote rebooting.

- o *'Shutdown the target computer(s)'* – Select this option to shutdown target computers after software/patch deployment.

- *'Delete copied files on the remote computers after deployment'* – Select this option to delete the source/installation file from the target computer after that it successfully installed.
- Computer filters - Click on the **Computer filters** button to configure particular target filtering conditions. These settings will allow the deployment of patches only if specific operating systems are installed and running on the target computer(s).

Advanced deployment options



Screenshot 115 - Advanced deployment options

Use the **Advanced** tab to access the advanced deployment options from where you can configure the following deployment parameters:

- Configure the number of patch deployment threads that will be used.
- Configure the deployment timeout.
- Configure the deployment agent service to run under alternative credentials.

Results comparison

Introduction

Through regular audits and scan results comparison you can analyze the changes that occur between successive network security audits. This helps you to immediately identify new vulnerabilities in a timely manner as well as assist you in the investigation and mitigation of unfixed/pending security issues that keep popping up repeatedly in every network security scan.

GFI LANguard N.S.S. ships with a results comparison tool. Use this tool to automatically generate reports which show the difference between two consecutive/non-consecutive scans. Comparison reports can be triggered interactively or automatically.

Generate comparison reports interactively from the **Security Scanner ▸ Result comparison** node. Comparison reports can be interactively generated by selecting the scan results (consecutive and non-consecutive scans) to be compared.

Configure the options in the **Configuration ▸ Scheduled Scans** node **▸ Results notifications** tab to automatically generate comparison after every scheduled scan. Reports generated after scheduled scan allow you to compare the last scan results with the results of the previous (scheduled) scan. For more information refer to the 'Scheduled Scans' section in the 'Configuring GFI LANguard N.S.S.' chapter.

Use the information harvested through result comparisons to pro-actively secure your network from dangerous user activity and protect computers from emerging threats by fixing all possible vulnerabilities before these are exploited.

Comparing scan results interactively

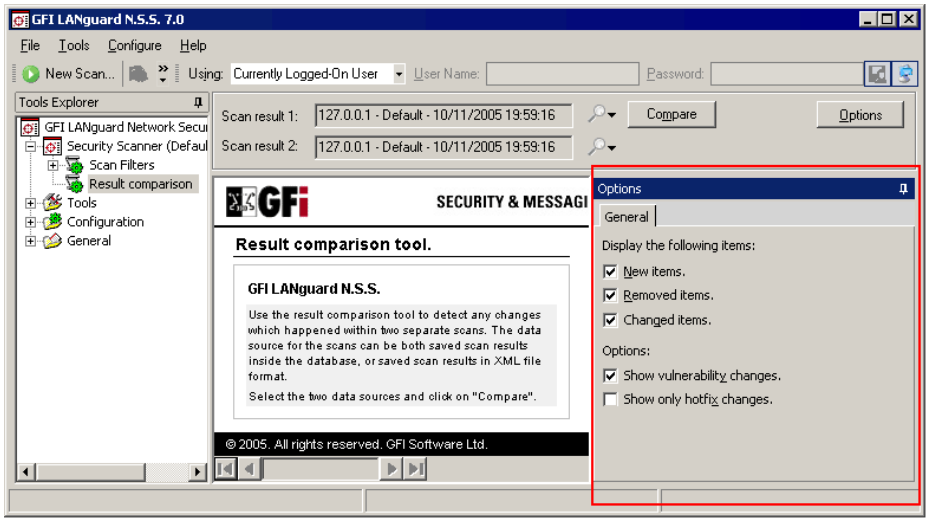
GFI LANguard N.S.S. allows you to store scan results in database or XML files. By default, GFI LANguard N.S.S. stores all the scan results into the Microsoft Access/Microsoft SQL Server database backend. When scheduled scans are performed GFI LANguard N.S.S. will also store the results of the respective scan into an XML file for reporting purposes.

GFI LANguard N.S.S. ships with a results comparison tool which allows you to compare saved scan results and generate a list of network changes discovered.

Configuring what information will be reported

The result comparison tool can report various information discovered during the comparison of 2 saved scan results. Configure the information that will be included in the report as follows:

1. Click on **Security Scanner ▸ Result comparison** node.



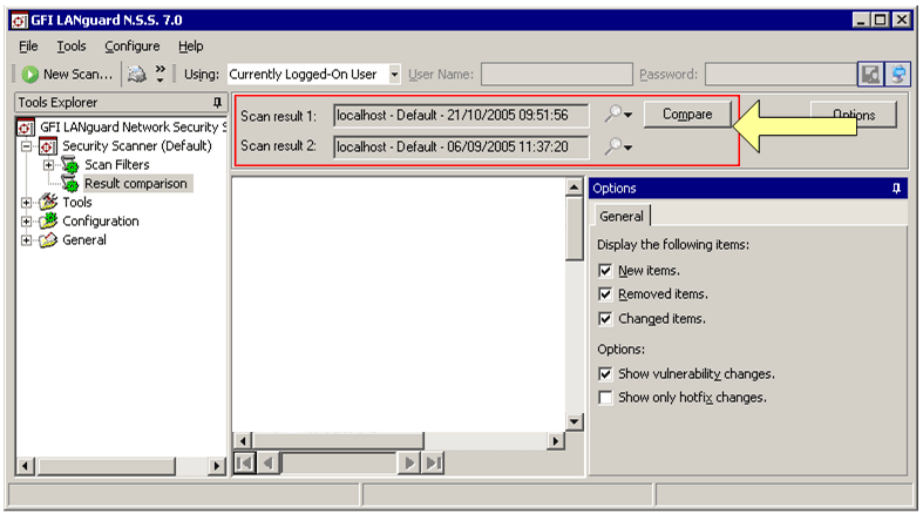
Screenshot 116 - Results comparison configuration options

2. From the right pane, click on the **Options** button.

3. Select the check box of the information item that you want to include in the report. Available items include:

- **New items:** Select this option to include all security issues that were enumerated in the latest scan results and which were not recorded in the previous/older scan results.
- **Removed items:** Select this option to include all result items (for example, installed applications) and components/devices (for example, Network cards, USB devices, Wireless devices, etc.).) that were recorded in the previous/older scan but which have not been recorded in the latest scan.
- **Changed items:** Select this option to include all result items that have changed, such as a service which were enabled or disabled in between scans.
- **Show vulnerability changes:** Select this option to include all new and fixed vulnerabilities identified between the compared scan results.
- **Show only hot-fix changes:** Select this option to include all missing and installed patches identified between the compared scan results.

Generating a Results Comparison Report



Screenshot 117 - Comparing scan results

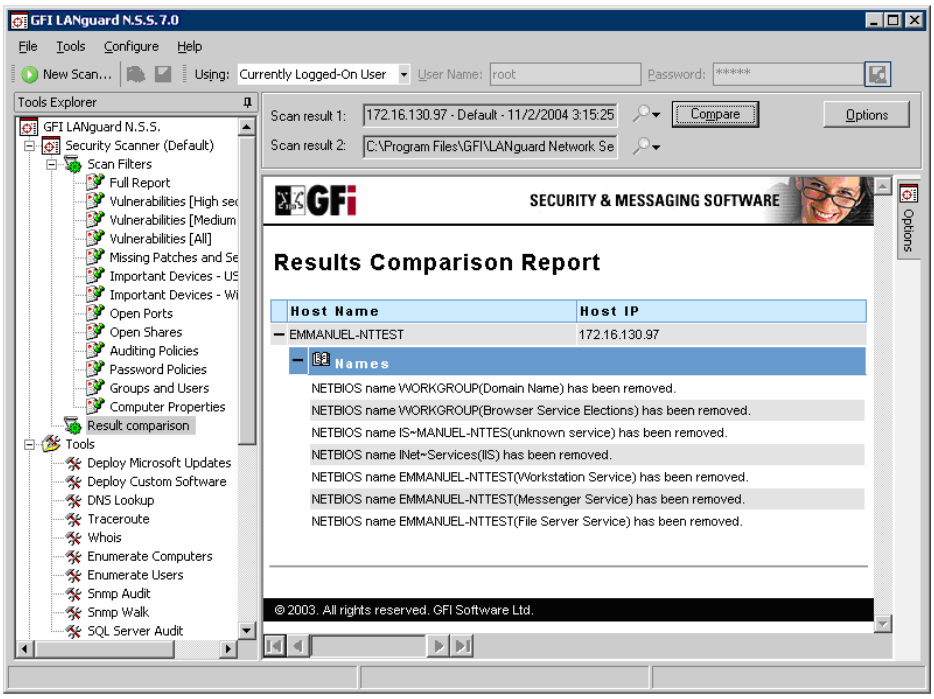
To generate a scan results comparison report:

1. Click on the **Security Scanner ▸ Result comparison** node.

2. Click on the search file buttons to select the scan result files that you wish to compare. You can compare results stored in XML files or database files but you cannot directly compare XML file results to database file results.

3. Click on **Compare** to start the results comparison process.

The Results Comparison Report



Screenshot 118 - Results Comparison Report

The Results Comparison Report shows the target configuration and network layout changes that have been identified between the two scan results.

GFI LANguard N.S.S. Status Monitor

Viewing scheduled operations

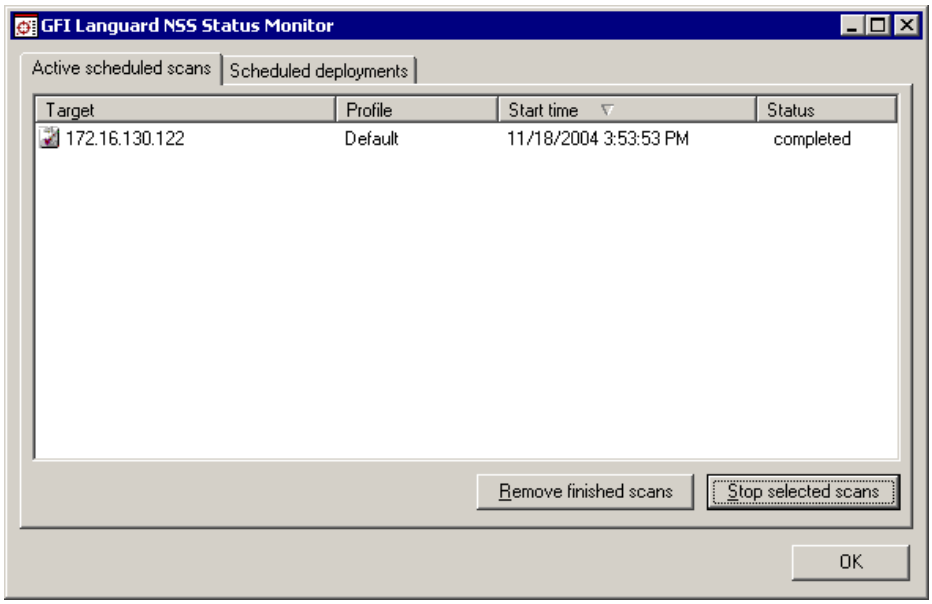
Use the GFI LANguard N.S.S. Status Monitor to view the state of active scheduled scans and scheduled update deployments.

Screenshot 119 - GFI LANguard N.S.S. Status Monitor icon shown in the Windows system tray

The Status Monitor is automatically opened in the Windows system tray whenever the GFI LANguard N.S.S. configuration interface is started. To bring up the Status Monitor click on the icon located in your Windows system tray.

NOTE: Bring up the Status Monitor without opening the GFI LANguard N.S.S. configuration interface from **Start ▸ Program files ▸ GFI LANguard Network Security Scanner 7.0 ▸ LNSS Status Monitor**.

Viewing the progress of scheduled scans



Screenshot 120 - Status Monitor: Active scheduled scans tab.

To view scheduled scans in progress:

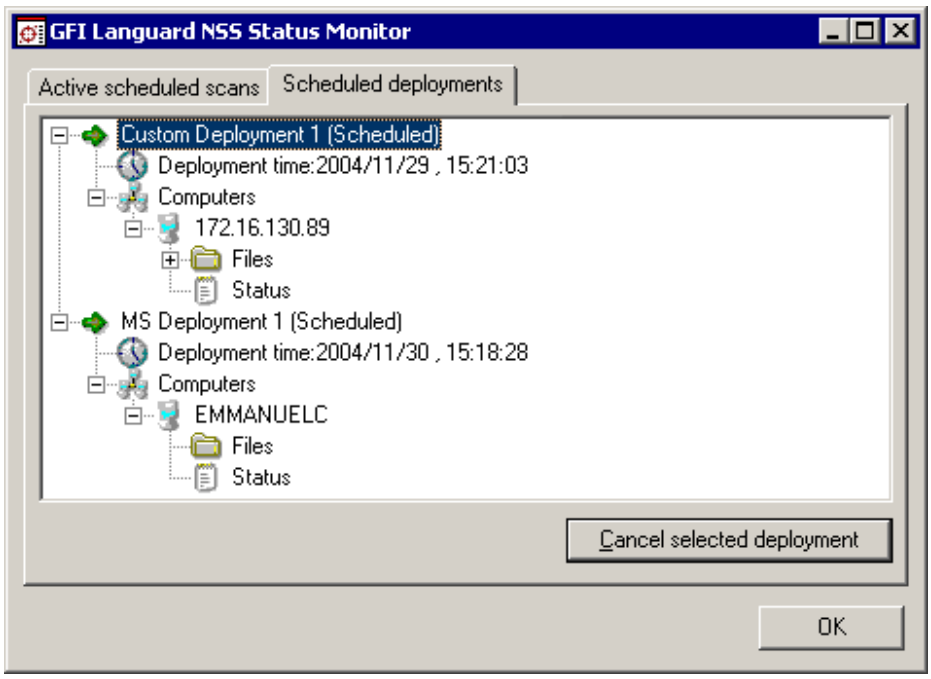
1. Bring up the GFI LANguard N.S.S. Status Monitor.
2. Click on the **Scheduled Scans** tab.

