GFI LANguard 9

Manual

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1. Introduction

1.1 Introduction to GFI LANguard

GFI LANguard is a security scanning, network auditing and remediation application that enables you to scan and protect your network through:

- Identification of system and network weaknesses using a comprehensive vulnerability check database, which includes tests, based on OVAL, CVE and SANS Top 20 vulnerability assessment guidelines.
- Auditing of all hardware and software assets of your network, enabling you to create a detailed inventory of assets. This goes as far as enumerating installed applications as well as USB devices connected on your network.
- Enabling automatic download and remote installation of service packs and patches for Microsoft operating systems and third party products as well as automatic un-installation of unauthorized software.

1.2 GFI LANguard components

GFI LANguard is built on an architecture that allows for high reliability and scalability, which caters for both medium to larger sized networks.

GFI LANguard consists of the following components:

GFI LANguard management console

The management console is the GUI through which all GFI LANguard administration and functionality is accessed including:

- Triggering of network security scans, patch deployment and vulnerability remediation sessions.
- Viewing of saved and real time security scan results.
- Configuration of scan options, scan profiles and report filters.
- Use of specialized network security administration tools.

GFI LANguard attendant service

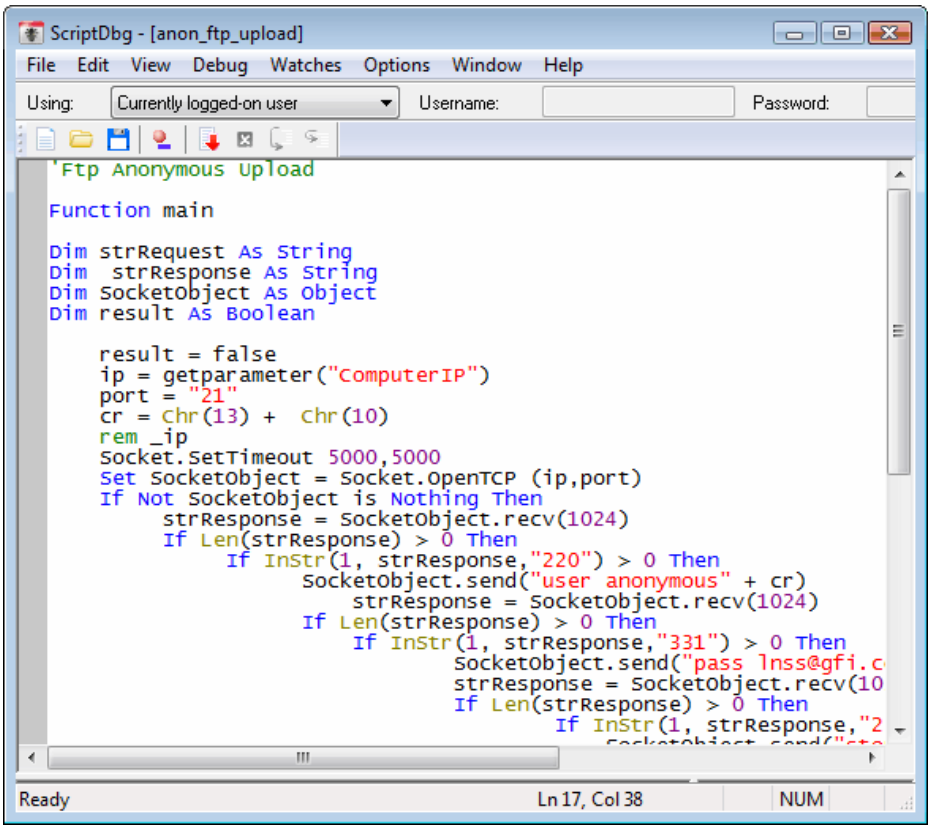
GFI LANguard attendant, is the background service that manages all scheduled operations including scheduled network security scans, patch deployment and remediation operations.

GFI LANguard patch agent service

GFI LANguard patch agent is the background service that handles the deployment of patches, service packs and software updates on target computers.

GFI LANguard Script Debugger

The GFI LANguard Script Debugger is the module that allows you to write and debug custom scripts using a VBScript-compatible language.



Screenshot 1 - GFI LANguard script debugger

Use this module to create scripts for custom vulnerability checks through which you can custom-scan network targets for specific vulnerabilities.

GFI LANguard script debugger is accessible from **Start ► Programs ► GFI LANguard 9.0 ► GFI LANguard Script Debugger**.

1.3 Vulnerability management strategy

It is recommended to use the following sequence for an effective vulnerability management strategy:

1. Scan: For more information, refer to the Step 1: Performing an audit section in this manual.

2. Analyze: For more information refer to the Step 2: Analyzing the security scan results section in this manual.

3. Remediate: For more information, refer to the Step 3: Fixing vulnerabilities section in this manual.

2. Step 1: Performing an audit

2.1 Introduction

Security scans/audits enable you to identify and assess possible risks within a network. Auditing operations imply any type of checking performed during a network security audit. This includes open port checks, missing Microsoft patches and vulnerabilities, service information, user or process information and more.

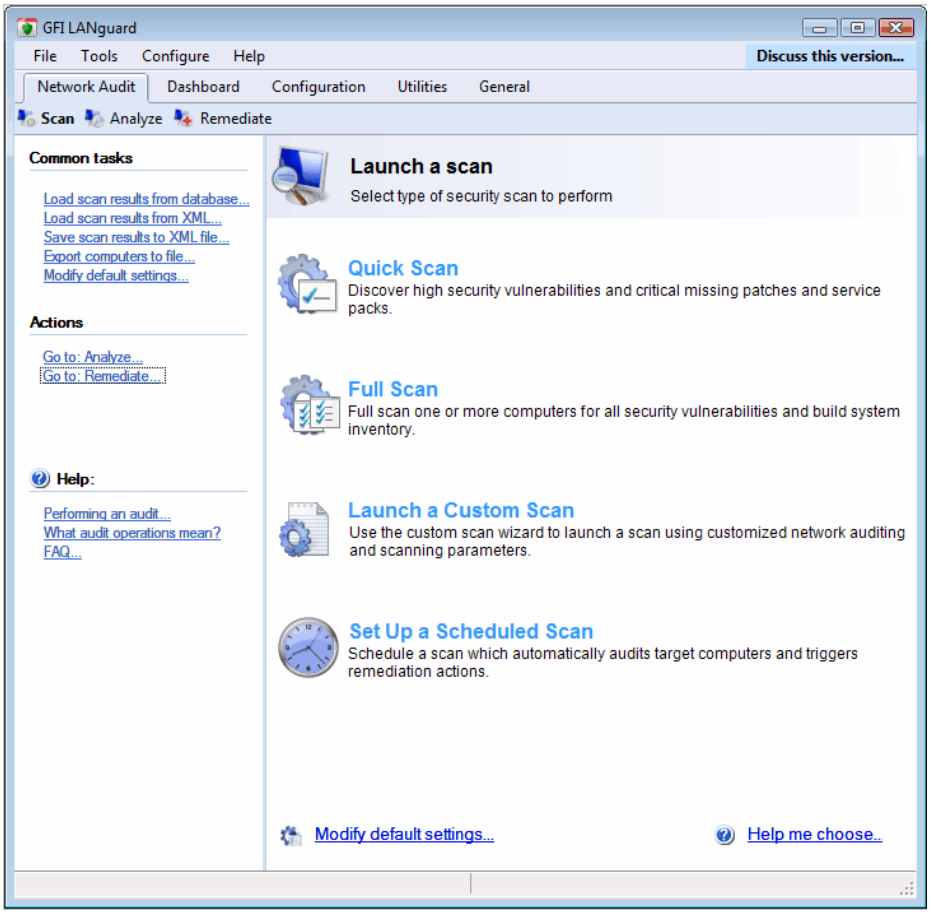
Overview of the scanning process

The automated scanning process has three distinct stages.

Stage 1	
Determine availability of target computer	Determining whether target computers, is reachable and available for vulnerability scanning. This is determined through connection requests, sent in the form of NETBIOS queries, SNMP queries and/or ICMP pings.
Stage 2	
Establish connection with target device	Establish a direct connection with the target computer, by remotely logging on to it. To execute a scan, GFI LANguard must logon target computers with administrator privileges.
Stage 3	
Execute vulnerability checks	Execute the vulnerability checks configured within the selected scanning profile and identify present security weaknesses.

2.2 Network Scanning options

GFI LANguard includes default configuration settings that allow you to run immediate scans soon after the installation is complete.



Screenshot 2 – Scan Options

GFI LANguard ships with preconfigured scanning options. These options are located in the **Network Audit** tab, which opens by default every time that the GFI LANguard management console is launched.

Parameters preconfigured in these default-scanning options include the scan profile. Scan profiles are a collection of vulnerability checks that determine what vulnerabilities will be identified and which information will be retrieved from scanned targets.

The default scanning options provide quick access to the following scanning modes:

- **Quick scan:** Scanning mode set to audit target computers for system information and high security vulnerabilities only (including missing Microsoft updates). The scanning profile used in this scanning option is by default set to 'High Security Vulnerabilities'.
- **Full scan:** Scanning mode set to audit target computers for system information and all possible security vulnerabilities. The scanning profile used in this scanning option is by default set to 'High Security Vulnerabilities'.
- **Launch a custom scan:** Scanning mode, which allows you to configure (on the fly) the parameters to be used during a scan. Configuration is wizard assisted and configurable parameters

include scanning profile. For more information on how to execute a custom scan, refer to the Custom scans section in this manual.

- **Set up a scheduled scan:** Scanning mode, which allows you to audit target computers at configurable time intervals. For more information on how to set scheduled scans, refer to Scheduled scans section in this manual.

Important notes

1. If Intrusion Detection Software (IDS) is running during scans, GFI LANguard 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. In most cases, vulnerability scans will generate different event log entries across diverse systems e.g. UNIX logs and web servers logs will all detect GFI LANguard scans as intrusion attempts triggered from the computer running GFI LANguard.

3. To successfully execute a scan, GFI LANguard must remotely logon to target computers with administrator privileges.

4. For large network environments, a Microsoft SQL Server/MSDE database backend is recommended instead of the Microsoft Access database.

5. When submitting a list of target computers from file, ensure that file contains only one target computer name per line.

2.3 Quick Scan

During a quick scan, GFI LANguard will analyze target computers and retrieve setup information and missing updates including:

- Missing Microsoft Office patches
- Missing Microsoft Windows service packs
- System information (Software) including OS details and settings, open ports and open shares.
- System information (Hardware) including Network card details (e.g. MAC address) and any USB devices connected.

Quick Scans have relatively short scan duration times compared to the Full Scan – mainly because only a subset of the entire vulnerability checks database is performed. It is recommended to run a Quick Scan at least once a week.

When to use Quick Scans?

It is recommended to use Quick scans:

- When performing a first time scan since these provide in a very timely fashion, a sample of the information that GFI LANguard can extract from target computers.
- To run daily network audits of multiple network machines since it is non-intrusive and does not overload network infrastructure/bandwidth.
- To retrieve system information and to scan only for high security vulnerabilities.

2.3.1 How to launch a Quick Scan

To run a quick scan:

1. Launch the GFI LANguard management console from **Start ► Programs ► GFI LANguard 9.0 ► GFI LANguard**.

2. From the **Network Audit ► Scan** tab which opens by default, click on the **Quick Scan** option.

3. Specify the target computer to be scanned by selecting one of the following options:

- **Scan this computer** – Use this option to scan local host.
- **Scan another computer** - Use this option to scan a specific computer. Parameters required are target computer name or IP.
- **Scan entire domain/workgroup** – Use this option to scan the domain/workgroup to which your local host is joined.

4. Click **Next**.

5. Specify the credentials that GFI LANguard will use to logon to target computers. GFI LANguard must logon to target computers with administrator privileges.

6. Click **Scan** to start the process.

2.4 Full Scan

During a full scan, GFI LANguard will scan target computers to retrieve setup information and identify all security vulnerabilities including:

- Missing Microsoft updates
- System information (Software) including unauthorized applications, incorrect anti-virus settings and outdated signatures.
- System information (Hardware) including modems and USB devices connected.