NOTE 1: Cancel any scheduled scan that is in progress by clicking on the **Stop Selected Scan(s)** button.

NOTE 2: From the **Scheduled Scans** tab you can only view and cancel scheduled scans that are in progress.

NOTE 3: View or cancel scheduled scans that have not yet started from the GFI LANguard N.S.S. configuration interface (**Configuration ▸ Scheduled Scans)**.

Viewing the progress of scheduled deployments



Screenshot 121 - Status Monitor: Scheduled deployments

To view scheduled deployments in progress:

1. Bring up the GFI LANguard N.S.S. Status Monitor.
2. Click on the **Scheduled deployments** tab.

NOTE: Cancel any scheduled deployment that is in progress by clicking on the **Cancel Selected deployments** button.

Tools

Introduction

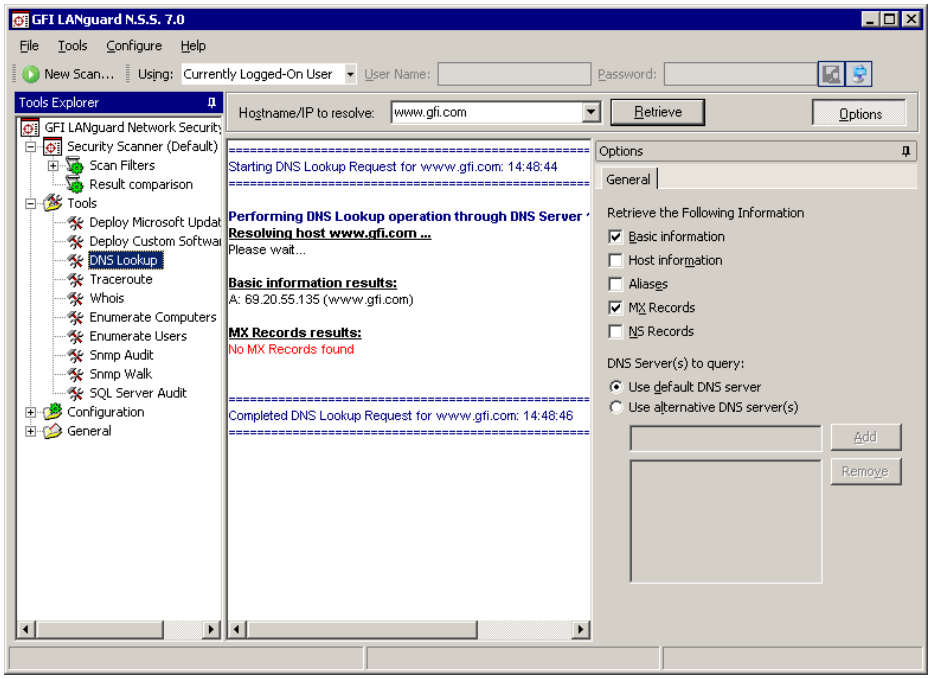
GFI LANguard N.S.S. ships with a default set of network tools which help you troubleshoot common network problems and assist you in the administration of your network.

Use the **Tools** node in the GFI LANguard N.S.S. configuration interface to access the following list of default network tools:

- DNS Lookup
- Whois Client
- Trace Route
- SNMP Walk
- SNMP Audit
- Microsoft SQL Server Audit
- Enumerate Computers
- Enumerate Users.

DNS lookup

Use the **Tools ▸ DNS Lookup** tool to resolve domain names into the corresponding IP address and to retrieve particular information from the target domain (for example, MX record, etc.).



Screenshot 122 - The DNS Lookup tool

To resolve a domain/host name:

1.Click on the **Tools ▸ DNS lookup** node.

2. Specify the hostname to resolve.

3. Specify the information that you wish to retrieve:

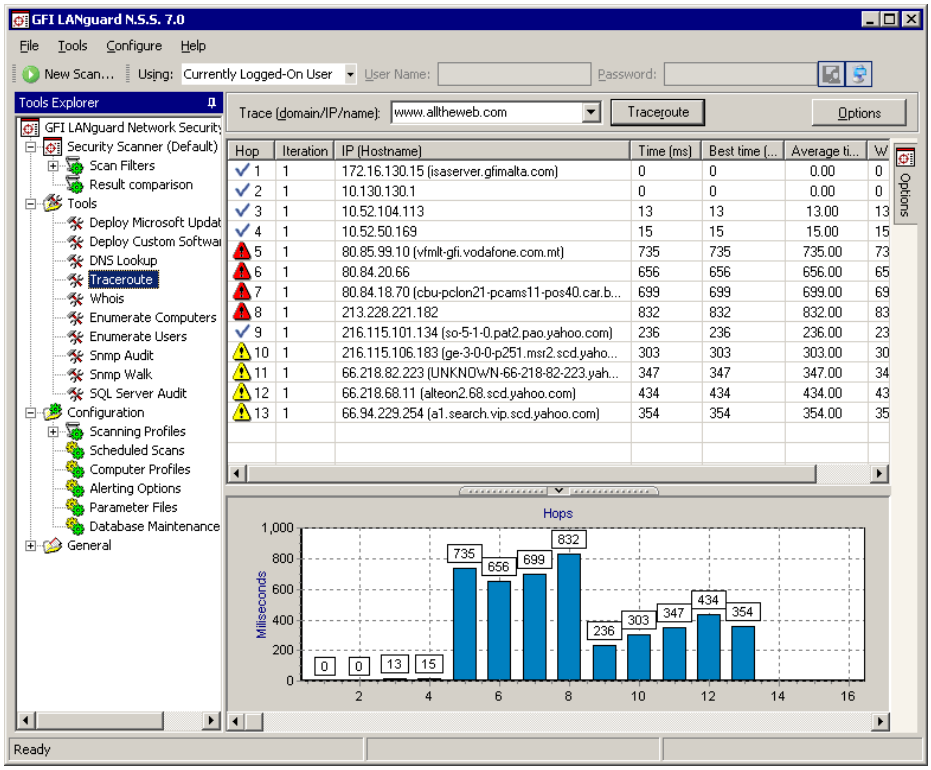
- *'Basic Information'* – Select this option to retrieve the host name and the relative IP address.
- *'Host Information'* – Select this option to retrieve HINFO details. The host information (known as HINFO) generally includes target computer information such as hardware specifications and OS details.

  NOTE: Most DNS entries do not contain this information for security reasons.
- *'Aliases'* – Select this option to retrieve information on the 'A Records' configured on the target domain.
- *'MX Records'* – Select this option to enumerate all the mail servers and the order (i.e. priority) in which they receive and process emails for the target domain.
- *'NS Records'* – Select this option to specify the "name-servers" that are authoritive for a particular domain or sub domain

4. Specify (if required) the alternative DNS server that will be queried by the DNS Lookup tool or leave as default to use the default DNS server.

5. Click on the **Retrieve** button to start the process.

Trace Route



Screenshot 123 - Trace route tool

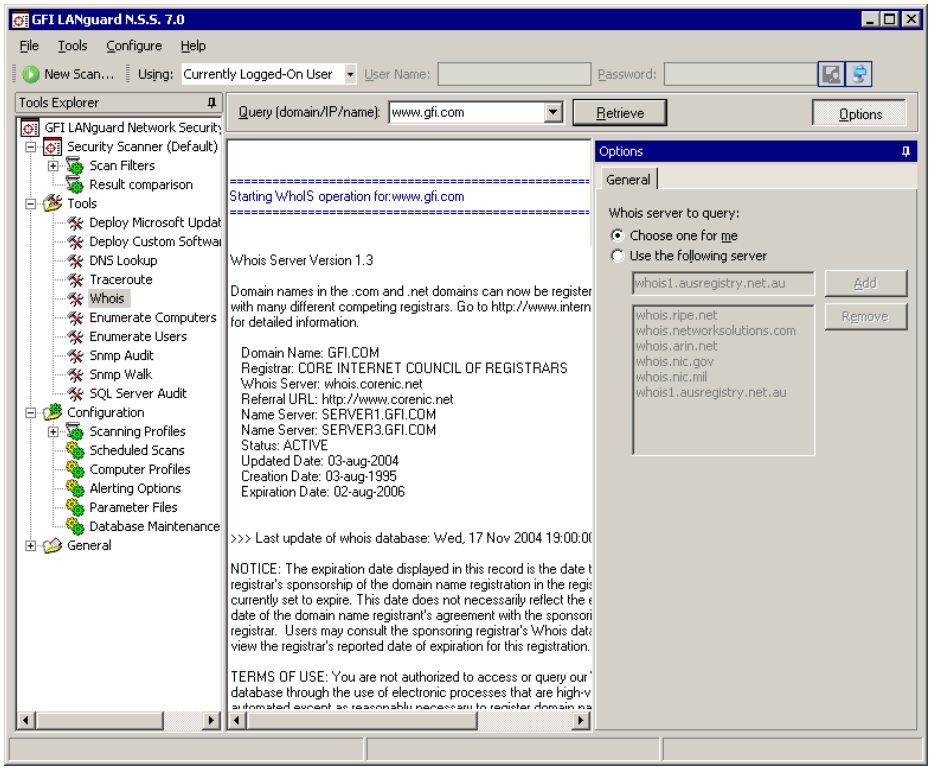
Use the **Tools ▸ Traceroute** tool to identify the path that GFI LANguard N.S.S. followed to reach a target computer. To use this tool:

1. In the 'Trace' dropdown, specify the name/IP or domain to reach.
2. Click on the **Traceroute** button to start the tracing process.

Traceroute will break down, the path taken to a target computer into ''hops'. A hop indicates a stage and represents a computer that was traversed during the process. The information enumerated by this tool includes the IP of traversed computers, the number of times that a computer was traversed and the time taken to reach the respective computer. An icon is also included next to each hop. This icon indicates the state of that particular hop. The icons used in this tool include:

- ✓ Indicates a successful hop taken within normal parameters.
- ⚠ Indicates a successful hop, but time required was quite long.
- ⚠ Indicates a successful hop, but the time required was too long.
- ✗ Indicates that the hop was timed out (> 1000ms).

Whois Client



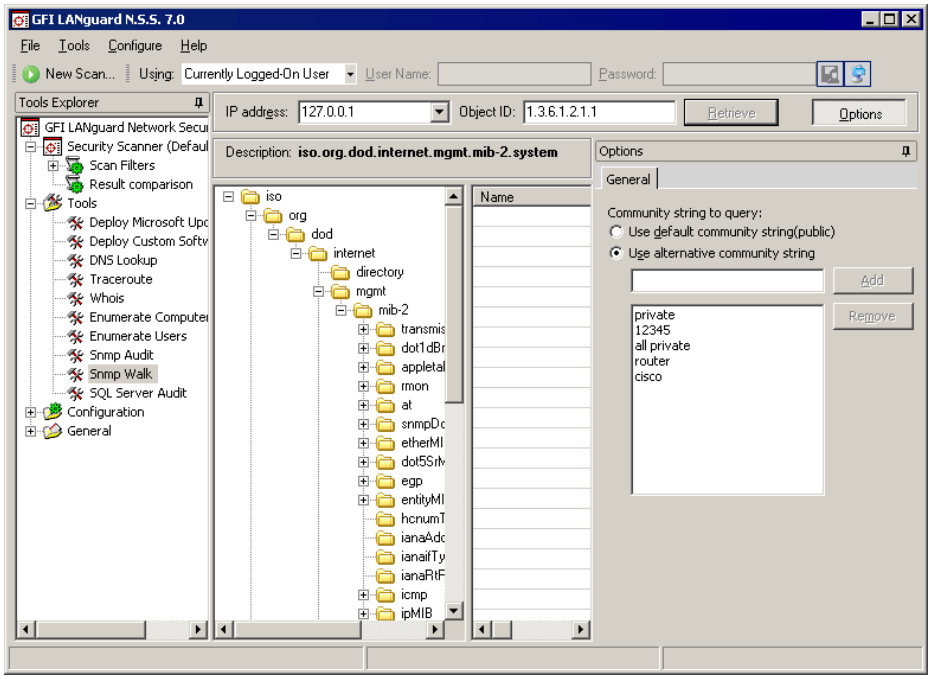
Screenshot 124 - Whois tool

Use the **Tools ▸ Whois Client** tool to look up information on a particular domain or IP address.

Select the Whois Server that will look for your information from the options area on the right of the configuration interface, or leave as default to let the tool automatically select a domain server for you.

To look for information on a particular domain or IP address, specify the domain/IP or hostname in the 'Query' drop down and click on the **Retrieve** button.

SNMP Walk



Screenshot 125 - SNMP Walk

Use the **Tools ▸ SNMP Walk** tool to probe your network nodes and retrieve SNMP information (for example, OID's). To start an SNMP scan on a target:

1. Click on the **Tools ▸ SNMP Walk** node.

2. Specify the IP address of the computer that you wish to scan for SNMP information.

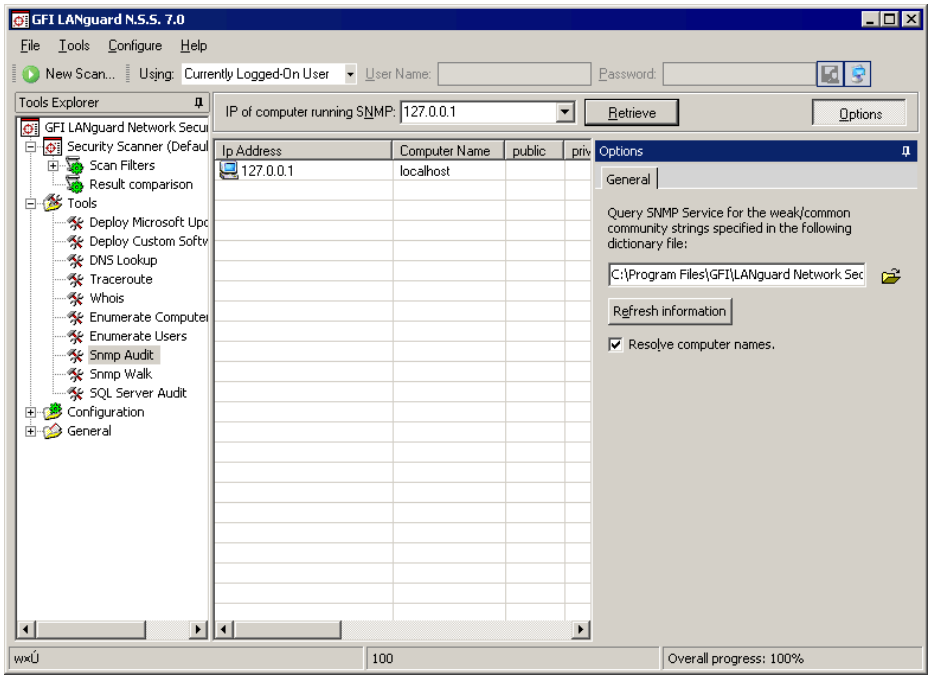
3. Click on the **Retrieve** button to start the process.

NOTE 1: SNMP activity is often blocked at the router/firewall so that Internet users cannot SNMP scan your network.

NOTE 2: It is possible to provide alternative community strings.

NOTE 3: The information enumerated through SNMP can be used by malicious users to attack your system. Unless this service is required it is highly recommended that SNMP is turned off.

SNMP Auditing tool



Screenshot 126 - SNMP Audit tool

Use the **Tools ▸ SNMP Audit** tool to perform SNMP audits on network targets and identify weak community strings.

This tool identifies and reports weak SNMP community strings by performing a dictionary attack using the values stored in its default dictionary file (*snmp-pass.txt)*. You can add new community strings to the default dictionary file by using a text editor (for example, notepad.exe).

You can also direct the 'SNMP Audit' tool to use other dictionary files. To achieve this, specify the path to the dictionary file that you want to from the tool options at the right of the configuration interface.

To perform an SNMP Audit:

1. Click on the **Tools ▸ SNMP Audit** node.
2. Specify the IP address of the computer that you wish to audit.
3. Click on the **Retrieve** button to start the process.

Microsoft SQL Server Audit tool

Use the **Tools ▸ Microsoft SQL Server Audit** tool to perform a security audit on a particular Microsoft SQL server installation. This tool allows you to test the password vulnerability of the ''sa" account (i.e. root administrator), and any other SQL user accounts configured on the SQL Server. During the audit process, this tool will perform dictionary attacks on the SQL server accounts using the credentials specified in the *'passwords.txt'* dictionary file. However, you can also direct the 'SQL Server Audit' tool to use other dictionary files. You can also customize your dictionary file by adding new passwords to the default list.

To perform an SQL Server Audit:

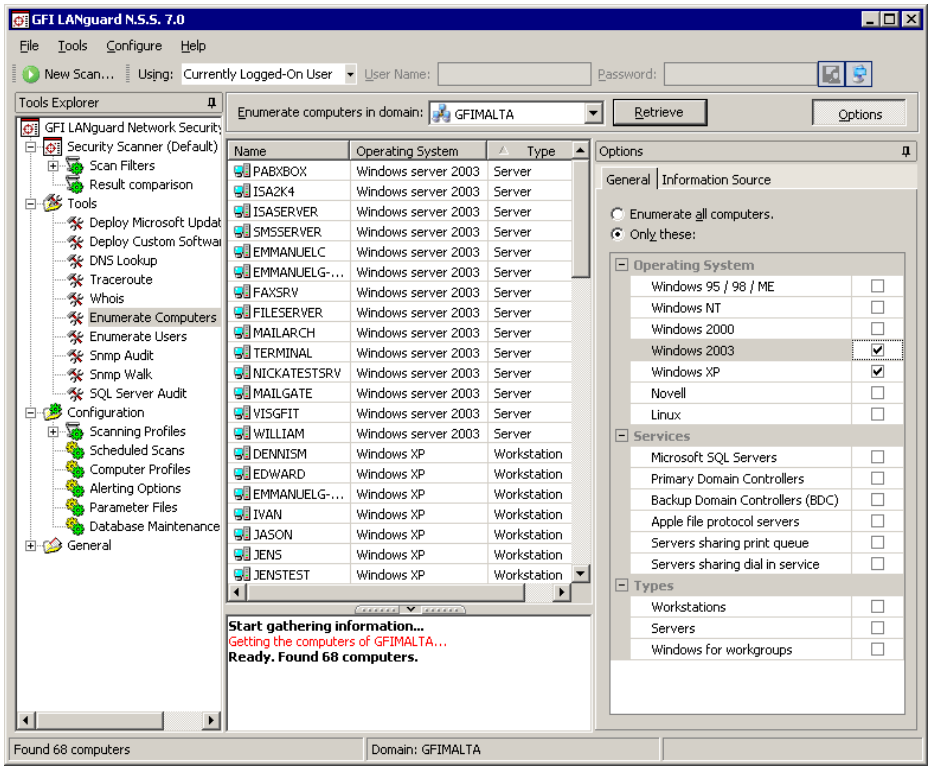
1. Click on the **Tools ▸ SQL Server Audit** node.

2. Specify the IP address of the SQL server that you wish to audit.

NOTE: By default, this tool will check the vulnerability of the administrator/sa account. If you want to perform dictionary attacks on all the other SQL user accounts, select the *'Audit all SQL user accounts'* option and specify the SQL Server logon credentials. These credentials are required to authenticate to the SQL server when retrieving the respective list of user accounts.

3. Click on the **Retrieve** button to start the process.

Enumerate computers tool



Screenshot 127 - Enumerate Computers tool

Use the **Tools ▸ Enumerate Computers** tool to identify domains and workgroups on a network. During execution, this tool will also scan each domain/workgroup discovered so to enumerate their respective computers. The information enumerated by this tool includes; the domain or workgroup name, the list of domain/workgroup computers, the OS installed on the discovered computers, and any additional details that might be collected through NetBIOS.

Computers can be enumerated using one of the following methods:

- From the Active Directory – This method is much faster and will also include computers that are currently switched off.
- Using the Windows Explorer interface – This method enumerates computers through a real-time network scan and therefore it is slower and will not include computers that are switched off.

Use the **Information Source** tab provided in the 'Enumerate Computers' tool to configure your preferred method of computer discovery.

NOTE: For an Active Directory scan, you will need to run the tool (i.e. GFI LANguard N.S.S.) under an account which has access rights to the Active Directory.

Starting a security scan

The 'Enumerate Computers' tool scans your entire network and identifies domains and workgroups as well as their respective computers. After enumerating the computers in a domain or workgroup, you can use this tool to launch a security scan on the listed computers. To start a security scan directly from the 'Enumerate Computers' tool, right click on any of the enumerated computers and select **Scan**.

You can also launch a security scan and at the same time continue using the 'Enumerate Computers' tool. This is achieved by right clicking on any of the enumerated computers and selecting **Scan in background**.

Deploying custom patches

You can use the 'Enumerate Computers' tool to deploy custom patches and third party software on the enumerated computers. To launch a deployment process directly from this tool:

1. Select the computers that require deployment.

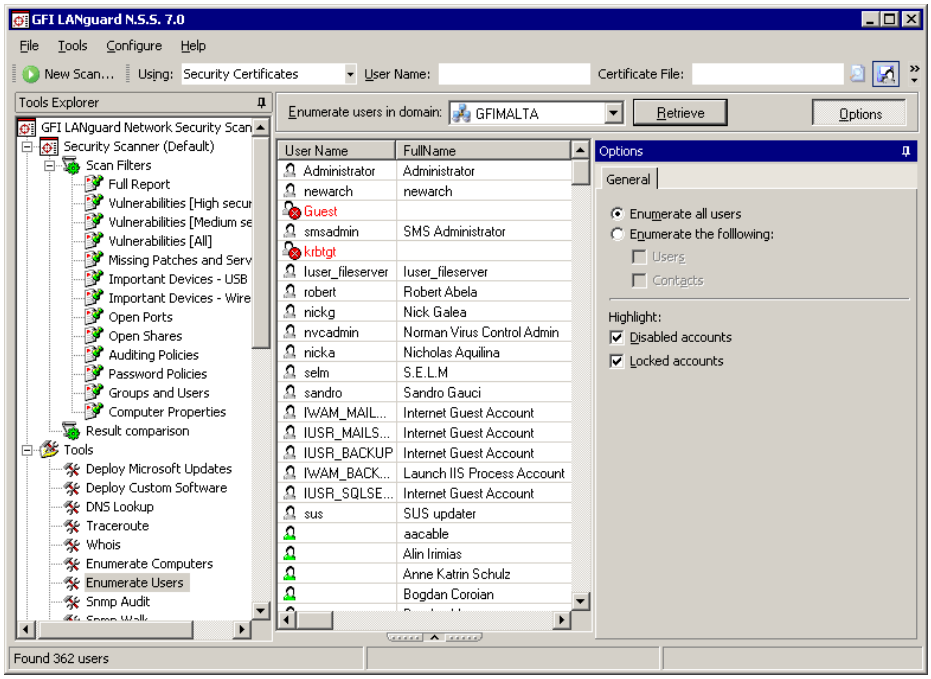
2. Right click on any of the selected computers and select **Deploy Custom Patches**.

Enabling auditing policies

The 'Enumerate Computers' tool also allows you to configure auditing policies on particular computers. This is done as follows:

1. Select the computers on which you want to enable auditing policies.
2. Right click on any of the selected computers and select **Enable Auditing Policies…**. This will launch the Auditing Policies configuration Wizard which will guide you through the configuration process. For more information on how to remotely configure auditing policies on particular targets refer to the 'Security Audit Policy settings' section in the 'Getting started: Performing an audit' chapter.

Enumerate users tool



Screenshot 128 - The Enumerate Users tool dialog

Use the **Tools ▸ Enumerate Users** tool to scan the Active Directory and retrieve the list of all users and contacts included in this database.

To enumerate users and contacts contained in the Active Directory of a domain, select the domain name from the provided list of domains on your network and click on the **Retrieve** button. You can filter the information to be extracted and display only the users or contacts details. In addition, you can optionally configure this tool to highlight disabled or locked accounts. This is achieved through the configuration options included at the right side of the enumerate users tool.

From this tool you can also enable or disable any user account that has been enumerated. This is achieved by right-clicking on the account and selecting **Enable/Disable account** accordingly.

Using GFI LANguard N.S.S. from the command line

By default, GFI LANguard N.S.S. ships with two command line tools; *'lnsscmd.exe'* and *'deploycmd.exe'*. These command line tools allow you to launch network vulnerability scans and patch deployment sessions without bringing up the GFI LANguard N.S.S. configuration interface.