Due to the large amount of information retrieved from scanned targets, Full Scans tend to often be lengthy. It is recommended to run a Full Scan at least once every 2 weeks.

When to use Full Scans?

It is recommended to launch Full Scans:

- At least once every 2 weeks to run network audits on multiple network machines.
- To retrieve system information and to scan targets for all vulnerabilities.
- Whenever new threats emerge.
- Whenever suspicious activity is noticed.

2.4.1 How to launch a Full Scan

1. Launch the GFI LANguard management console from **Start ► Programs ► GFI LANguard 9.0 ► GFI LANguard**

2. From the **Network Audit ► Scan** tab which opens by default, click on the **Full Scan** option.

3. Specify the target computer to be scanned by selecting one of the following options:

- **Scan this computer** – Use this option to scan local host
- **Scan another computer** - Use this option to scan a specific computer. Parameters required are target computer name or IP.
- **Scan entire domain/workgroup** – Use this option to scan the domain/workgroup to which your local host is joined.

4. Click **Next**.

5. Specify the credentials that GFI LANguard will use to logon to target computers. GFI LANguard must logon to target computers with administrator privileges.

6. Click **Scan** to start the process.

2.5 Custom scan

A custom scan is a network audit based on parameters, which you configure on the fly before launching the scanning process. Various parameters can be customized during this type of scan including:

- Type of scanning profile to use (i.e. the type of checks to execute/type of data to retrieve).
- Scan targets
- Logon credentials

In custom scans, scan profiles are organized under 3 profile groups:

- Vulnerability assessment: This group contains profiles that scan target computers for network threats based on guidelines provided by OVAL/CVE and SANS TOP20 bulletins.
- Network & Software audit: This group contains profiles that scan target computers for system information such as OS information, installed applications and USB devices connected.
- Complete/Combination scans: This group contains Full Scan profiles that audit target computers for a wide-array of threats and system information.

When to use Custom Scans?

It is recommended to use custom scans:

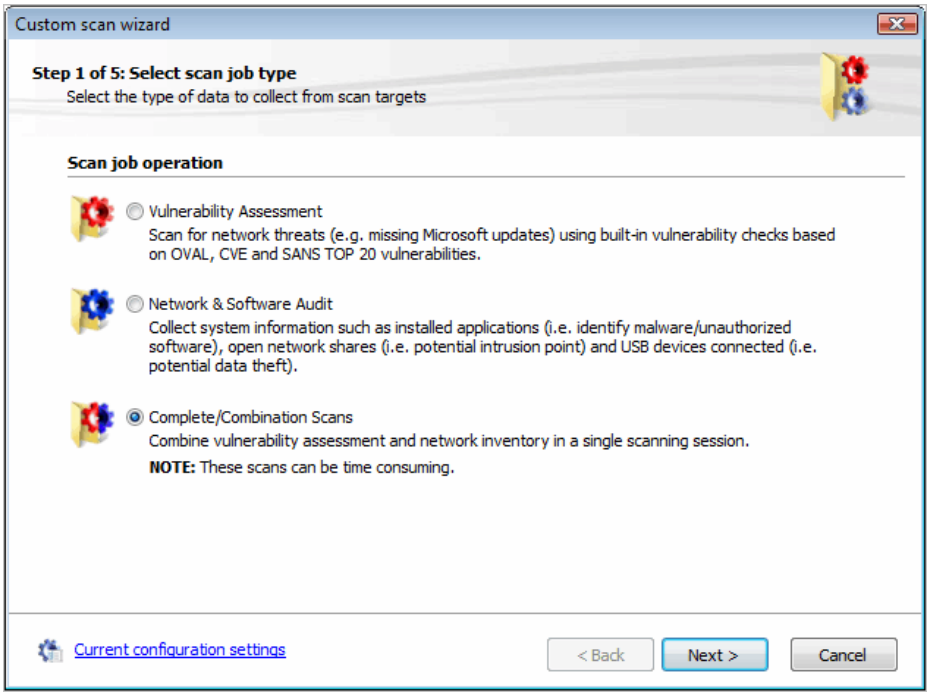
- When performing a onetime scan with particular scanning parameters/profiles.
- When performing a scan for particular network threats and/or system information.
- To perform a target computer scan using a specific scan profile.

2.5.1 How to launch a Custom Scan

To perform a custom scan:

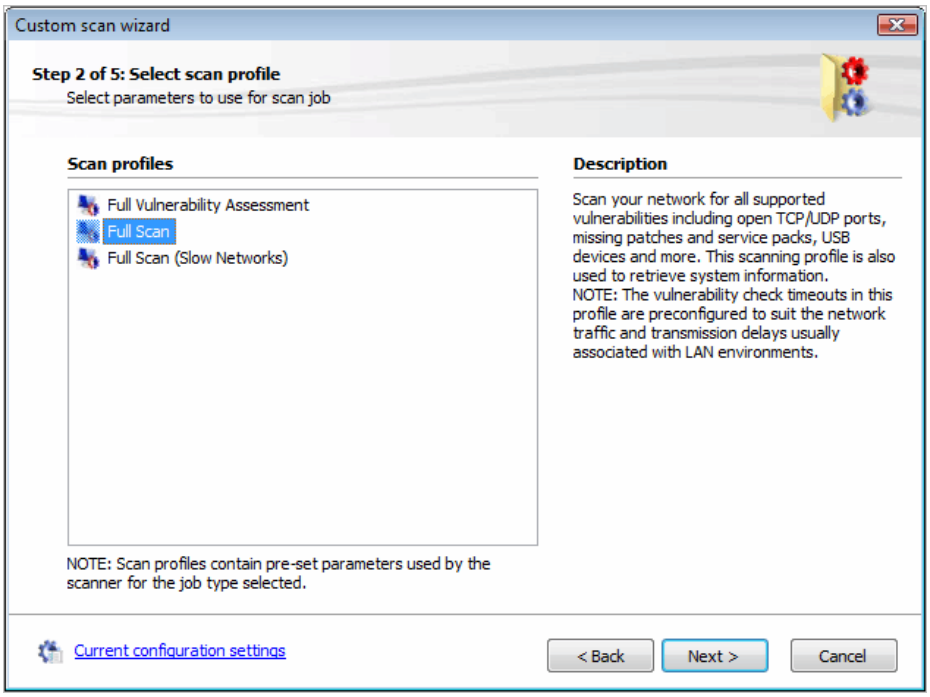
1. Launch the GFI LANguard management console from **Start ► Programs ► GFI LANguard 9.0 ► GFI LANguard**.

2. From the **Network Audit ► Scan** tab which opens by default, click on the **Launch a Custom Scan** option.



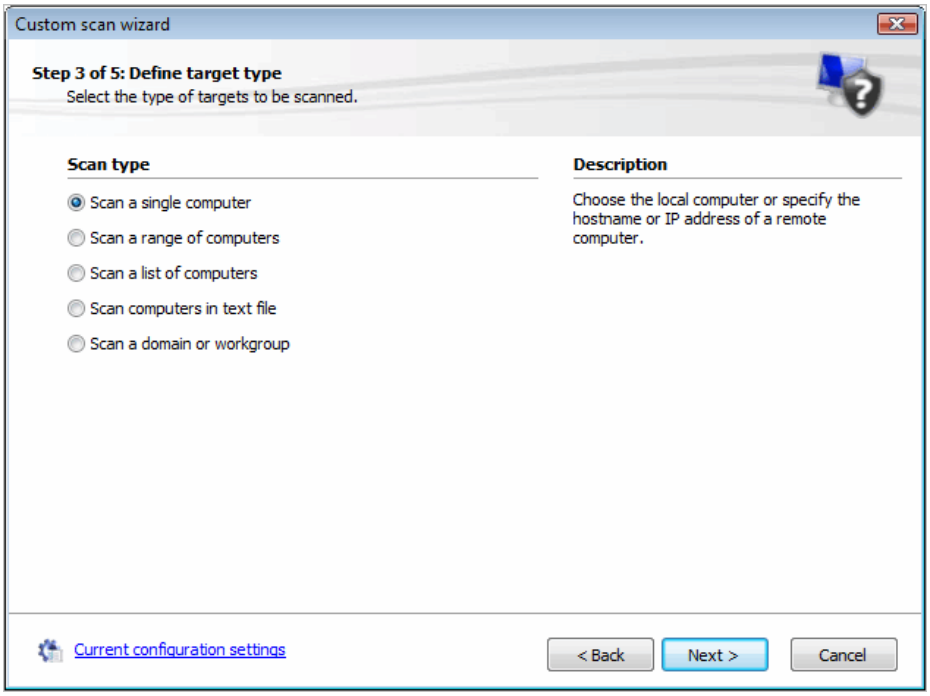
Screenshot 3 – Scan profile groups

3. Select the scan profile group, applicable to the type of information to be retrieved from targets, and click **Next**. E.g. to audit targets for USB devices connected, select the **Network & Software Audit** option.



Screenshot 4 - Custom Scan Wizard Scan type

4. Select the profile to use during this scan and click **Next**.

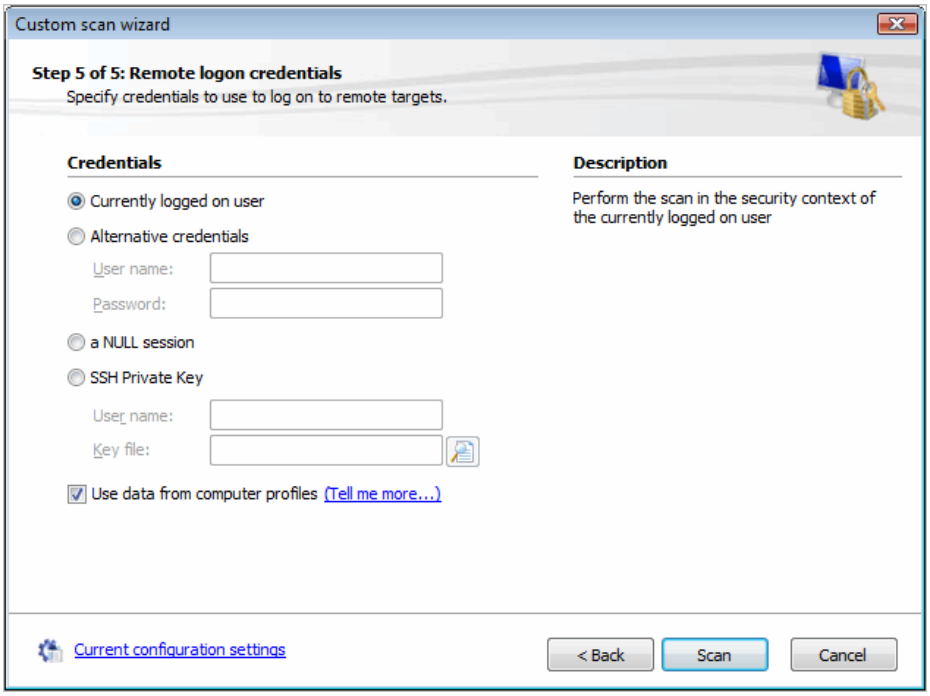


Screenshot 5 - Target computer categories

5. Select one of the following options and click **Next**:

- **Scan a single computer** – Select this option to scan local host or one specific computer
- **Scan a range of computers** – Select this option to scan a number of computers defined through an IP range. For more information, refer to http://kbase.gfi.com/showarticle.asp?id=KBID002749.
- **Scan a list of computers** – Select this option to import list of targets from file or to select targets from network list.
- **Scan computers in text file** – Select this option to scan targets enumerated in a specific text file.
- **Scan a domain or workgroup** – Select this option to scan all targets connected to a domain/workgroup.

6. Specify the respective target computer(s) details and click **Next**.



Screenshot 6 - Specify the scan job credentials

7. Specify the authentication details to use during this scan.
8. Click **Scan** to start the audit process.

2.6 Setting up a scheduled scan

A scheduled scan is a network audit, which is scheduled to run automatically on a specific date/time and at a specific frequency. Scheduled scans can be set to execute once or periodically. Scheduled scan status can be monitored via **Dashboard** ► **Scheduled Operations** tab.