The parameters of these command line tools are configured through a set of command line switches. A complete list of supported switches together with a description of the respective function is provided below.

Using 'lnsscmd.exe' - the command line scanning tool

The *'lnsscmd.exe'* command line target scanning tool allows you to run vulnerability checks against network targets directly from the command line, or through third party applications, batch files and scripts. The *'lnsscmd.exe'* command line tool supports the following switches:

lnsscmd [Target] [/profile=profileName] [/report=reportPath] [/output=pathToXmlFile] [/user=usrname /password=password] [/UseComputerProfiles] [/email=emailAddress] [/DontShowStatus] [/?]

Switches:

- **Target** – Specify the IP / range of IPs or host name(s) to be scanned.
- **/Profile** – (Optional) Specify the scanning profile that will be used during a security scan. If this parameter is not specified, the scanning profile that is currently active in the GFI LANguard N.S.S. will be used.

  NOTE: In the configuration interface, the default (i.e. currently active) scanning profile is denoted by the word (Active) next to its name. To view which profile is active expand the **Configuration ▸ Scanning Profiles** node.
- **/Output** – (Optional) Specify the full path (including filename) of the XML file where the scan results will be saved.
- **/Report** – (Optional) Specify the full path (including filename) of the HTML file where the scan results HTML report will be output/saved.
- **/User** and **/Password** – (Optional) Specify the alternative credentials that the scanning engine will use to authenticate to a target computer during security scanning. Alternatively you can use the **/UseComputerProfiles** switch to use the authentication

credentials already configured in the Computer Profiles (**Configuration ▸ Computer Profiles** node).

- **/Email** – (Optional) Specify the email address on which the resulting report(s) will be sent at the end of this scan. Reports will be emailed to destination through the mail server currently configured in the **Configuration ▸ Alerting Options** node (of the configuration interface).
- **/DontShowStatus** - (Optional) Include this switch if you want to perform silent scanning. In this way, the scan progress details will not be shown.
- **/?** - (Optional) Use this switch to show the command line tool's usage instructions.

NOTE: Always enclose full paths, and profile names within double quotes (i.e. '[path or profile name]') for example, "Default", "c:\temp\test.xml".

The command line target scanning tool allows you to pass parameters through specific variables. These variables will be automatically replaced with their respective value during execution. Supported variables include:

- **%INSTALLDIR%** - During scanning, this variable will be replaced with the path to the GFI LANguard N.S.S. installation directory.
- **%TARGET%** - During scanning this variable will be replaced with the name of the target computer.
- **%SCANDATE%** - During scanning this variable will be replaced with the date of scan.
- **%SCANTIME%** - During scanning this variable will be replaced with the time of scan.

Example: How to launch target computer scanning from the command line tool.

For this example, we will be assuming that a scan with the following parameters is required:

1. Perform a security scan on a target computer having IP address '***130.16.130.1***'.

2. Output the scan results to '***c:\out.xml***' (i.e. XML file)

3. Generate an HTML report and save it in '***c:\result.html***'.

4. Send the HTML report via email to '***lnss@127.0.0.1***'

The command line tool instruction for this particular security scan is:

lnsscmd.exe 130.16.130.1 /Profile="Default" /Output="c:\out.xml" /Report="c:\result.html" /email="lnss@127.0.0.1"

Using 'deploycmd.exe' - the command line patch deployment tool

The *'deploycmd.exe'* command line patch deployment tool allows you to deploy Microsoft patches and third party software on remote targets directly from the command line, or through third party applications, batch files or scripts. The *'deploycmd.exe'* command line tool supports the following switches:

deploycmd [target] [/file=FileName] [/username=UserName /password=Password] [/UseComputerProfiles] [/warnuser] [/useraproval] [/stopservices] [/customshare=CustomShareName] [/reboot] [/rebootuserdecides] [/shutdown] [/deletefiles] [/timeout=Timeout(sec)] [/?]

Switches:

- **Target** – Specify the name(s), IP or range of IPs of the target computer(s) on which the patch(es) will be deployed.
- **/File** – Specify the file that you wish to deploy on the specified target(s).
- **/User** and **/Password** – (Optional) Specify the alternative credentials that the scanning engine will use to authenticate to a target computer during patch deployment. Alternatively you can use the **/UseComputerProfiles** switch to use the authentication credentials already configured in the Computer Profiles (**Configuration ▸ Computer Profiles** node).
- **/warnuser** – (Optional) Include this switch if you want to inform the target computer user that a file/patch installation is in progress. Users will be informed through a message dialog which will be shown on screen immediately before the deployment session is started.
- **/useraproval** – (Optional) Include this switch to request the user's approval before starting the file/patch installation process. This allows users to postpone the file/patch installation process for later (for example, until an already running process is completed on the target computer).
- **/stopservice** – (Optional) Include this switch if you want to stop specific services on the target computer before installing the file/patch.

  NOTE: You cannot specify the services that will be stopped directly from the command line tool. Services can only be added or removed through the configuration interface. For more information on how to specify services to be stopped, refer to the 'Deployment options' section in the 'Patch Management: Deploying custom software' chapter.
- **/customshare** – (Optional) Specify the target share where you wish to transfer the file before it is installed.
- **/reboot** – (Optional Parameter) Include this switch if you want to reboot the target computer after file/patch deployment.
- **/rebootuserdecides** – (Optional Parameter) Include this switch to allow the current target computer user to decide when to reboot his computer (after patch installation).
- **/shutdown** - (Optional Parameter) Include this switch if you want to shutdown the target computer after the file/patch is installed.
- **/deletefiles** – (Optional Parameter) Include this switch if you want to delete the source file after it has been successfully installed.
- **/timeout** – (Optional Parameter) Specify the deployment operation timeout. This value defines the time that a deployment process will be allowed to run before the file/patch installation is interrupted.

- ***/?*** - (Optional) Use this switch to show the command line tool's usage instructions.

Example: How to launch a patch deployment process from the command line tool.

For this example, we will be assuming that a patch deployment session with the following parameters is required:

1. Deploy a file called '***patchA001002.XXX***'
2. On target computer '***TMjason***'.
3. Reboot the target computer after successful deployment of the file.

The command line tool instruction for this particular patch deployment session is:

deploycmd TMjason /file="patchA001002.XXX" /reboot

Adding vulnerability checks via custom conditions or scripts

Introduction

GFI LANguard N.S.S. allows you to enhance the already provided network scanning capabilities by adding new custom vulnerability checks.

Custom vulnerability checks can be created using scripts or by configuring a set of custom vulnerabilities. Scripts can be created using any VB script compatible scripting language. By default, GFI LANguard N.S.S. ships with a script editor which you can use to create your custom scripts.

New checks must be included in the list of checks supported by GFI LANguard N.S.S. Use the **Vulnerabilities** tab to add new checks to the default list of vulnerability checks on a scan profile by scan profile basis.

NOTE: Only expert users should create new vulnerability checks. Scripting errors and wrong configurations in a vulnerability check can result in false positives or provide no vulnerability information at all.

GFI LANguard N.S.S. VBscript language

GFI LANguard N.S.S. supports and runs scripts written in VBscript compatible languages. Use VBscript compatible languages to create custom scripts which can be run against your network targets.

Security auditing scripts can be developed using the script editor which ships with GFI LANguard Network Security Scanner. This built-in script editor includes syntax highlighting capabilities as well as debugging features which support you during script development. Open the script editor from **Start ▸ Programs ▸ GFI LANguard Network Security Scanner 7.0 ▸ LNSS Script Debugger**.

NOTE: For more information on how to develop scripts using the built-in script editor, refer to the 'Scripting documentation' help file included in **Start ▸ Programs ▸ GFI LANguard Network Security Scanner 7.0 ▸ LNSS Scripting documentation**.

IMPORTANT NOTE: GFI does not support requests related to problems in custom scripts. You can post any queries that you may have about GFI LANguard N.S.S. scripting on the GFI LANguard forums at http://forums.gfi.com/. Through this forum you will be able to share scripts, problems and ideas with other GFI LANguard N.S.S. users.

GFI LANguard N.S.S. SSH Module

GFI LANguard N.S.S. includes an SSH module which handles the execution of vulnerability scripts on Linux/UNIX based systems.

The SSH module determines the result of vulnerability checks through the console (text) data produced by an executed script. This means that you can create custom Linux/UNIX vulnerability checks using any scripting method that is supported by the target's Linux/UNIX OS and which outputs results to the console in text.

Keywords:

The SSH module can run security scanning scripts through its terminal window. When a security scan is launched on Linux/UNIX based target computers, vulnerability checking scripts are copied through an SSH connection to the respective target computer and run locally.

The SSH connection is established using the logon credentials (i.e. username and password/SSH Private Key file) specified prior to the start of a security scan.

The SSH module can determine the status of a vulnerability check through specific keywords present in the text output of the executed script. These keywords are processed by the module and interpreted as instruction for the GFI LANguard Network Security Scanner. Standard keywords identified by the SSH module include:

- **TRUE:**
- **FALSE:**
- **AddListItem**
- **SetDescription**
- **!!SCRIPT_FINISHED!!**

Each of these keywords triggers an associated and specific process in the SSH Module. The function of each keyword is described below:

- ***TRUE: / FALSE:*** - These strings indicate the result of the executed vulnerability check/script. When the SSH module detects a TRUE: it means that the check was successful; FALSE: indicates that the vulnerability check has failed.
- ***AddListItem*** – This string triggers an internal function which adds results to the vulnerability check report (i.e. scan results). These results are shown in the GFI LANguard N.S.S. configuration interface after completion of a scan. This string is formatted as follows:

  AddListItem([[[[parent node]]]],[[[[actual string]]]])

  - ***[[[[parent node]]]]*** - Includes the name of the scan results node to which the result will be added.
  - ***[[[[actual string]]]]*** - Includes the value that will be added to the scan results node.

  NOTE: Each vulnerability check is bound to an associated scan result node. This means that *'AddListItem'* results are by default included under an associated/default vulnerability node. In this way, if the parent node parameter is left empty, the function will add the specified string to the default node.

- ***SetDescription*** – This string triggers an internal function that will overwrite the default description of a vulnerability check with a new description. This string is formatted as follows:***SetDescription([New description])***
- ***!!SCRIPT_FINISHED!!*** – This string marks the end of every script execution. The SSH module will keep looking for this string until it is found or until a timeout occurs. If a timeout occurs before the '*!!SCRIPT_FINISHED!!*' string is generated, the SSH module will classify the respective vulnerability check as failed.

IMPORTANT NOTE: It is imperative that every custom script outputs the *'!!SCRIPT_FINISHED!!'* string at the very end of its checking process.

Adding a vulnerability check that uses a custom VB (.vbs) script

Use the script editor which ships with GFI LANguard N.S.S. to create custom scripts that can be run against your network targets to identify specific vulnerabilities. To create new vulnerability checks that use custom vbscripts you must do as follows:

- **Step 1 : Create the script**
- **Step 2: Add the new vulnerability check**:

The following are examples of how this is done.

Step 1 : Create the script

1. Launch the Script Debugger from **Start ▸ Programs ▸ GFI LANguard Network Security Scanner 7.0 ▸ LNSS Script Debugger**.

2. Go on **File ▸ New…**

3. Create a script. For this example use the following dummy script code.

```
Function Main
echo "Script has run successfully"
Main = true
End Function
```

4. Save the script in '*C:\Program Files\GFI\LANguard Network Security Scanner 7.0\Data\Scripts\myscript.vbs'*.

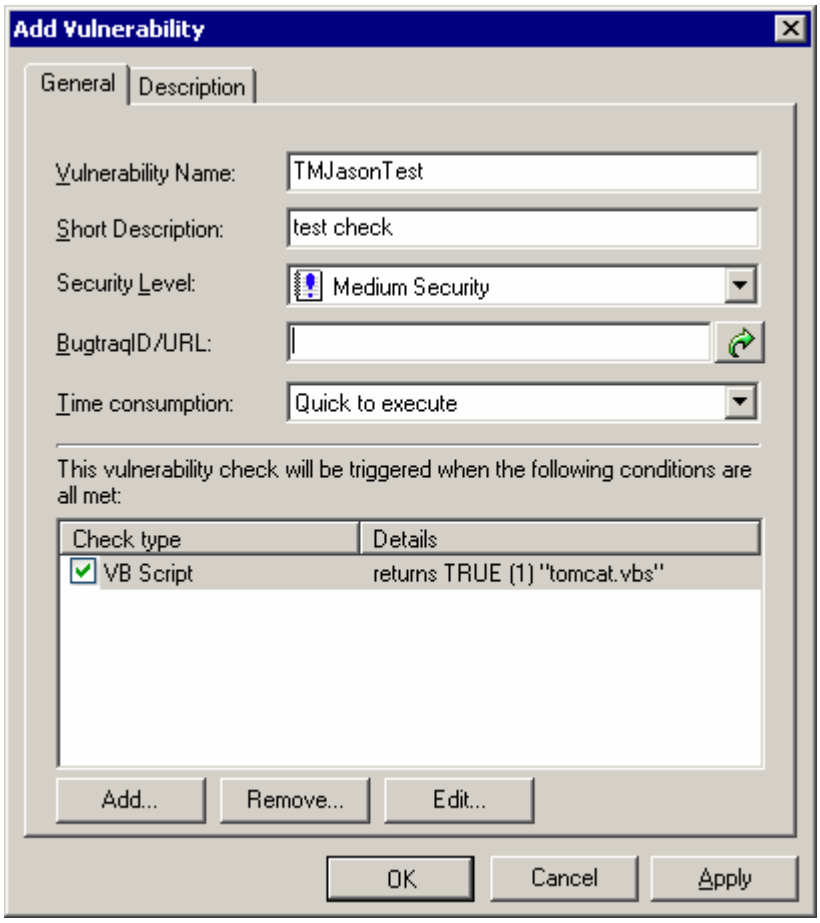
Step 2: Add the new vulnerability check:

1. Open the GFI LANguard N.S.S. configuration interface.

2. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile where the new vulnerability check will be added.