Scheduled scans can also be configured to:

- Automatically download and deploy missing Microsoft updates detected during the scheduled audit
- Trigger Email notifications on detection of network threats
- Generate consecutive-scan comparison reports and distribute these automatically via email.
- Automatically uninstall unauthorized applications.

When to use Scheduled Scans?

It is recommended to use scheduled scans:

- To automatically perform periodical/regular network vulnerability scans using same scanning profiles and parameters
- To automatically trigger scans after office hours and generate alerts and auto-distribution of scan results via email.
- To automatically trigger auto-remediation options, (e.g. Auto download and deploy missing updates).

NOTE: For more information on auto-remediation options refer to the Automatic remediation

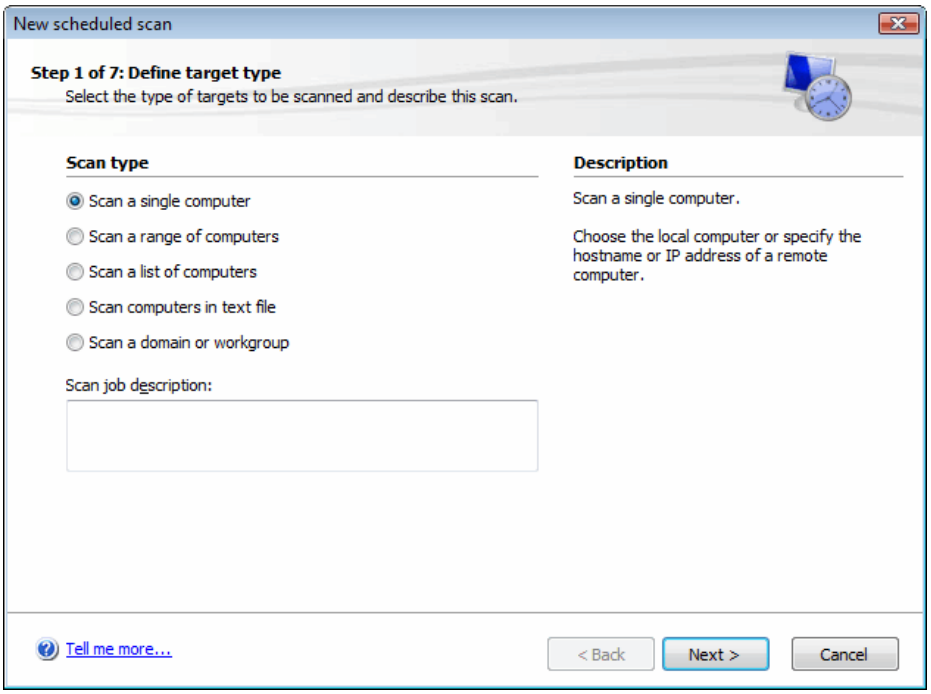
NOTE: To enable routine scanning of network targets as part of an established network auditing program such as auditing for legal compliance. Ensure that the GFI LANguard Attendant service is running otherwise scheduled operations will fail to start.

2.6.1 How to setup a Scheduled Scan

To perform a scheduled scan:

1. Launch the GFI LANguard management console from **Start ► Programs ► GFI LANguard 9.0 ► GFI LANguard**

2. From the **Network Audit ► Scan** tab which opens by default, click on the **Set Up a Scheduled Scan** option.

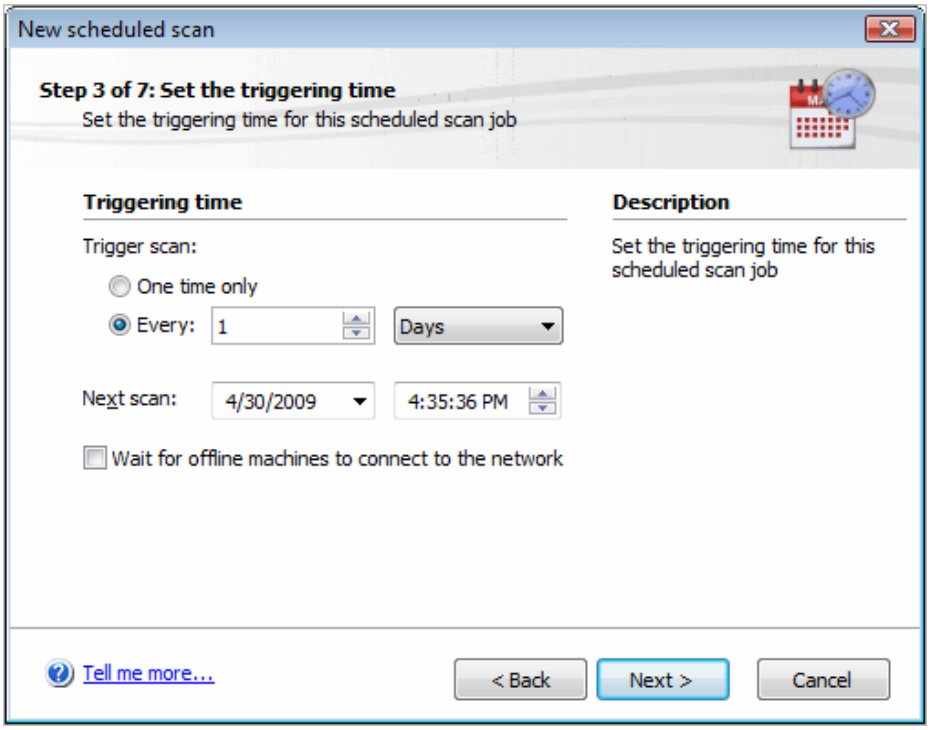


Screenshot 7 - New Scheduled Scan dialog

3. Select one of the following options and click **Next**:

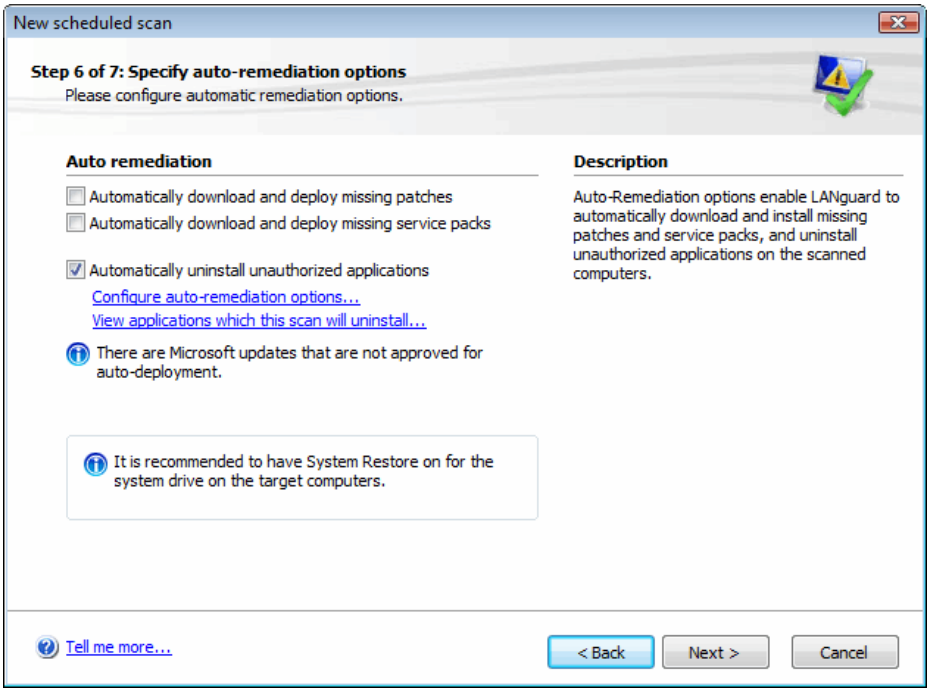
- **Scan a single computer** – Select this option to scan local host or one specific computer
- **Scan a range of computers** – Select this option to scan a number of computers defined through an IP range. For more information refer to: http://kbase.gfi.com/showarticle.asp?id=KBID002749
- **Scan a list of computers** – Select this option to manually create a list of targets, import targets from file or select targets from network list.
- **Scan computers in text file** – Select this option to scan targets enumerated in a specific text file.
- **Scan a domain or workgroup** – Select this option to scan all targets connected to a domain/workgroup.

4. Specify the respective target computer(s) details and click **Next**.



Screenshot 8 - Scan frequency

5. Specify date/time/frequency of scheduled scan and click **Next**.
6. Specify the scan profile to be used in the scan.
7. Click **Next**.
8. Specify logon credentials and click **Next**



Screenshot 9 - Scheduled scan auto-remediation options

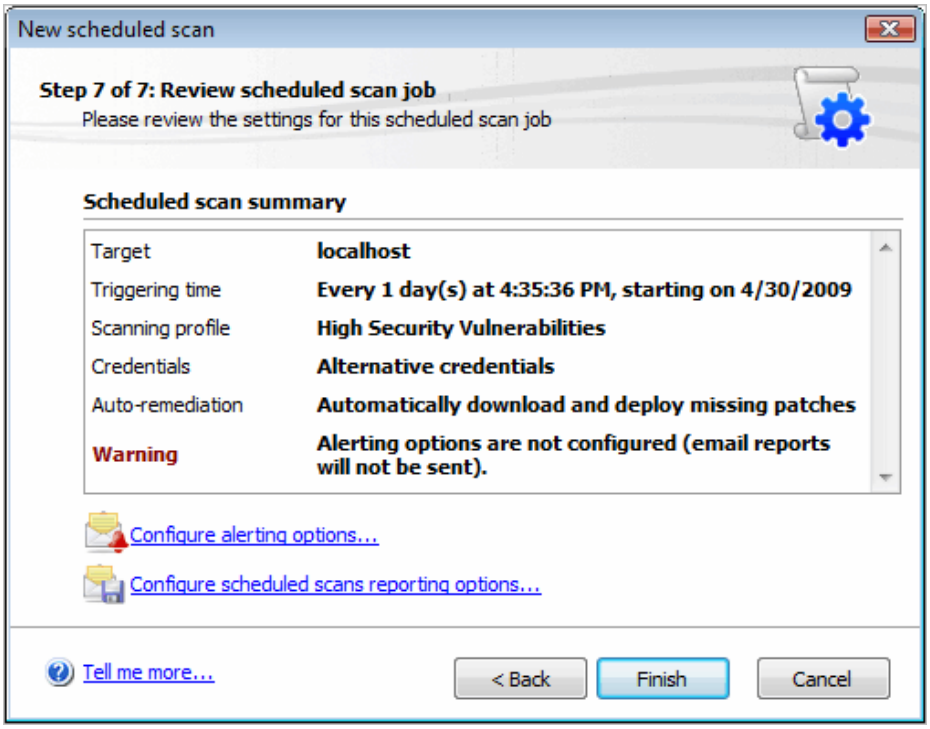
9. (Optional) Select **Automatically uninstall unauthorized applications** so that all applications validated as unauthorized, will be uninstalled from the scanned computer (unauthorized applications are

defined in **Application Inventory**). For more details see Application auto-uninstall

10. (Optional) Click **View applications which this scan will uninstall**. To launch the **Applications which will be uninstalled** dialog. This will list all the applications that will be uninstalled when the scheduled scan is finished.

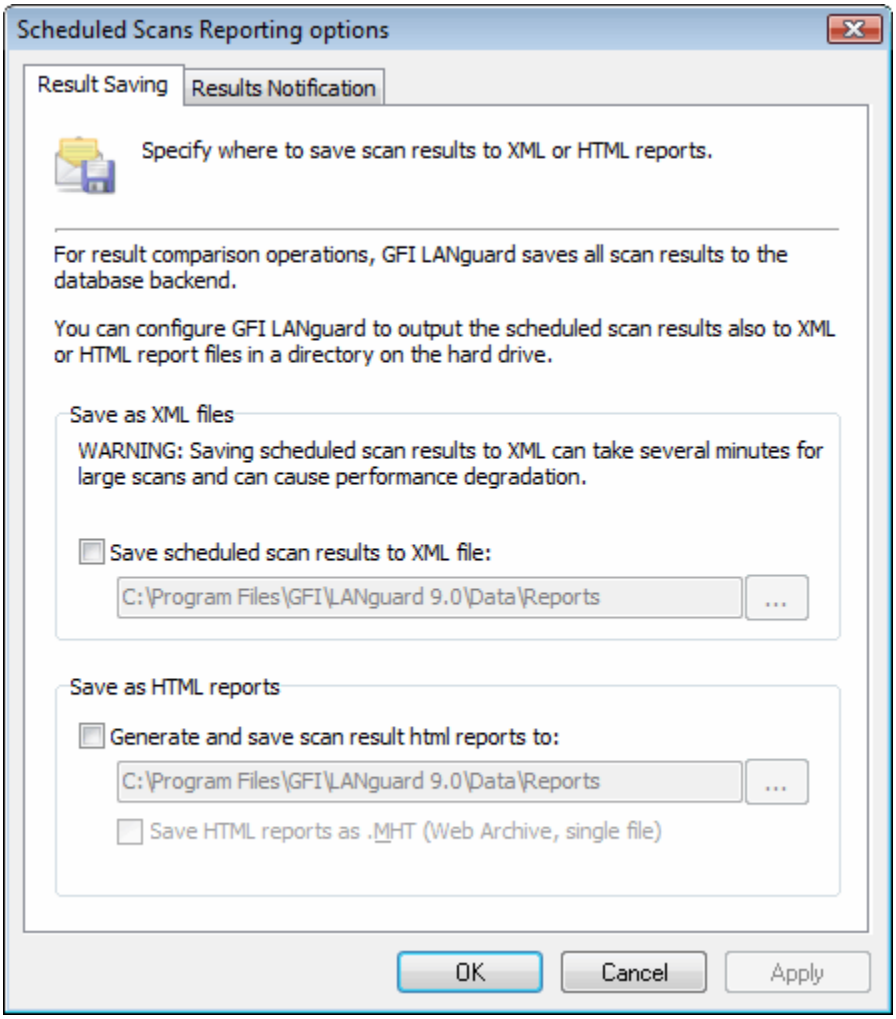
11. (Optional) Click **Configure auto-remediation** option to configure the processes that must be triggered before and after a deployment of an application. For more information, refer to Deployment options.

12. Click **Next**.



Screenshot 10 - Review scheduled scan job

13. (Optional) Click on **Configuring alerting options…** and specify sender/recipient details.



Screenshot 11 - Scheduled Scans Reporting options

14. (Optional) Click on **Configure scheduled scan reporting options…** to configure scheduled scans reporting.

    a. Specify whether scan results are saved as HTML or XML

    b. Click on **Results Notification** tab and select:

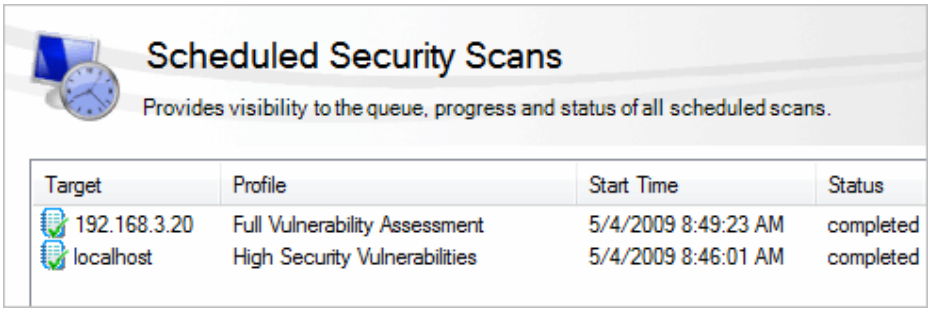
    - **Full Scan** – to include all data collected during the scheduled scan.
    - **Results Comparison** – to create a report which lists only the differences (if any) identified between the last scheduled scan results and the preceding one.

15. Click **OK** to finalize your settings.

16. Click **Finish** to finalize your configuration.

17. All new scheduled scans are by default disabled. To enable select **Configuration ► Scheduled Scans** and click on the .

NOTE: For more information on **Scheduled Scans** refer to the Scheduled Scans section in this manual.



Screenshot 12 - Scheduled scan status

18. Confirm that the new scheduled scan has been successfully set by clicking on **Dashboard ► Scheduled Operations**. New scheduled scan should be listed in the queue.

For more information on how scheduled scans can be monitored please, refer to Monitoring scheduled activity

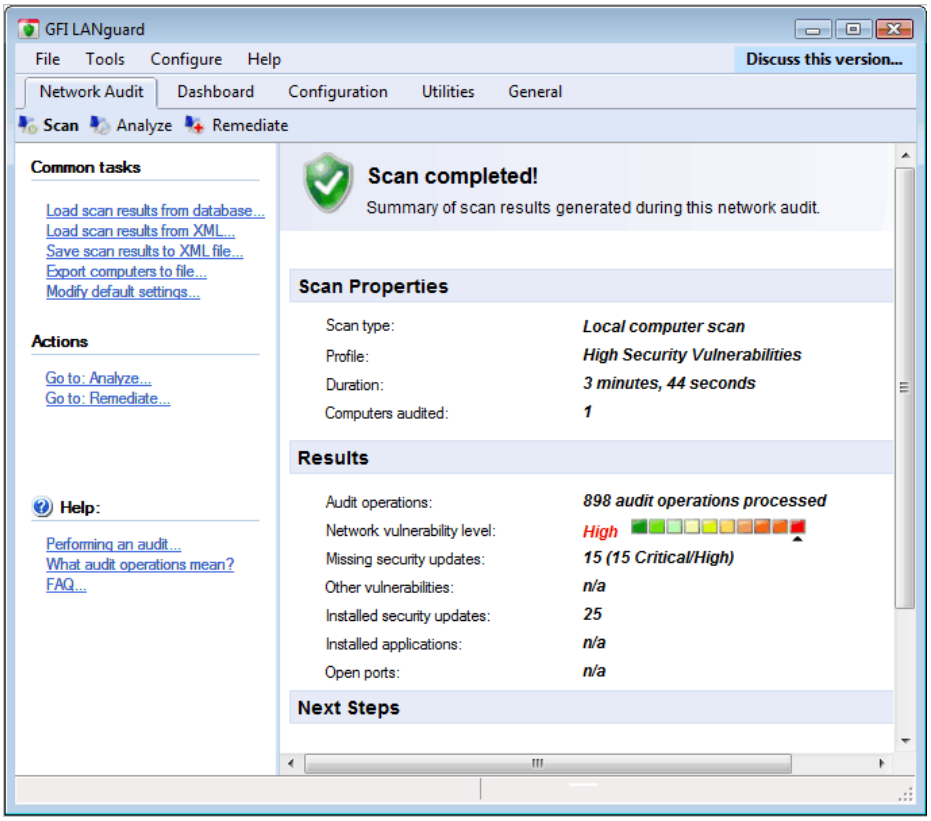
3. Step 2: Analyzing the security scan results

3.1 Introduction

The most important thing following a network security scan is identifying which areas and systems require your immediate attention. This is achieved by analyzing and correctly interpreting the information collected and generated during a network security scan.

3.2 Scan summary

Upon completing a scan, GFI LANguard immediately displays a scan summary that graphically displays the vulnerability level of the scanned computer or a combined interpretation of the scan results obtained following a network scan.



Screenshot 13 - Scan summary

3.3 Vulnerability level rating

The vulnerability level is a rating given by GFI LANguard to each computer after it has been scanned. This rating indicates the vulnerability level of a computer/network, depending on the number and type of vulnerabilities and/or missing patches found.

Screenshot 14 - Vulnerability level meter

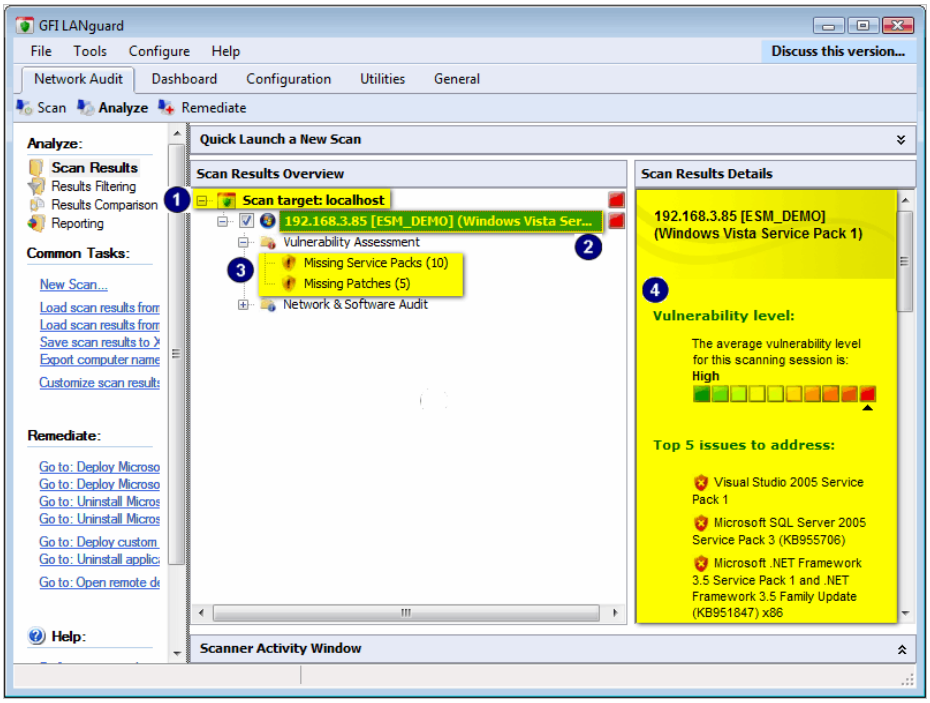
A high vulnerability level is a result of vulnerabilities and/or missing patches whose average severity is categorized as high.

When a number of computers are scanned in a single audit session, a measurement of the global vulnerability level is based on a weighted sum of the vulnerabilities detected on the computers scanned.

Vulnerability level is indicated using color-coded graphical bar. A red color-code indicates a high vulnerability level, whilst a green color-code indicates a low vulnerability level.

3.4 Detailed scan results

Click on the **Analyze** tab to access a more detailed list of vulnerabilities.



Screenshot 15 – Detailed scan results

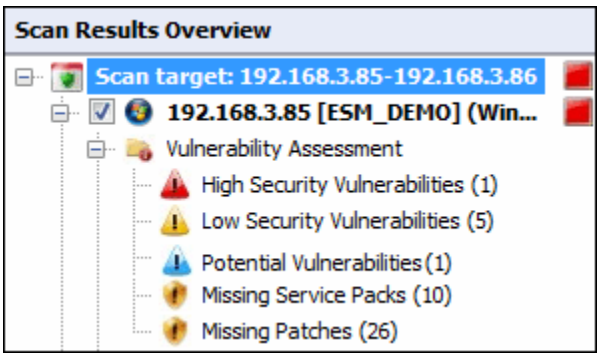
Information in result pane	
1	**Scan target node:** Displays information related to scan targets in terms of, scan range and whether scan result was retrieved from database.
2	**Scan computer node:** Displays information related to the scanned computer. Indicates if scan was successful and shows OS details.

3	**Scan details node:** Displays information related to the scan performed on target computer including vulnerabilities found, system patching status, etc.
4	**Scan results details:** Displays the details of the scan results. This includes vulnerability or missing patch name, level of patch/vulnerability, detailed vulnerability/missing patch details, connected device information, etc.