3. Click on the **Vulnerabilities** tab.

4. From the middle pane, select the category in which the new vulnerability check will be included (for example, DNS Vulnerabilities).



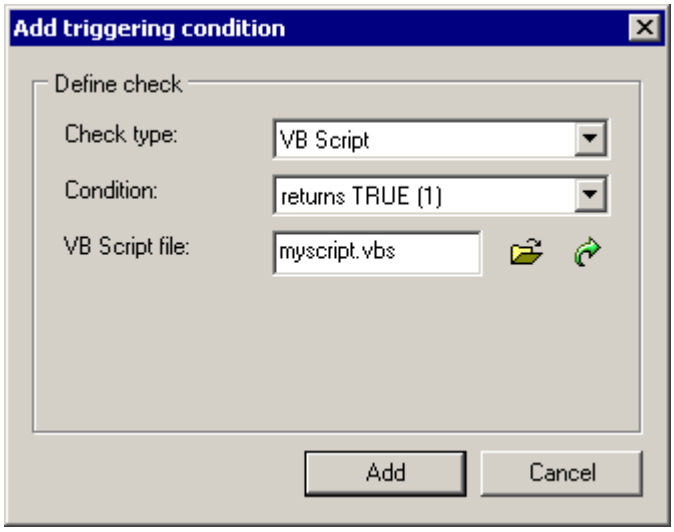
Screenshot 129 - The new vulnerability check dialog

5. Click on the **Add** button. This will bring up the new vulnerability check dialog.

6. Specify the basic details such as the vulnerability name, short description, security level,

and BugtraqID/URL (if applicable). Optionally, you can also specify how long the check takes to execute.

7. Click on the **Add…** button. This will bring up the check triggering conditions dialog.



Screenshot 130 - The check triggering conditions dialog

8. From the *'Check type:'* drop down select 'VBScript' and specify the triggering condition in the 'Condition' field.

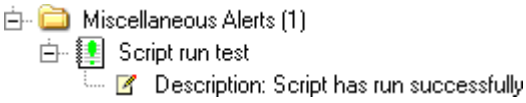
9 Click on the (open) button and select the custom VBscript file that will be executed by this check. For this example select '*myscript.vbs'*.

10. Click on **Add** to include the vulnerability check to the list.

11. Select the relative vulnerability check box so that it is include it in the next network vulnerability scan.

Testing the vulnerability check/script used in our example

Scan your local host computer using the scanning profile where the new check was added.



In the scan results, a vulnerability warning will be shown in the **Vulnerabilities ▸ Miscellaneous Alerts** node of the scan results.

Adding a vulnerability check that uses a custom shell script

In GFI LANguard N.S.S. you can add vulnerability checks which use custom shell scripts to check Linux and UNIX based targets. These checks are remotely executed over SSH by the SSH module. Script can be written using any scripting language that outputs text results to the console.

In the following example we will create a vulnerability check (for Linux based targets) which uses a script written in Bash. The vulnerability check in this example will test for the presence of a dummy file called 'test.file'

Step 1 : Create the script

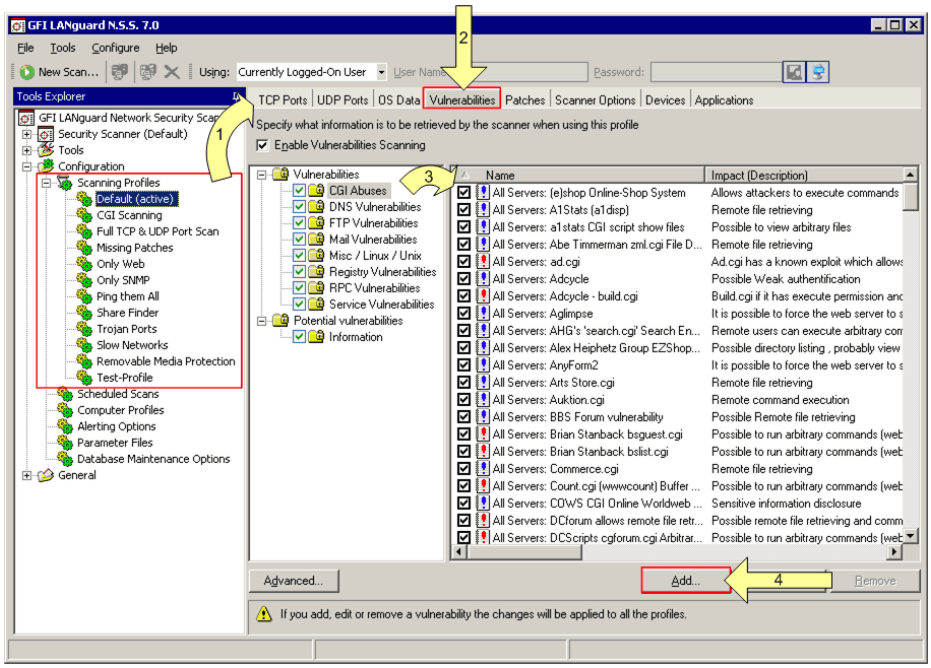
1. Launch your favorite text file editor.

2. Create a new script using the following code:

```
#!/bin/bash
if [ -e test.file ]
then
        echo "TRUE:"
else
        echo "FALSE:"
fi
echo "!!SCRIPT_FINISHED!!"
```

3. Save the file in '*C:\Program Files\GFI\LANguard Network Security Scanner 7.0\Data\Scripts\myscript.sh*"

Step 2: Add the new vulnerability check:



Screenshot 131 - Adding a new vulnerability check

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile where you wish to add the new vulnerability check.

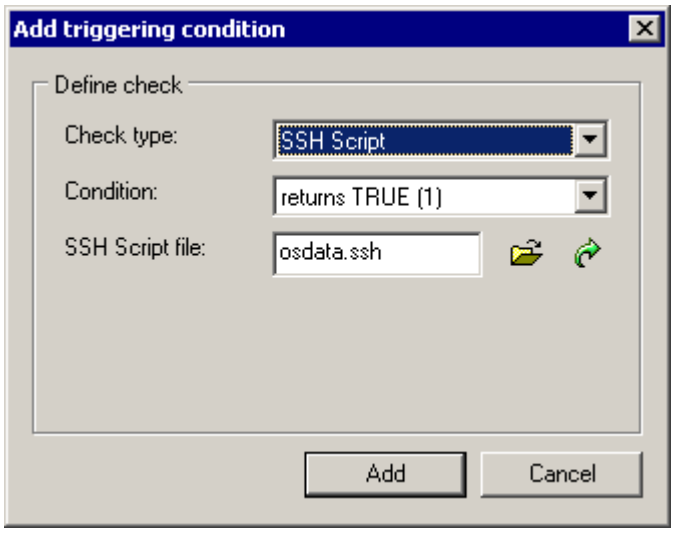
2. Click on the **Vulnerabilities** tab.

3. From the middle pane, select the category in which the new vulnerability check will be included (for example, DNS Vulnerabilities).

4. Click on the **Add** button. This will bring up the new vulnerability check dialog.

7. Specify the basic details such as the vulnerability name, short description, security level, and BugtraqID/URL (if applicable). Optionally, you can also specify how long the check takes to execute.

8. Click on the **Add…** button. This will bring up the check triggering conditions dialog.



Screenshot 132 - The check triggering conditions dialog

9. From the *'Check type:'* drop down select 'SSH Script' and specify the triggering condition in the 'Condition' field.

10 Click on the (open) button and select the custom SSH script file that will be executed by this check. For this example use '*myscript.sh'*.

11. Click on **Add** to include the vulnerability check to the list.

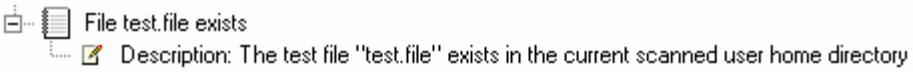
12. From the list of checks, select the relative vulnerability check box so that it is include it in the next network vulnerability scan.

Testing the vulnerability check/script used in our example

1. Log on to a Linux target computer and create a file called *'test.file'*. This check will generate a vulnerability alert if a file called *'test.file'* is found.

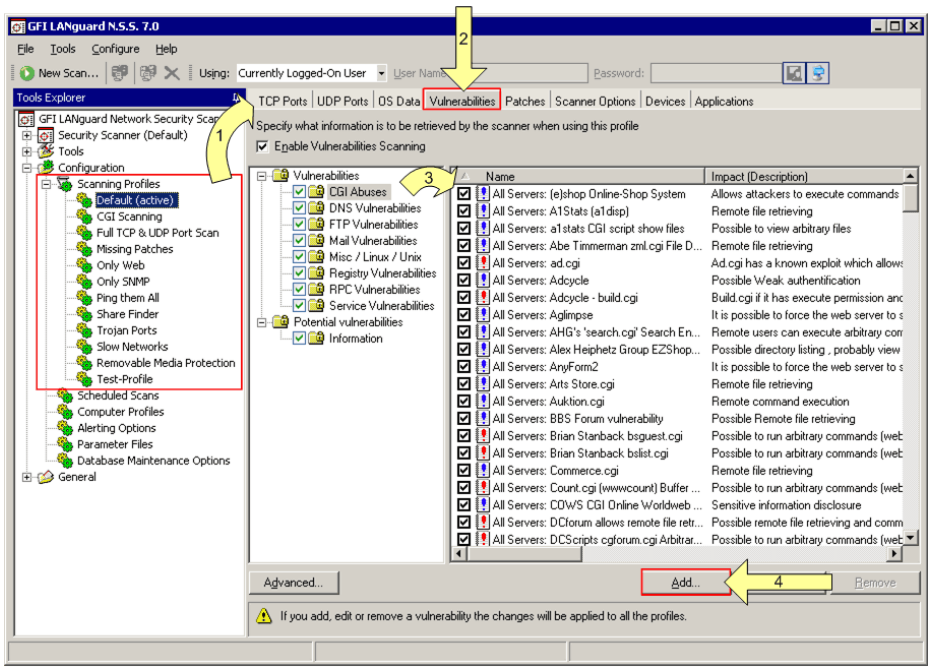
2. Launch a scan on the Linux target where you created the file.

3. Check you scan results. The **Vulnerabilities** node will the vulnerability warning shown below.



Adding a CGI vulnerability check

When creating new CGI vulnerability checks, you do not need to create a VB or SSH script. In fact, the scanning functionality of CGI checks is configurable through the options included in the check properties dialog.