Expand the **Scanned computers** node to access the results retrieved during the scan. Security scan results are organized in 2 sub-nodes tagged as:

- Vulnerability Assessment
- Network & Software Audit

3.5 Detailed scan results: Vulnerability assessment



Screenshot 16 - The Vulnerability Assessment node

Click on any **Vulnerability Assessment** node to view the security vulnerabilities identified on the target computer grouped by type and severity as follows:

- High Security Vulnerabilities
- Low Security Vulnerabilities
- Potential vulnerabilities
- Missing Service Packs
- Missing Patches

3.5.1 High/Med/Low Security vulnerabilities

Click on the **High Security Vulnerabilities** or **Low Security Vulnerabilities** sub-nodes for a list of weaknesses discovered while probing a target device. These vulnerabilities are organized into the following groups:

Group	Description
Mail, FTP, RPC, DNS and Miscellaneous	Lists vulnerabilities discovered on FTP servers, DNS servers, and SMTP/POP3/IMAP mail servers. Links to Microsoft Knowledge Base articles or other support documentation are provided.
Web	Lists vulnerabilities discovered on web servers (such as misconfiguration issues). Supported web servers include Apache, Netscape, and Microsoft I.I.S.

Services	Lists vulnerabilities discovered in active services as well as the list of unused accounts that are still active and accessible on scanned targets.
Registry	Lists vulnerabilities discovered in the registry settings of a scanned network device. Links to support documentation and short vulnerability descriptions are provided.
Software	Lists vulnerabilities found in software installed on the scanned network device(s). Links to supporting documentation and short vulnerability descriptions are provided.
Rootkit	Lists vulnerabilities discovered because of having a rootkit installed on the scanned network device(s). Links to supporting documentation and short vulnerability descriptions are provided.

3.5.2 Potential vulnerabilities

Click on the **Potential vulnerabilities** sub-node to view scan result items that were classified as possible network weaknesses. Although not classified as vulnerabilities, these scan result entries still require meticulous attention since malicious users can exploit them during malicious activity.

E.g. during vulnerability scanning GFI LANguard will enumerate all of the modems that are installed and configured on the target computer. If unused these modems are of no threat to your network, however if connected to a telephone line these modems can be used to gain unauthorized and unmonitored access to the Internet. This means that users can bypass corporate perimeter security including firewalls, anti-virus, website rating and web content blocking exposing the corporate IT infrastructure to a multitude of threats including hacker attacks. GFI LANguard considers installed modems as possible threats and enumerates them in the **Potential Vulnerabilities** sub-node.

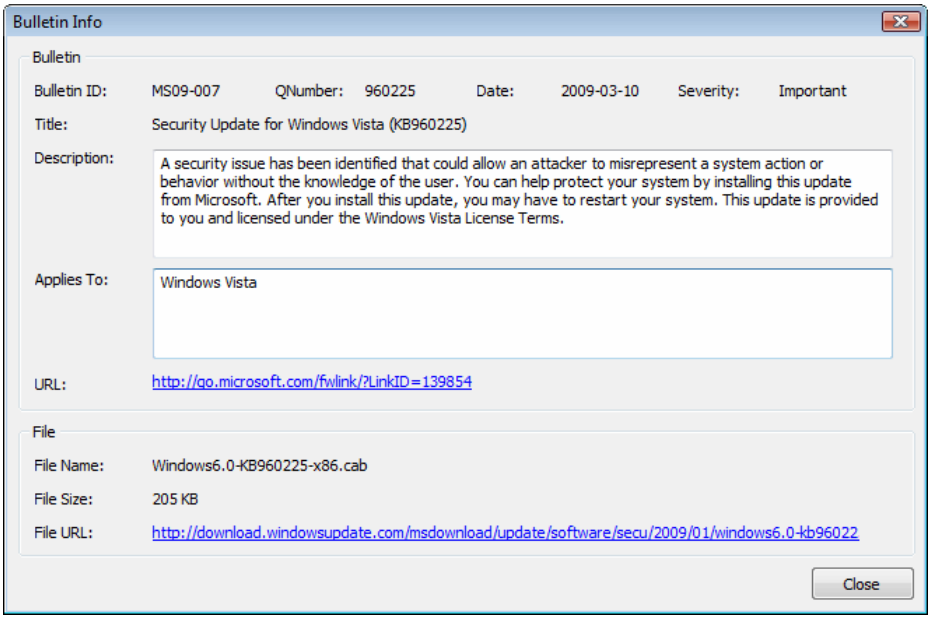
3.5.3 Missing Service Packs/Patches

Click on the **Missing Service Packs** or **Missing Patches** sub-node respectively to check which Microsoft software updates or patches are missing.

NOTE: GFI LANguard can identify missing service packs and patches on various Microsoft products. For a complete list of supported products visit: http://kbase.gfi.com/showarticle.asp?id=KBID002573

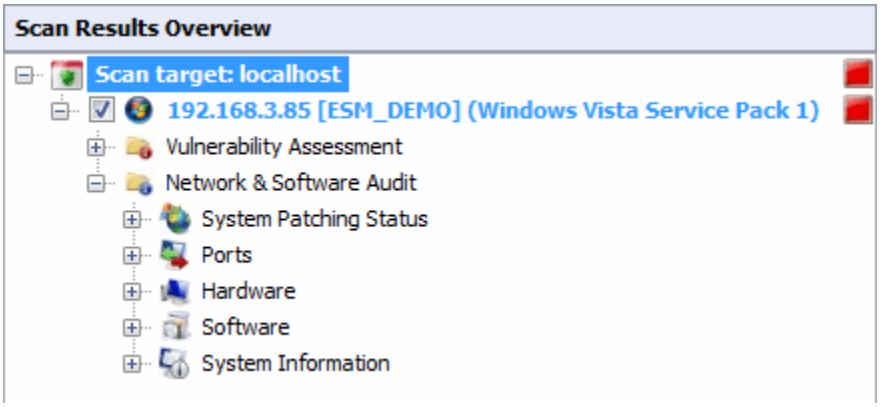
Bulletin information

To access bulletin information, right-click on the respective service pack and select **More details ► Bulletin Info**.



Screenshot 17 - Missing Service pack: Bulletin info dialog

3.6 Detailed scan results: Network & Software Audit



Screenshot 18 - The network and software audit node

Expand the **Network & Software Audit** node to view security vulnerabilities identified on scanned targets. Here, vulnerabilities are grouped by type and severity as follows:

- System Patching Status
- Ports
- Hardware
- Software
- System Information

Category	Information
	Fast response
	Medium Response
	Slow response

NOTE: The first icon indicates that the scan is queued, while the second icon indicates that the scan is in progress.

3.6.1 System patching status

Expand **System Patching Status** sub-node to access Information on:

- Missing Patches – List of missing Microsoft Patches
- Missing Service Packs – List of missing Microsoft Service Packs
- Installed Patches – List of installed Microsoft Patches
- Installed Service Packs – List of installed Microsoft Service Packs.

3.6.2 Ports

Expand the **Ports** sub-node to view all TCP and UDP ports detected during a scan. When a commonly exploited port is found open, GFI LANguard 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.

Further to detecting if, the port is open or not, GFI LANguard uses service fingerprint technology to analyze the service(s) that 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.

3.6.3 Hardware

Expand the **Hardware** sub-node to view a hardware audit categorized as follows:

Category	Information provided
Network Devices (Physical, Virtual, Wireless, Software enumerated devices)	• MAC address • IP address • Device type • Vendor • Hostname • DHCP Set • DNS Server • Status
USB Devices	• Device name • Description • Manufacturer
Local Drives	• Drive letter • Total disk space • Available disk space
Processors	• Vendor • Processor speed

Motherboard	• Product name • Manufacturer • Version • BIOS name • BIOS vendor • BIOS version • BIOS release date • BIOS Serial Number
Memory details	• Physical memory • Free physical memory • Virtual memory • Free virtual memory
Storage details	• Description • Manufacturer • Interface type • Media type • Partitions • Size • Drive(s)
Display adapters	• Manufacturer • Monitor • Current video mode
Other devices	• HID • System devices • Keyboard • Ports (COM & LPT ports) • Floppy disk controllers • Mouse • Multimedia • Hard disk controllers • Computer • Storage volumes • SCSI and RAID controllers • Storage Volume Snapshots

3.6.4 Software

Expand the **Software** sub-node to access software audit categories:

Category	Information provided
General Applications	• Application name • Version • Publisher
Antivirus Applications	• Application name • Real-time protection • Up-to-date • Last update • Version • Publisher

3.6.5 System Information

Expand the **System Information** sub-node to access OS information grouped as follows:

Category	Information Provided	Helps to identify
Shares	• Share name • Share remark (extra details on the share) • Folder which is being shared on the target computer • Share permissions and access rights • NTFS permissions and access rights.	Users sharing entire hard-drives, shares that have weak or incorrectly configured access permissions. Startup folders, and similar system files, that are accessible by unauthorized users, or through user accounts, that do not have administrator privileges, but are allowed to execute code on target computers. Unnecessary or unused shares.
Password Policy	• Minimum password length • Maximum password length • Minimum password age • Force logoff • Password history	Incorrectly configured lockout control Password strength enforcement policies
Security Audit Policy	• Audit account logon events • Audit account management • Audit directory service access • Audit logon events • And more…	Security holes or breaches
Registry	• Registered owner • Registered organization • Product name • Current build number	Hardware and software settings such as which drivers and applications will be automatically launched at system startup
NETBIOS Names	• Workstation service • Domain name • Domain controllers • File server service	Rogue computers and Wrong configurations

Computer	• MAC address • Time to live (TIL) • Network role • Domain	Rogue computers and Wrong configurations
Groups	• Account operators • Administrators • Backup operations • Guests	Wrong configurations and security flaws due to rogue or obsolete user groups
Users	• Full name • Privilege • Flags • Login	Rogue, obsolete or default user accounts
Logged On Users	• List of logged on users	Authorized and unauthorized users currently logged on computers
Sessions	• Lists hosts remotely connected to the target computer during scanning,	Authorized and unauthorized remote connections
Services	• List of active services	Rogue or malicious processes; redundant services
Processes	• List of active processes	Rogue or malicious processes
Remote TOD (time of day)	• Time of remote workstation, server or laptop.	Time inconsistencies and regional settings Wrong configurations

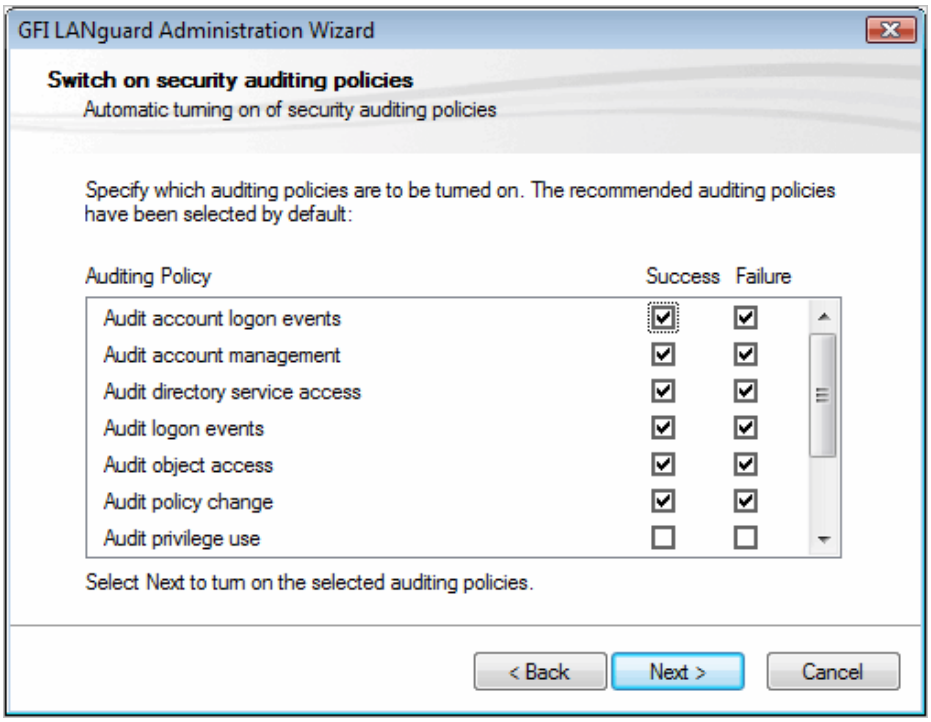
Security audit policy

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 breaches. Identifying attempts and preventing them from becoming successful breaches 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.

In order to help you keep track of your system's auditing policy GFI LANguard collects the security audit policy settings from scanned target computers and includes in the scan results. This information is accessed by click on the **Security Audit Policy** sub-node.

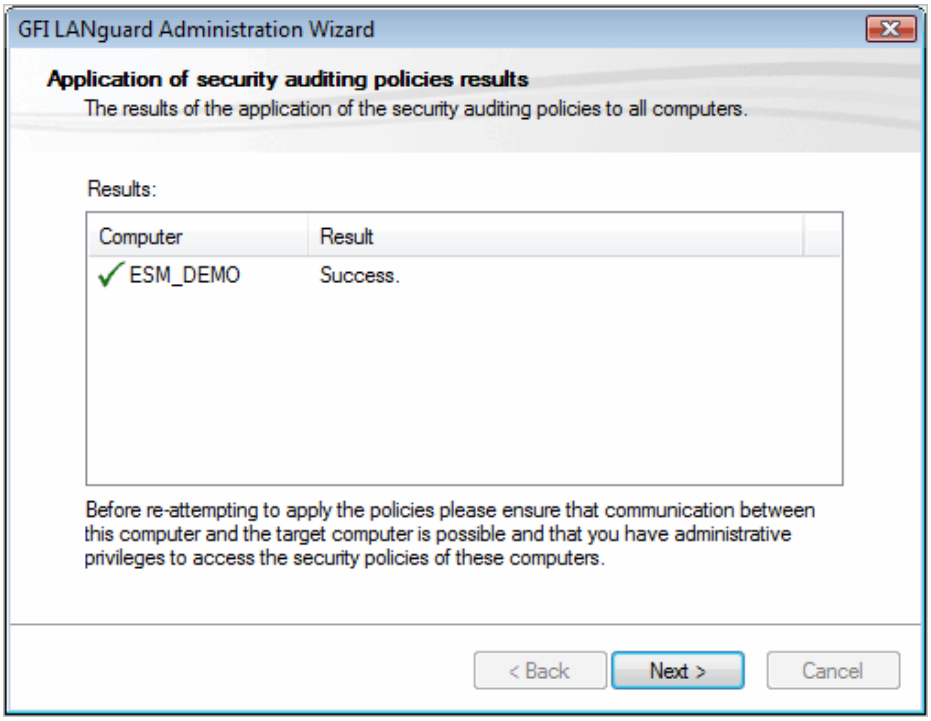
Apart from gaining knowledge on the current audit policy settings, you can also use GFI LANguard to access and modify the audit policy settings of your target computers. To achieve this:

1. From the Scanned Computers (middle) pane, right-click on the respective target computer and select **Enable auditing on ► This computer/Selected computers/All computers**.



Screenshot 19 - The audit policy administration wizard

2. Select/unselect auditing policies accordingly, and click **Next** to deploy the audit policy configuration settings, on the target computer(s).



Screenshot 20 - Results dialog in audit policy wizard

3. At this stage, a dialog will show whether the deployment of audit policy settings was successful or not. You can choose to re-deploy settings on failed computers by clicking on the **Back** button. To proceed to the next stage click **Next**.

4. Click **Finish** to finalize your configuration.

Groups/users

Rogue, obsolete or default user accounts can be exploited by malicious or unauthorized users to gain access to restricted areas of your IT infrastructure. The 'Guest' account for example is just one example of commonly exploited accounts – reason being that more often than not, this account is left configured within a system and even worse without changing the default password settings. Malicious users have developed applications, which can automatically re-enable the 'Guest' account and grant it administrative rights; Empowering users to gain access to sensitive areas of the corporate IT infrastructure.

GFI LANguard collects information on all user accounts and user groups currently enabled on scanned targets. This information is organized in the scan results under two separated nodes. To access the list of user accounts identified during on a target computer, click on the **Users** sub-node. Use the information enumerated in this sub-node to inspect the access privileges assigned to each user account. To gain access to the list of user-groups configured on a target computer, click on the **Groups** sub-node.

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.

Sessions

Click on the **Sessions** sub-node to access the list of hosts that were remotely connected to the target computer during scanning.

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

Services

Active services can be a potential security weak spot in your network system. Any of these services can be a Trojan, a viruses or another type of malware, which can seriously affect your system in a dangerous way. Furthermore, unnecessary applications and services that are left running on a system consume valuable system resources.

During the scanning process, GFI LANguard enumerates all services running on a target computer for you to analyze. This way you can identify which services must be stopped. Further to the freeing up of resources, this exercise automatically hardens your network by reducing the entry points through which an attacker can penetrate into your system. To access the list of services enumerated during a scan, click on the **Services** sub-node.

Processes

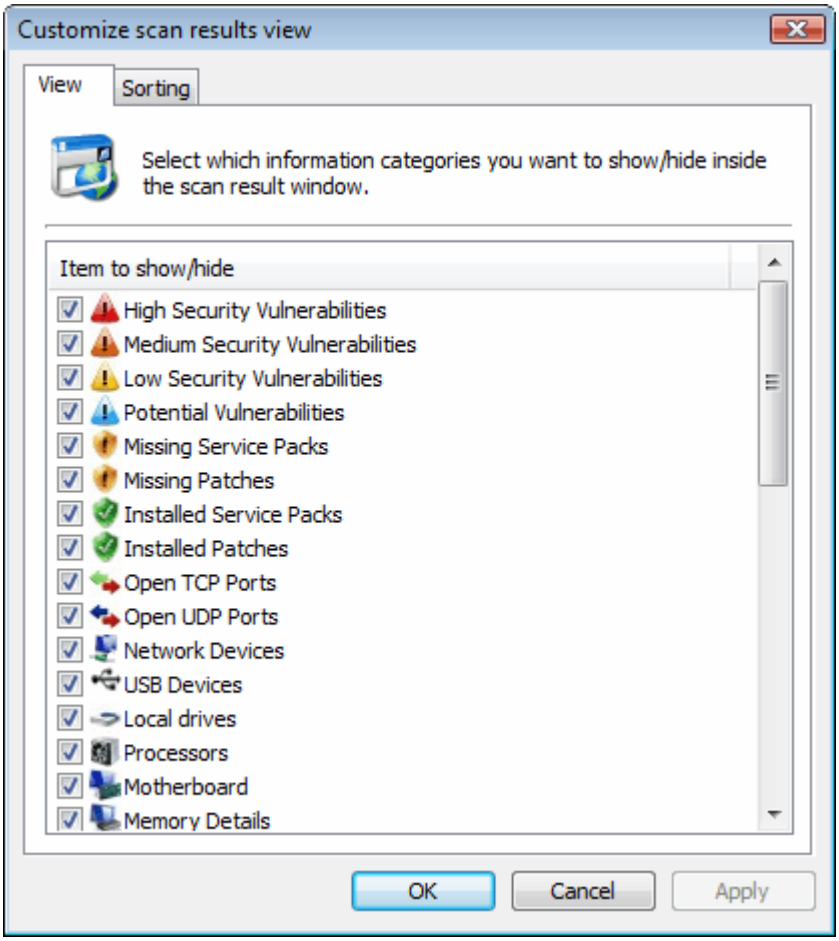
Click on the **Processes** sub-node to access the list of processes that were running on the target computer during a scan.

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.

3.7 Displaying and sorting scan categories

GFI LANguard provides you with the ability to hone down and sort available scan categories and scanned computers. This allows you to focus on specific data that might require your attention in more detail without getting lost in other data that might not be relevant at that point in time.



Screenshot 21- Customize view

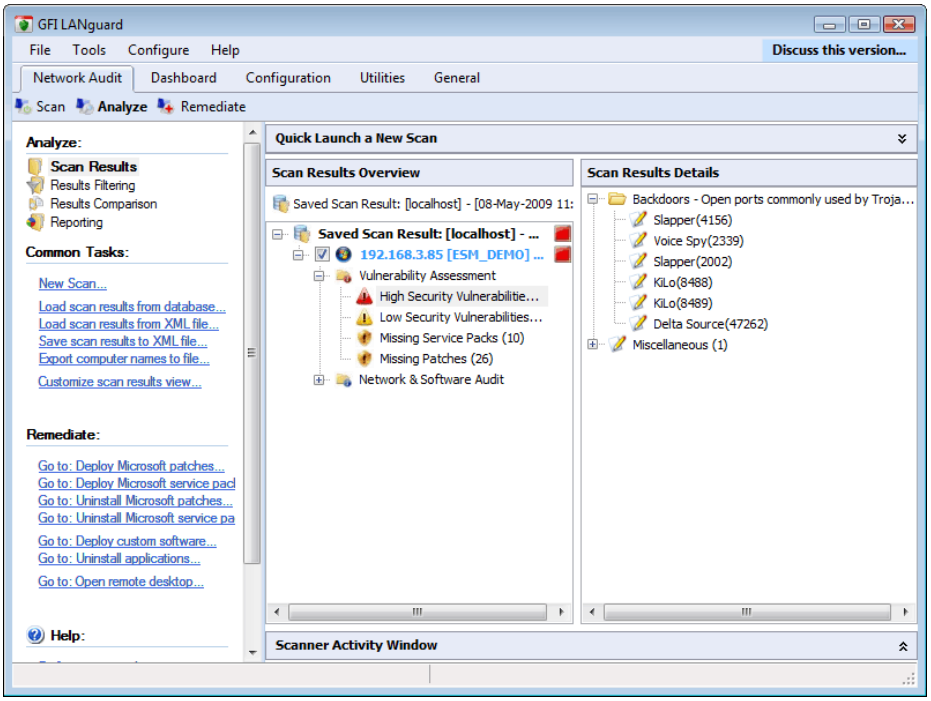
To customize and sort the list of scan results:

1. Under **Common Tasks** in the left panel, click on **Customize scan results view…**

2. From the **View** tab select which scan categories you want to show or hide. Click **Apply** to save setting.

3. Click on the **Sorting** tab and set your sorting preferences. Click **OK** to finalize your configuration.

3.7.1 Loading saved scan results from database



Screenshot 22 - Reloaded scan results

By default, saved scan results are stored in a database. GFI LANguard stores the results data of the last 10 scans performed per scanning profile.

NOTE: You can configure the number of scan results that are stored in a database file. For more information, refer to the Database maintenance options section in this manual.

To load saved scan results from the database backend or from an XML files:

1. Click on the **Analyze ► Scan Results**.

2. Under **Common Tasks** in the left pane, click **Load scan results from database**.

3.8 Saving scan results

Scan results are an invaluable source of information for systems administrators. GFI LANguard results are stored in a MS-SQL Server or an MS-Access database. In addition, scan results can also be exported to XML.

3.8.1 Saving scan results to XML file

To save scan results to XML file:

1. Go to **Network Audit ► Analyze**.

2. Launch a new scan or click on **load the saved scan result from database** to load the results you want to export to XML.