Screenshot 133 - Creating a CGI vulnerability check

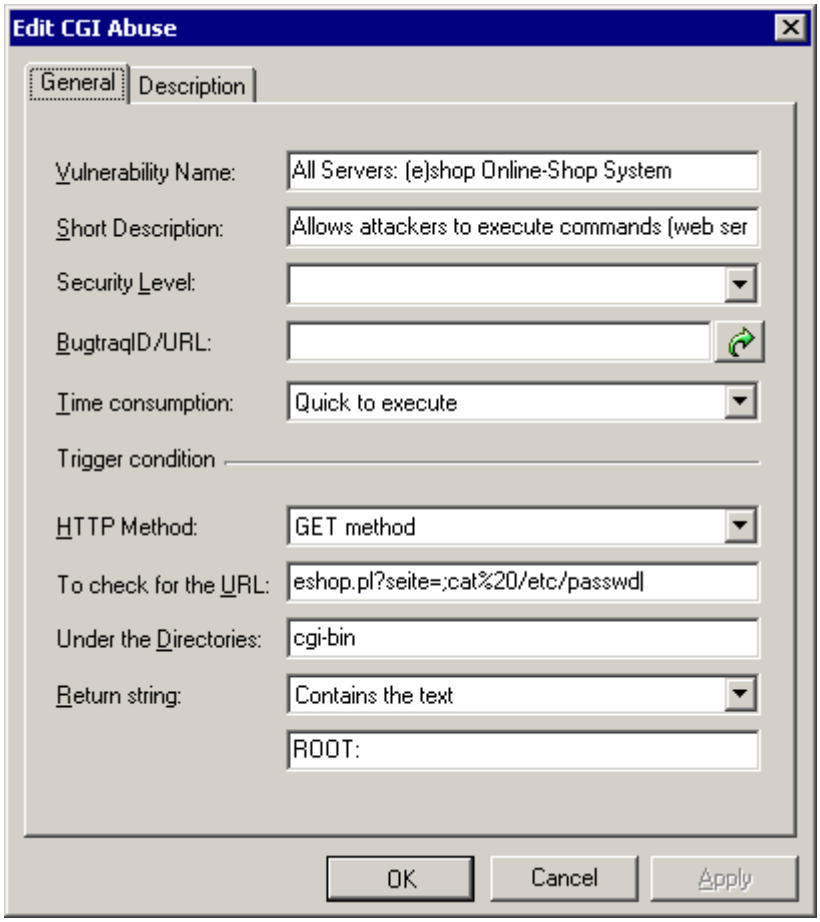
To create a new CGI vulnerability check:

1. Go to the **Configuration ▸ Scanning Profiles ▸ CGI Scanning** node.

2. From the right pane, click on the **Vulnerabilities** tab.

3. From the middle pane, select the **CGI Abuses** node.

4. Click on the **Add** button. This will bring up the new CGI vulnerability check dialog.



Screenshot 134 - The new CGI vulnerabilities check dialog

5. Specify the basic details of this vulnerability check such as the name, short description, security level, and BugtraqID/URL (if applicable). Optionally, you can also specify how long the check takes to execute.

6. In the 'Trigger condition' area of the dialog, specify the following parameters:

- *'HTTP method'* – Specify the type of http request that the CGI vulnerability check will use when querying information. CGI vulnerability checks supports 2 HTTP methods which are the *'GET method'* and the *'HEAD method'*.
- *'To check for the URL:'* - Specify the name of the CGI script that will be executed during target computer scanning.
- *'Under the Directories:'* – Specify the directories where the CGI script is located.
- *'Return String'* – Specify the expected result string. GFI LANguard N.S.S. defines if this check is successful by comparing the specified return string to the text in the check results. This text comparison is carried out using specific conditions which are set by selecting one of the following options:

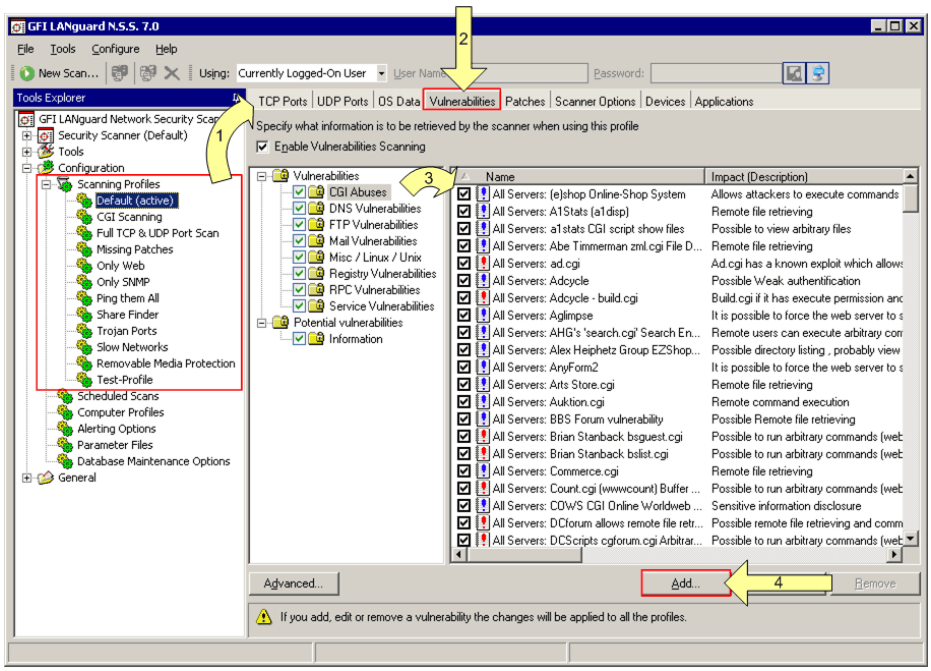
- *'Contains any text'* – Select this option if you want the check to be successful when any part of the specified string is present in the check results.
- *'Contains the text'* – Select this option if you want the check to be successful ONLY when the specified string is entirely present in the check results.
- *'Contains the text'* – Select this option if you want the check to be successful ONLY when the specified string is NOT present in the check results.

7. Click on **OK** to save the configuration settings.

NOTE: To automatically include new checks in the next target computer scan, click on the **Advanced** button and set the *'New vulnerabilities are enabled by default'* option to 'Yes'.

Adding other vulnerability checks

GFI LANguard N.S.S. allows you to create particular vulnerability checks which do not use VB or SSH scripts. These checks are based on the same concepts of CGI vulnerability checks, but with different configuration parameters and options.



Screenshot 135 - Creating a CGI vulnerability check

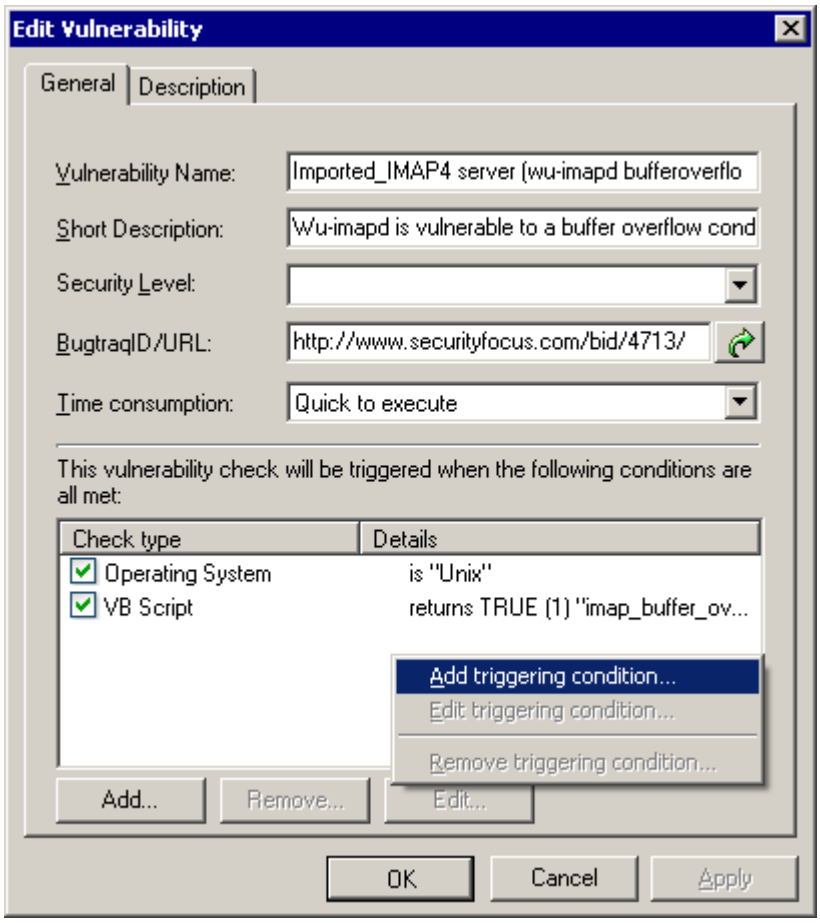
To create these type of checks:

1. Expand the **Configuration ▸ Scanning Profiles** node and select the scanning profile where you wish to add the new vulnerability check.

2. From the right pane, click on the **Vulnerabilities** tab.

3. From the middle pane, select the category where you wish to create the new vulnerability check.

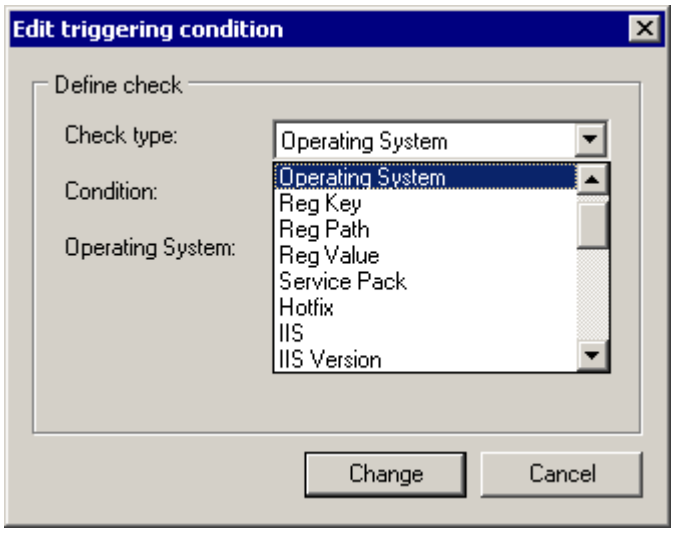
4. Click on the **Add** button. This will bring up the new vulnerability check dialog.



Screenshot 136 - The new vulnerability check dialog

5. Specify the basic details such as the vulnerability name, short description, security level, and BugtraqID/URL (if applicable). Optionally, you can also specify how long the check takes to execute.

6. Click on the **Add…** button. This will bring up the check triggering conditions dialog.



Screenshot 137 - The check triggering conditions dialog

7. From the 'Check type:' drop down select the required check type and specify a corresponding trigger condition in the 'Condition' field. A

list of the supported check types and their respective trigger conditions is included below:

Supported Check Type	Supported Trigger Conditions
• Operating System	• Is • Is Not
• Registry Key*	• Exists • Not Exists
• Registry Path *	• Exists • Not Exists
• Registry Value	• Is Equal With • Is Not Equal With • Is Less Than • Is Greater Than
• Service Pack	• Is • Is Not • Is Lower Than • Is Higher Than
• Hot fix	• Is Installed • Is Not Installed
• IIS	• Is Installed • Is Not Installed
• IIS Version	• Is • Is Not • Is Lower Than • Is Higher Than
• RPC Service	• Is Installed • Is Not Installed
• NT Service	• Is Installed • Is Not Installed
• NT Service running	• Is running • Is not running
• NT Service startup type	• Automatic • Manual • Disabled
• Port (TCP)	• Is Open • Is Closed
• UDP Port	• Is Open • Is Closed
• FTP banner **	• Is • Is Not
• HTTP banner **	• Is • Is Not
• SMTP banner **	• Is • Is Not
• POP3 banner **	• Is • Is Not

• DNS banner **	• Is • Is Not
• SSH banner **	• Is • Is Not
• Telnet banner **	• Is • Is Not
• Script	• Returns True (1) • Returns False (0)
• SSH Script	• Returns True (TRUE:) • Returns False (FALSE:)

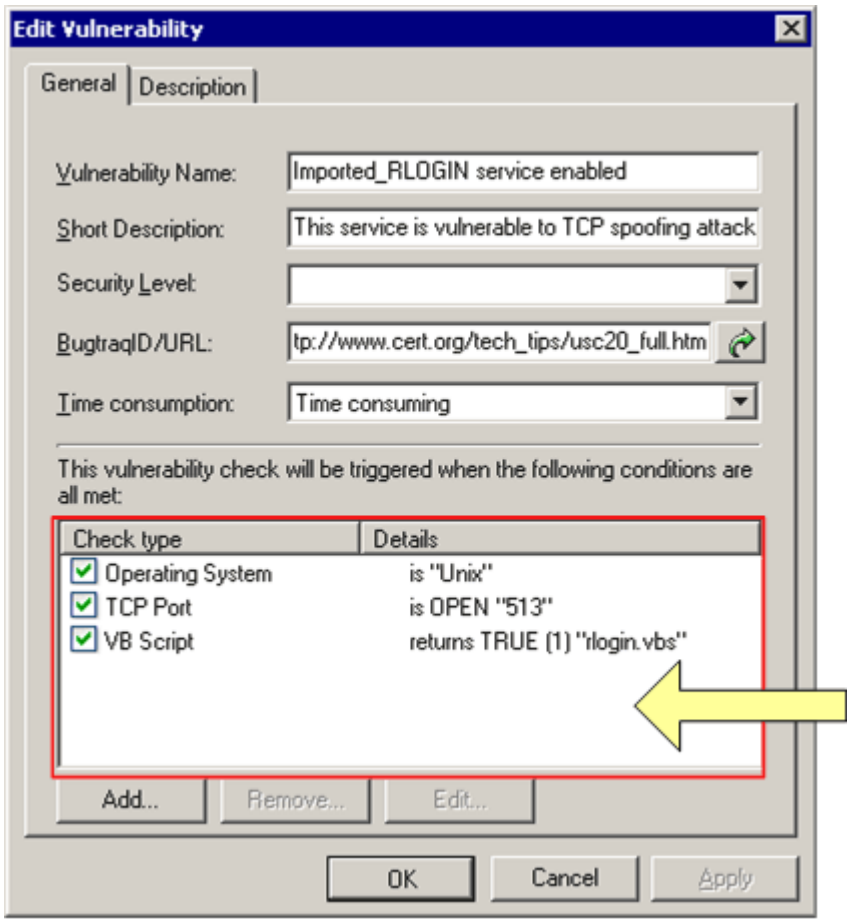
* *Works only under HKEY_LOCAL_COMPUTER*

** *You can build expressions that check for Version 1.0 through 1.4, and Version 2.0 through 2.2, but not Version 1.5 through 1.9. See the examples below.*

8. Click on **Add** to include the selected condition in the vulnerability check.

9. Click on the **OK** button to save the settings and exit from the configuration dialog.

Additional Information:



Screenshot 138 - A vulnerability check with multiple trigger conditions

1. Each vulnerability check can include multiple trigger conditions. In this way, you can rest assured that a vulnerability check is triggered

only when required (i.e. if all the specified trigger criteria/conditions are met).