3. Click on **Save scan results to XML file…** and specify XML file where results will be saved.

4. Click **Save** to finalize your configuration.

3.8.2 Loading saved scan results from XML

To load saved scan results from an XML file:

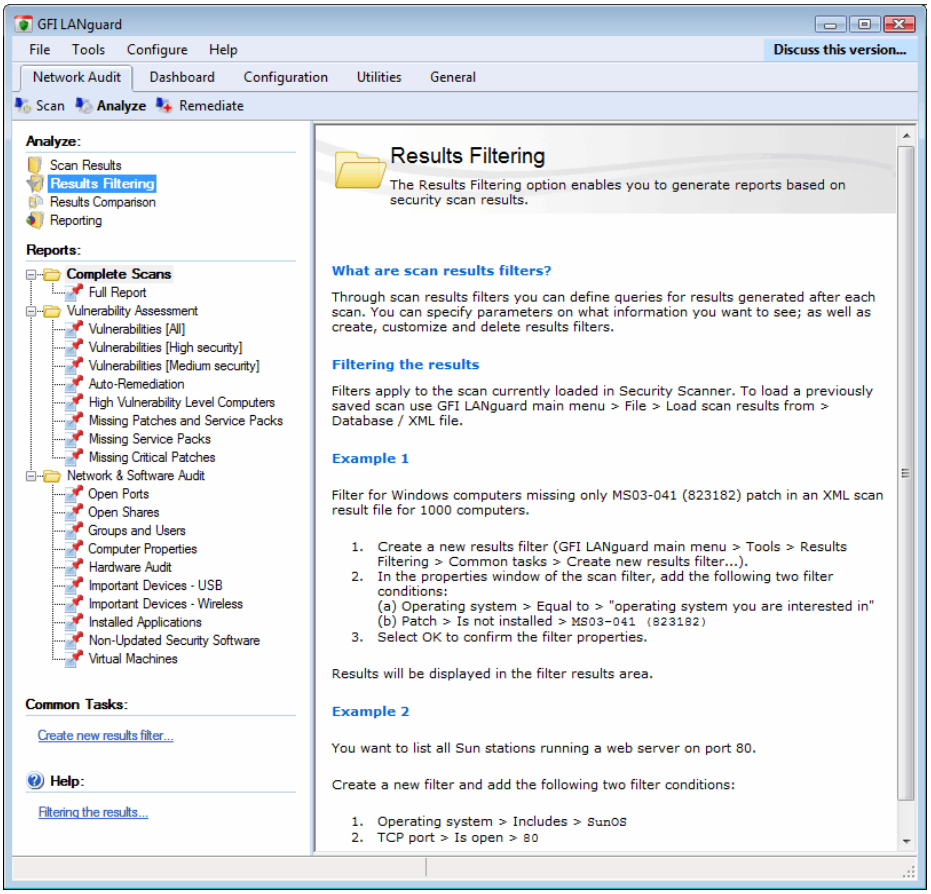
1. Click on the **Analyze ► Scan Results**.

2. Under **Common Tasks** in the left pane, click **Load saved scan results from XML**.

3. Locate the scan results to load and click **OK**.

3.9 Scan filters

Scan results typically present a substantial amount of information. You might however at times require only specific information to achieve a particular targets - such as for example, identifying only which patches are missing in your system.



Screenshot 23 - Scan filter nodes

GFI LANguard ships with a default set of scan result filters that allow you to sift scan results data and display only the relevant information. Scan filters are organized in three categories:

- Complete Scans
- Vulnerability Assessment
- Network & Software Audit

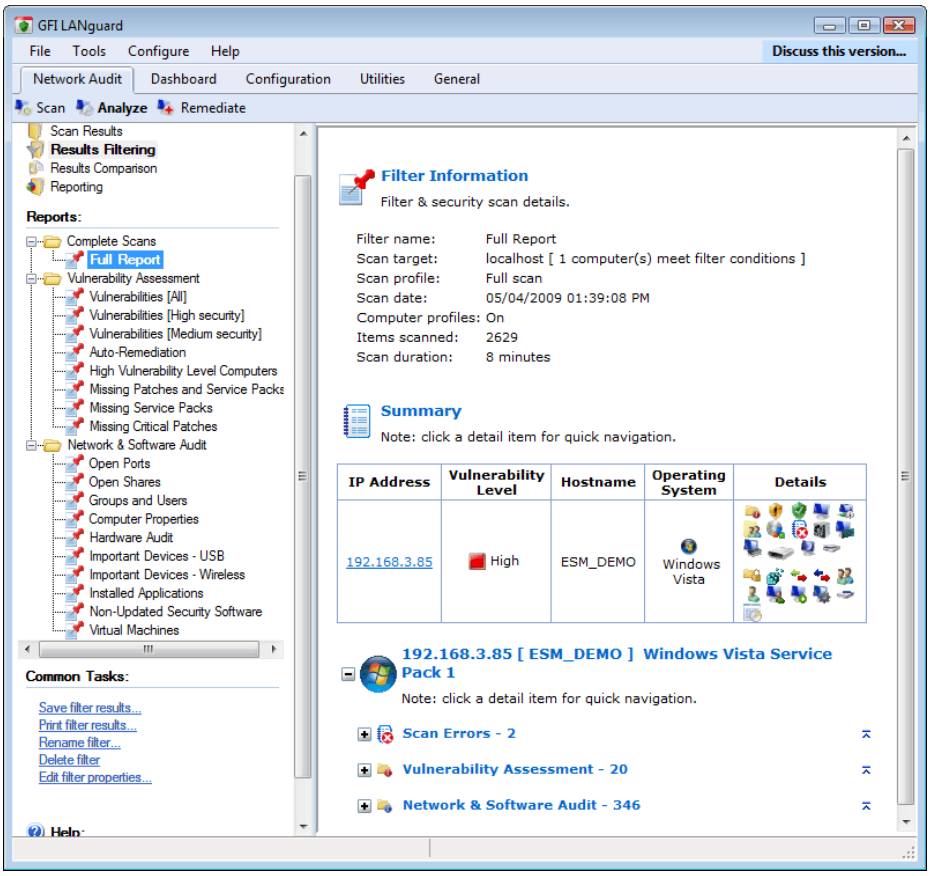
The filters, which ship with GFI LANguard, are:

Scan result filter	Description
Full report	Displays all the information that was collected during a network vulnerability scan including system OS information, outdated anti-virus signatures, and missing patches and service packs.
Vulnerabilities [All]	Displays all Critical, High and Medium severity vulnerabilities discovered during a network security scan.
Vulnerabilities [High security]	Displays only severe vulnerabilities such as missing critical security patches and service packs.
Vulnerabilities [medium security]	Displays only moderate severity vulnerabilities, which may need to be addressed by the administrator. Such as average threats and medium vulnerability patches.
Auto-remediation	Displays auto-remediation actions triggered.
High vulnerability level computers	Use this filter to access list of computers and vulnerability details for which vulnerability level is high.
Missing patches and service packs	Use this filter to access list of missing patches and service packs discovered on scanned target computer(s).
Missing service packs	Use this scan filter to display a list of all computers and computer details of computers, which have a missing service pack.
Missing critical patches	Displays all missing patches marked as critical.
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.
Groups and users	Shows the users and groups detected on the scanned target computer(s).
Computer properties	Shows the properties of each target computer.
Hardware audit	Displays information about the hardware configuration of the scanned 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).
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.
Virtual machines	Shows a list of non-updated security software on the scanned target computer(s).

3.9.1 Filtering scan results

To apply 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 24 - Scan filters: Full report

2. Click **Network Audit ► Analyze**.

3. Select the **Results Filtering** node and expand the **Complete Scans** node.

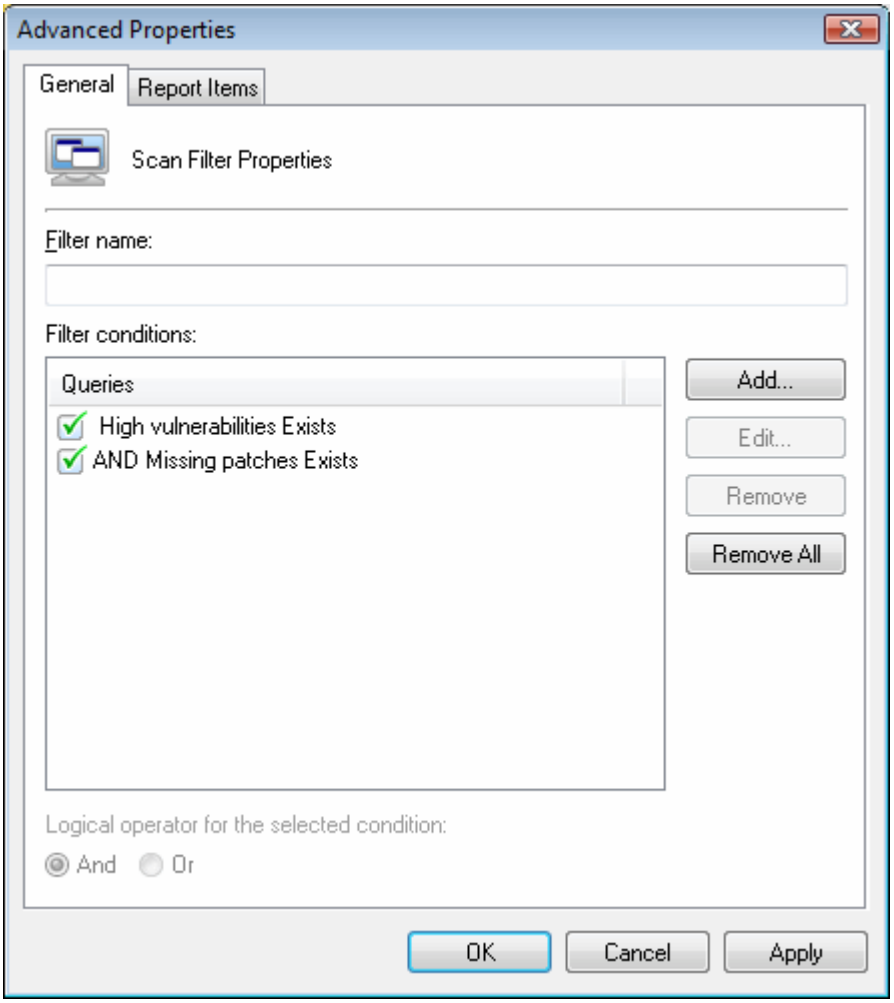
4. Select the scan filter to apply against scan results.

3.9.2 Creating a custom scan filter

Apart the scan filters that ship by default; you can create custom filters based on your requirements and network infrastructure. To create a custom scan filter:

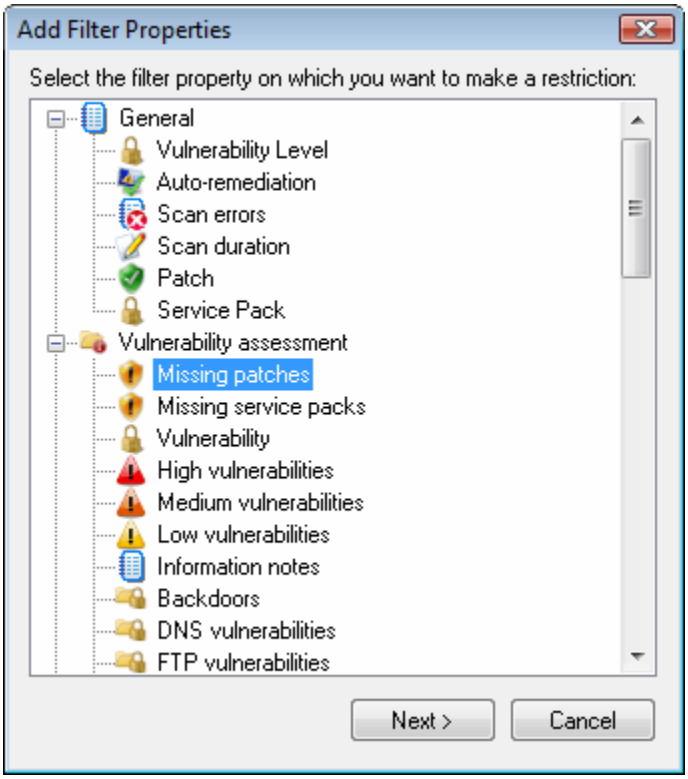
1. Click **Network Audit ► Analyze**

2. Right click on the scan filter category where the new filter will be added and select **Create new results filter…**



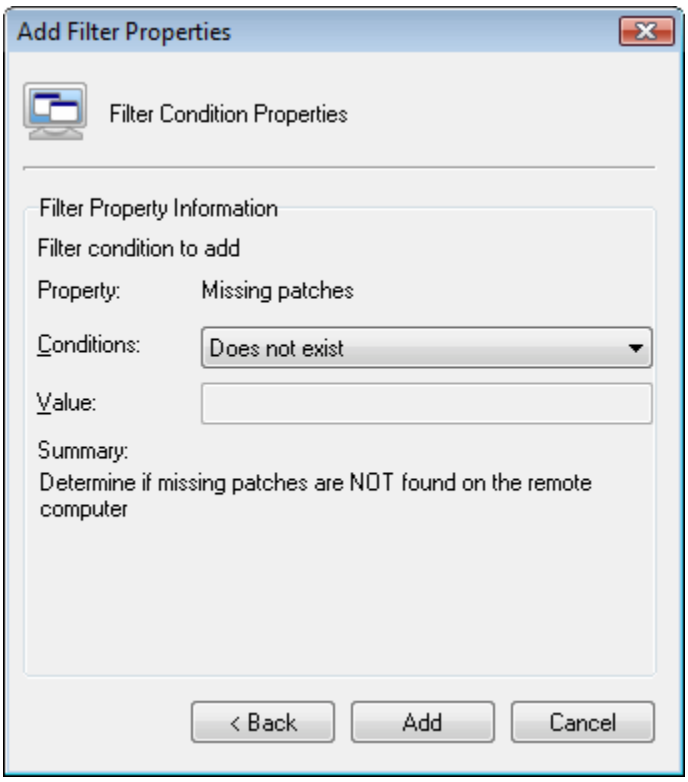
Screenshot 25 - The new Scan filter properties dialog: General tab-page

3. In the **General** tab, specify the name of the new scan filter.



Screenshot 26 - Filter properties dialog

4. Click **Add…** and select the required filter property from the provided list. This defines what type of information is extracted from the scan results (i.e. the area of interest of the scan filter). Click **Next** to continue.