Miscellaneous

Enabling NetBIOS on a network computer

1. Log on to the target computer with administrative rights

2. Navigate to the Windows Control Panel (**Start ▸ Control Panel**) and double-click on 'Network Connections' icon.

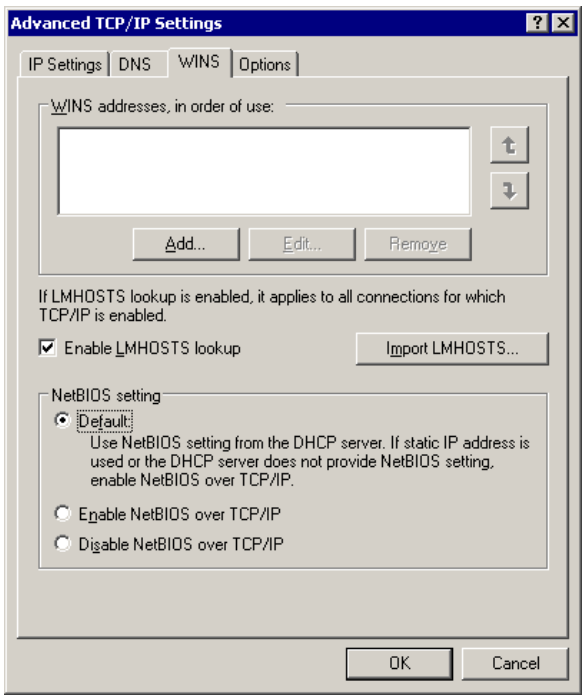
Local Areas Connection' icon

3. Right click on 'Local Areas Connection' icon of the NIC card that you wish to configure and select **Properties**.

4. Click on *'Internet Protocol (TCP/IP)'* and select **Properties**.

5. Click on the **Advanced** button.

6. Click on the **WINS** tab.



Screenshot 139 - Local Areas Connection properties: WINS tab

7. Select the *'Default'* option from the 'NetBIOS Setting' area.

NOTE: If static IP is being used or the DHCP server does not provide NetBIOS setting, select the *'Enable NetBIOS over TCP/IP'* option instead.

8 Click on **OK** and exit the 'Local Area Properties' dialog(s).

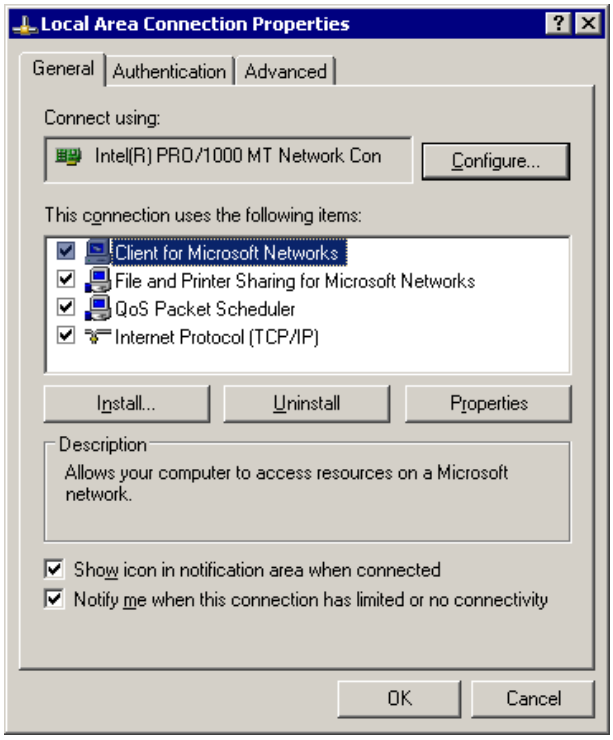
Installing the Client for Microsoft Networks component on Windows 2000 or higher

The Client for Microsoft Networks is an essential networking software component for the Microsoft Windows family of operating systems. A Windows computer must run the Client for Microsoft Networks to remotely access files, printers and other shared network resources. These step-by-step instructions explain how to verify that the client is present and, if not, how to install it.

1. Navigate to the Windows Control Panel (**Start ▸ Settings ▸ Control Panel**).

2. Right click on the *"Local Area Connection"* item and select **Properties**. This will bring up the 'Local Area Connection Properties' dialog.

NOTE: If the computer runs any older version of Windows, like Windows 95 or Windows 98, locate and right click on Network Neighborhood, then choose **Properties**. Alternatively, navigate to Control Panel and open the *'Network'* item.



Screenshot 140 - Local Area Connection Properties dialog

3. From the **General** tab which opens by default, select the checkbox next to *'Client for Microsoft Networks'* and click on **Install...** to begin the installation process.

NOTE 1: If *'Client for Microsoft Windows'* checkbox is already selected, then the component is already installed.

NOTE 2: If the network is currently active, you may not see any checkboxes in the window. In this case, click the **Properties** button one more time to reach the full **General** tab.

NOTE 3: If the computer runs any older version of Windows, view the **Configuration** tab and verify if *'Client for Microsoft Windows'* is

present in the displayed list. If not, install the component by clicking on the **Add...** button.

4. From the new dialog on display, select '*Client*' and click on **Add...** to continue.

5. From the list of manufacturers at the right of the active window choose *'Microsoft'*. Then, choose "Client for Microsoft Windows" from the list of Network Clients on the right side of the window. Click on the **OK** button to continue.

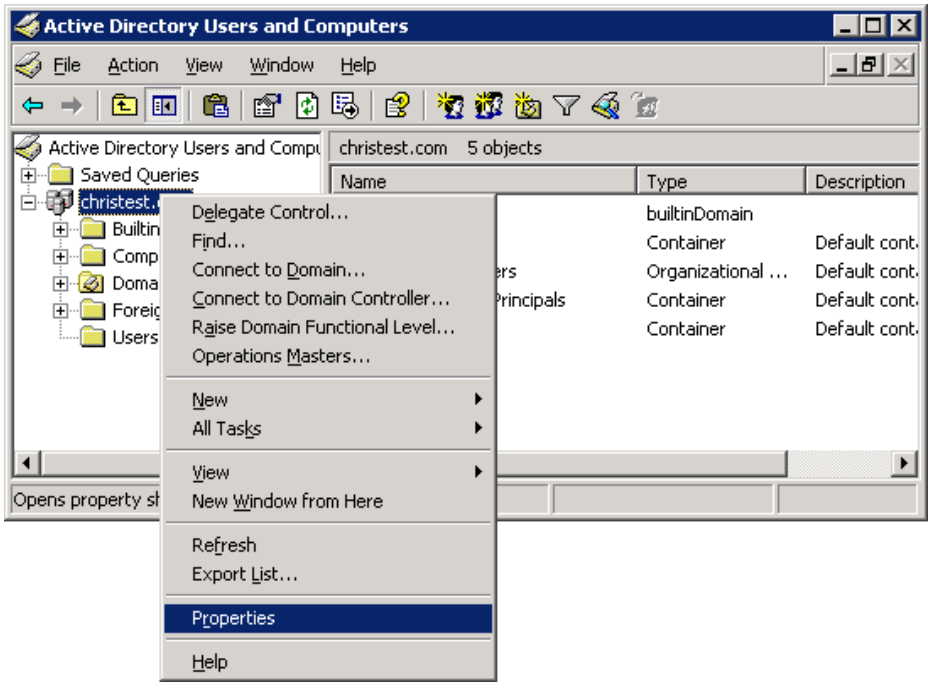
6. To finalize the installation, click on the **OK** button and reboot the computer. After the computer has restarted, Client for Microsoft Windows will be automatically installed.

Configuring Password Policy Settings in an Active Directory-Based Domain

NOTE: You must be logged on as a member of the Domain Admins group.

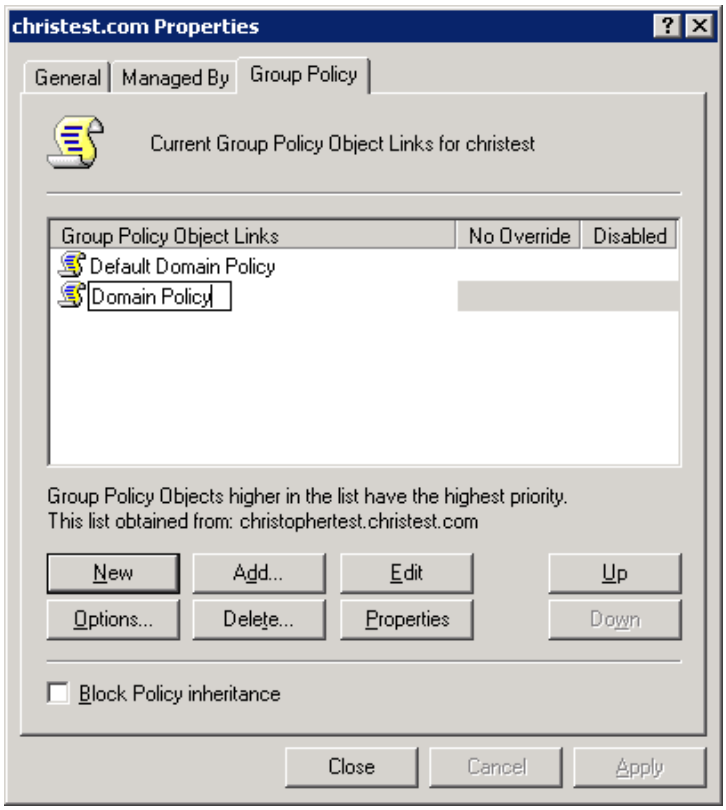
To implement password policies on network computers belonging to an Active Directory domain:

1. Navigate to the Control Panel (**Start ▸ Settings ▸ Control Panel**) and open the 'Administrative Tools'.



Screenshot 141 - Active Directory Users and Computers configuration dialog

2. Open the 'Active Directory Users and Computers'. Right click on the root container of the domain and select **Properties**.



Screenshot 142 - Configuring a new Group Policy Object (GPO)

3. In the properties dialog, click on the **Group Policy** tab. Then click on **New** to create a new Group Policy Object (GPO) in the root container.

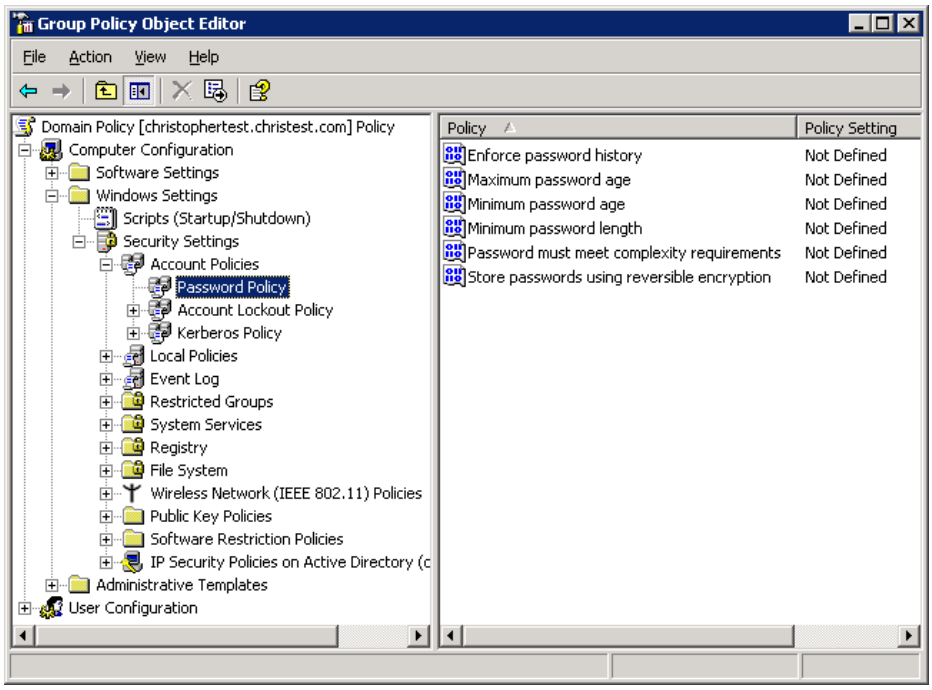
4. Specify the name of the new group policy (for example, "Domain Policy") and then click on **Close**.

NOTE: Microsoft recommends that you create a new Group Policy Object rather than editing the default policy (called 'Default Domain Policy'). This makes it much easier to recover from serious problems with security settings. If the new security settings create problems, you can temporarily disable the new Group Policy Object until you isolate the settings that caused the problems.

5. Right click on the root container of your domain and select **Properties**. This will bring up again the Domain Properties dialog.

6. Click on the **Group Policy** tab, and select the new Group Policy Object Link that you have just created (for example, *'Domain Policy'*).

7. Click on **Up** to move the new GPO to the top of the list, and then click on **Edit** to open the Group Policy Object Editor.



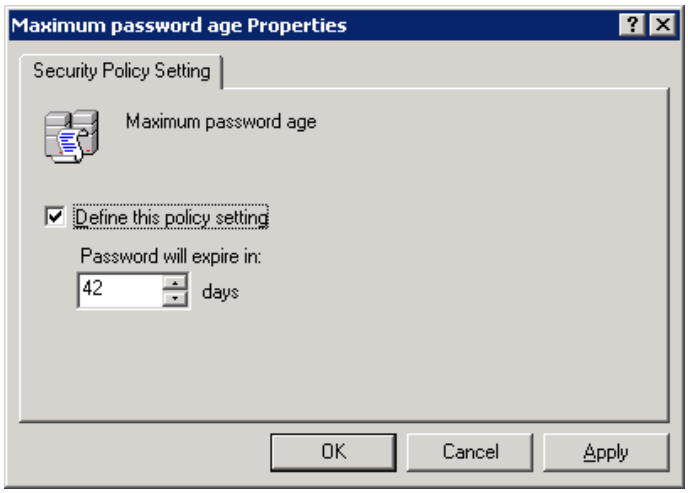
Screenshot 143 - The Group Policy Object Editor

8. Expand the **Computer Configuration** node and navigate to **Windows Settings ▸ Security Settings ▸ Account Policies ▸ Password Policy** folder.

Screenshot 144 - Configure the GPO password history

9. From the right pane, double-click on the *'Enforce password history'* policy. Then select the *'Define this policy setting'* option, and set the *'Keep password history'* value to '24'.

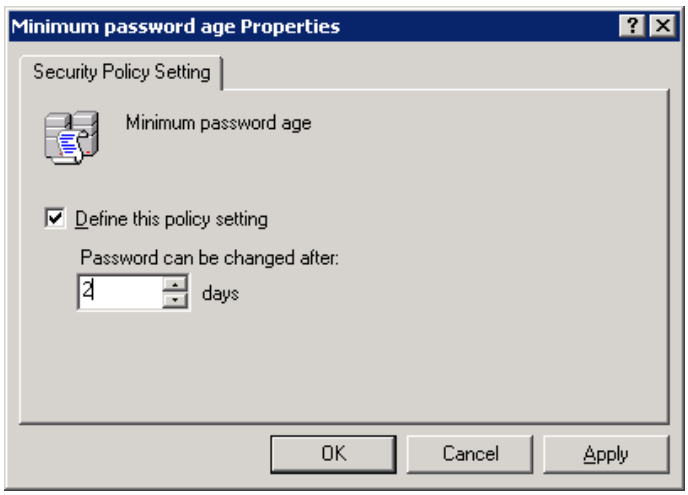
10. Click on the **OK** button to close the dialog.



Screenshot 145 - Configuring GPO password expiry

11. From the right pane, this time double-click on the *'Maximum password age*' policy. Then select the *'Define this policy setting'* option and set the *'Password will expire'* value to 42 days.

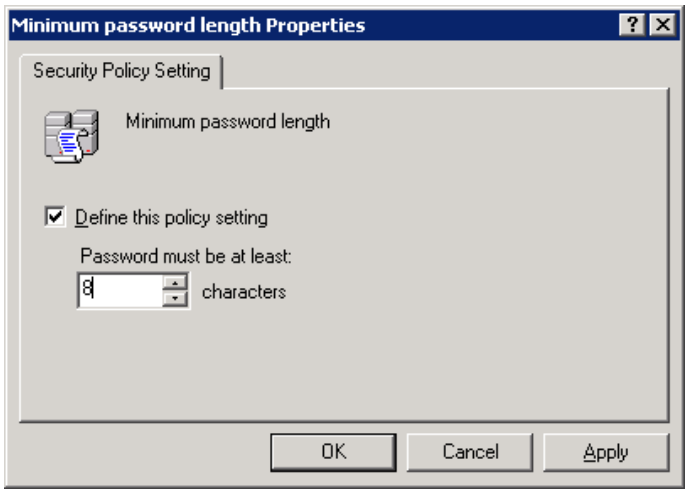
12. Click on **OK** to close the properties dialog.



Screenshot 146 - Configuring the minimum password age

13. From the right pane, double-click on the *'Minimum password age*' policy. Then select the *'Define this policy setting'* option and set the *'Password can be changed after:'* value to '2'.

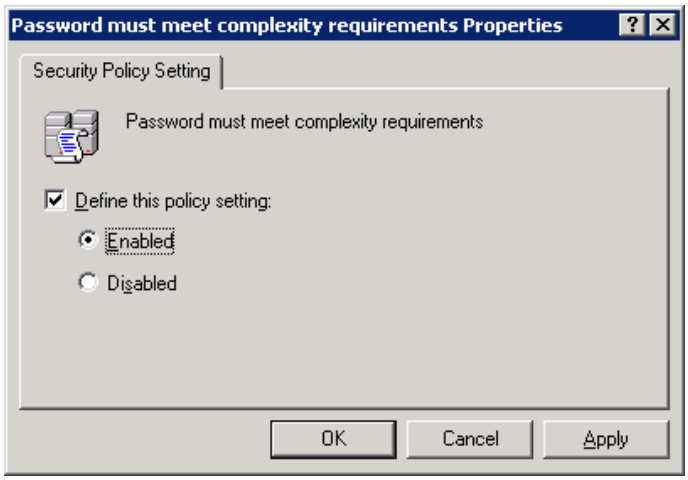
14. Click on the **OK** button to close the dialog.



Screenshot 147 - Configuring the minimum number of characters in a password

15. From the right pane, double-click on the *'Minimum password length'* policy. Then select the *'Define this policy setting'* option and set the value of the *'Password must be at least:'* entry field to '8'.

16. Click on the **OK** button to close the dialog.



Screenshot 148 - Enforcing password complexity

17. From the right pane, double-click on the *'Password must meet complexity requirements'* policy. Then enable the *'Define this policy setting in the template'* option, and select *'Enabled'*.

18. Click on the **OK** button to close the dialog.

19. At this stage the password policy settings of the new GPO have been configured. Close all dialogs and exit the 'Active Directory Users and Computers' configuration dialog.

Viewing the Password Policy Settings of an Active Directory-Based Domain

NOTE: You must be logged on as a member of the Domain Admins group.

Use the following procedure to verify that the appropriate password policy settings are applied and effective in the Domain Policy GPO. Verifying the settings and their operation ensures that the correct password policies will be applied to all users in the domain.

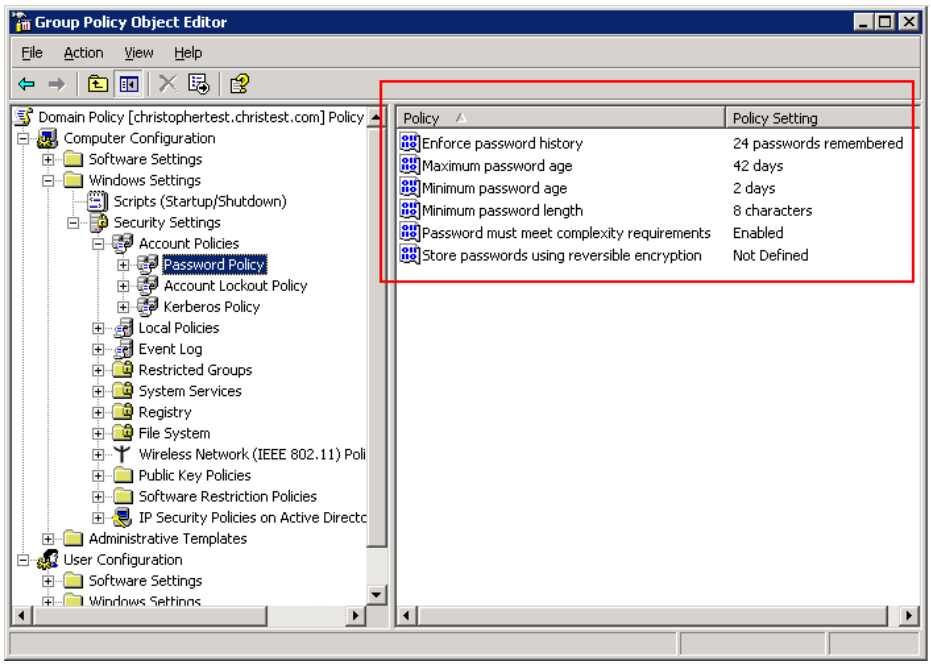
To verify password policy settings for an Active Directory domain

1. Navigate to the Control Panel (**Start ▸ Settings ▸ Control Panel**) and open the 'Administrative Tools'.

2. Open the 'Active Directory Users and Computers'. Right click on the root container of the domain and select **Properties.**

3. Click on the **Group Policy** tab. Then select the GPO to be checked (for example, *'Domain Policy GPO'*) and click on **Edit** to open the Group Policy Object Editor.

4. Expand the **Computer Configuration** node and navigate to **Windows Settings ▸ Security Settings ▸ Account Policies ▸ Password Policy** folder.



Screenshot 149 - Verifying the GPO settings

The password policy configuration settings are displayed in the right pane of the GPO editor. Assuming that you have configured the password policy of your GPO as shown in the above screenshot, you should verify that users cannot specify passwords that are shorter than eight characters. These password policy settings should also prevent users from create non-complex passwords, and should not allow users to change passwords which are not older than two days.

Troubleshooting

Introduction

The troubleshooting chapter explains how you should go about resolving issues you have. The main sources of information available to users are:

- The manual – most issues can be solved by reading the manual.
- The GFI Knowledge Base – accessible from the GFI website.
- The GFI support site.
- Contacting the GFI support department by email at support@gfi.com
- Contacting the GFI support department using our live support service at http://support.gfi.com/livesupport.asp
- Contacting our support department by telephone.

Knowledge Base

GFI maintains a Knowledge Base, which includes answers to the most common problems. If you have a problem, please consult the Knowledge Base first. The Knowledge Base always has the most up-to-date listing of support questions and patches.

The Knowledge Base can be found on http://KBase.gfi.com

Request support via email

If, after using the Knowledge Base and this manual, you have any problems that you cannot solve, you can contact the GFI support department. The best way to do this is via email, since you can include vital information as an attachment that will enable us to solve the issues you have more quickly.

The **Troubleshooter**, included in the program group, automatically generates a series of files needed for GFI to give you technical support. The files would include the configuration settings, debugging log files and so on. To generate these files, start the troubleshooter wizard and follow the instructions in the application.

In addition to collecting all the information, you will be asked a number of questions. Please take your time to answer these questions accurately. Without the proper information, it will not be possible to diagnose your problem.

Then go to the troubleshooter\support folder, located under the main program directory, compress the files in ZIP format, and send the generated ZIP file to support@gfi.com.

Ensure that you have registered your product on our website first, at http://customers.gfi.com.

We will answer your query within 24 hours or less, depending on your time zone.

Request support via web chat

You may also request support via 'LiveSupport (web chat)'. You can contact the GFI support department using our LiveSupport service at http://support.gfi.com/livesupport.asp

Ensure that you have registered your product on our website first, at http://customers.gfi.com

Request support via phone

You can also contact GFI by phone for technical support. Please check our support website for the correct numbers to call, depending on where you are located, and for our opening times.

Support website:

http://support.gfi.com

Ensure that you have registered your product on our website first, at http://customers.gfi.com

Web Forum

User to user support is available via the web forum. The forum can be found at:

http://forums.gfi.com/

Build notifications

We strongly suggest that you subscribe to our build notifications list. This way, you will be immediately notified about new product builds. To subscribe to our build notifications, go to:

http://support.gfi.com

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