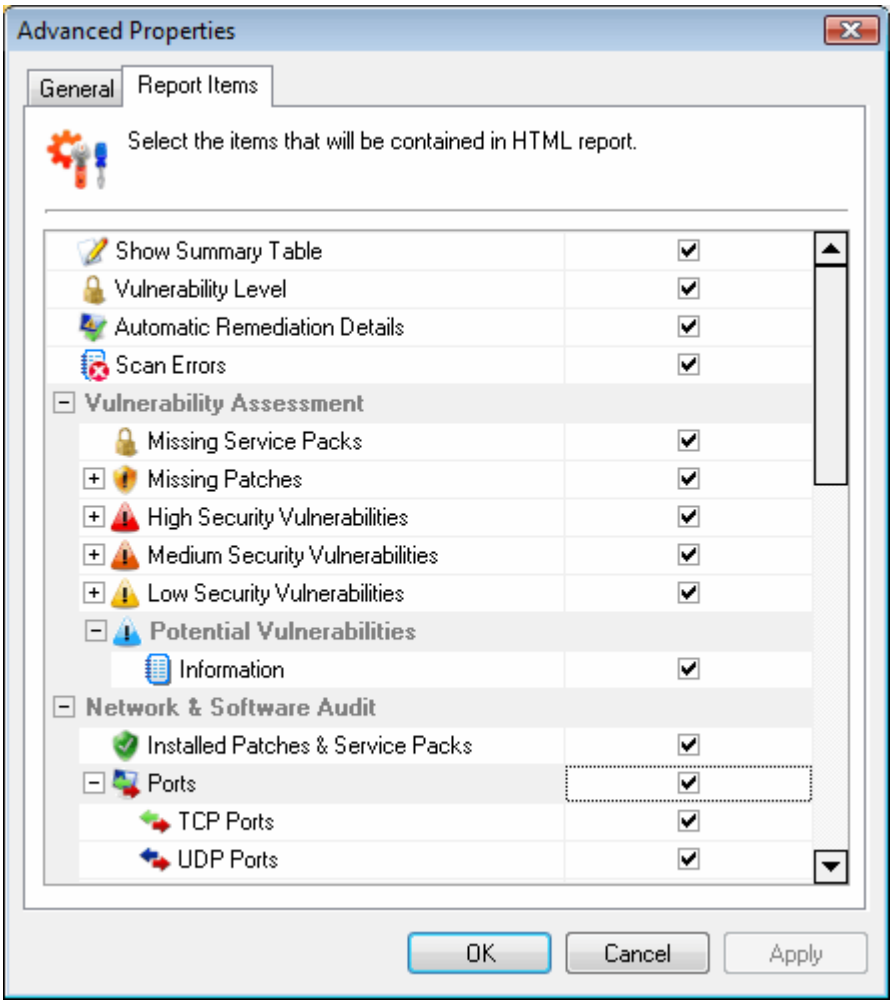


Screenshot 27 - Filter condition properties dialog

5. Select the required filter condition from the drop down provided.

6. Specify the filter value. This is the reference string with the specified condition to filter information from scan results. Click **Add** to continue.

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



Screenshot 28 - The new Scan-Filter properties dialog: Report Items tab-page

7. Click **Report Items** tab and select the information categories/sub-nodes to display. Click **OK** to save and create the new filter.

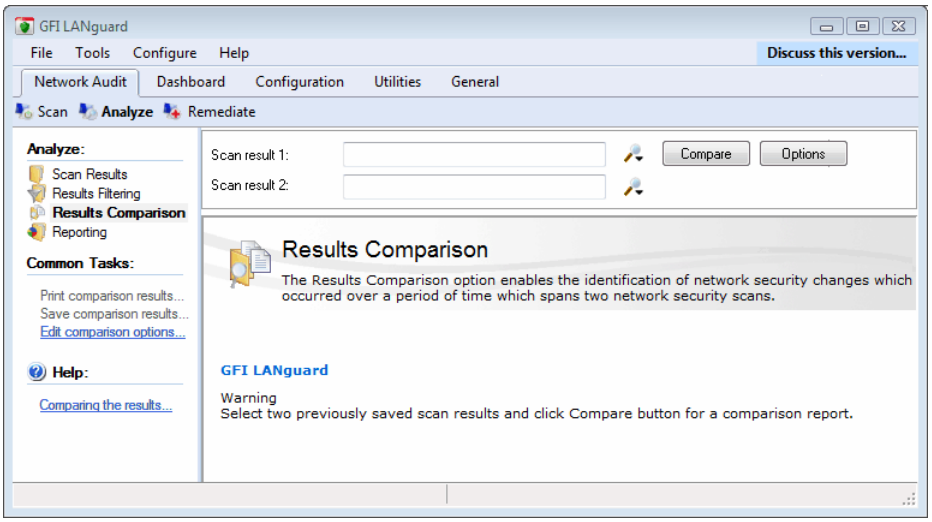
The new filter will be added as a new permanent sub-node under the **Results Filtering** node.
NOTE: To delete or customize a scan filter, right-click target filter and select **Delete filter** or **Edit filter properties**.

3.10 Results comparison

GFI LANguard enables you to compare saved scan results and generate a list of network changes discovered.

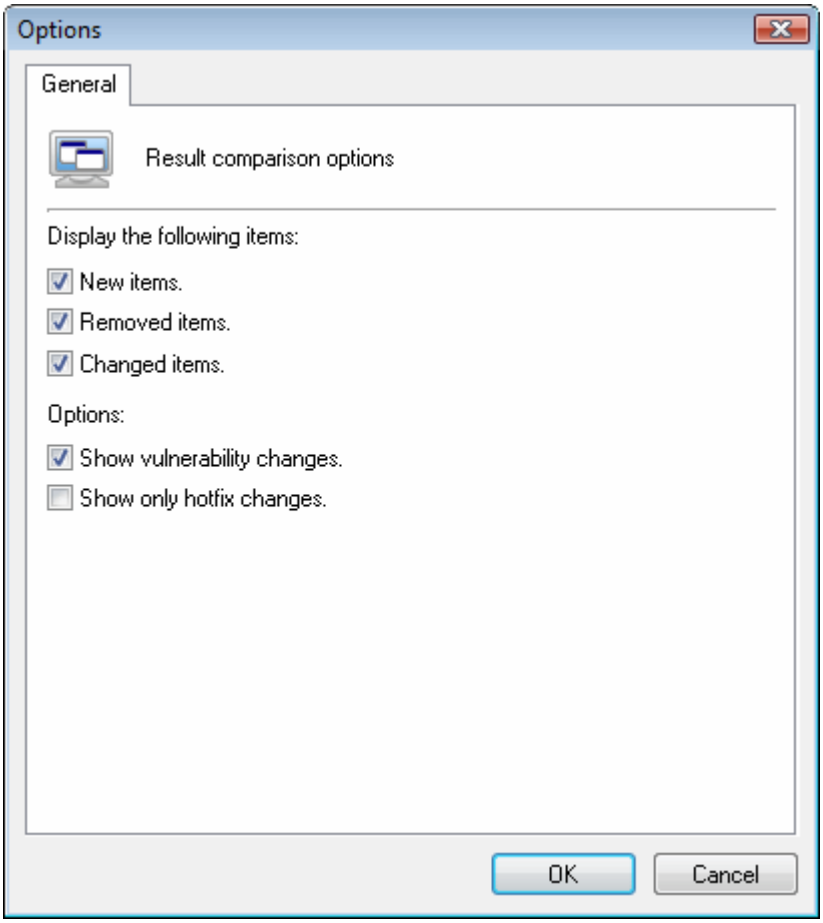
3.10.1 Configuring what scan results changes will be reported

The result comparison tool can report various information discovered during the comparison of two saved scan results. To configure what changes will be included in a comparison report:



Screenshot 29 - Results comparison configuration options

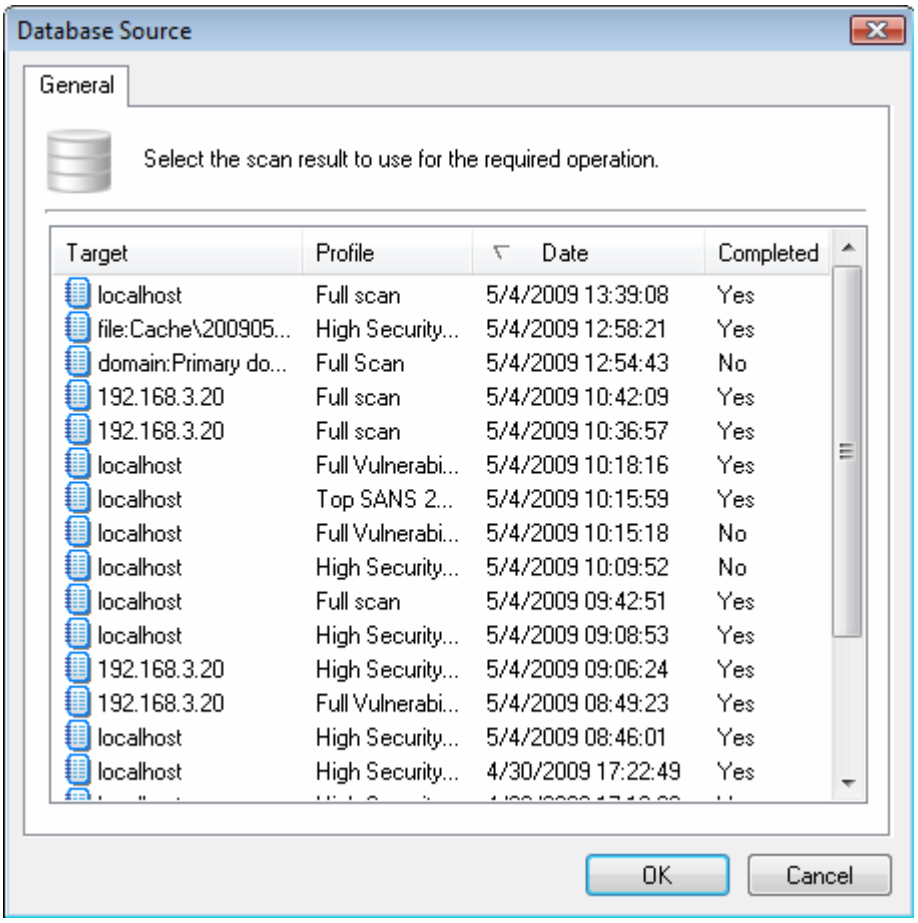
1. Click on **Network Audit ► Analyze**.
2. Right click **Result comparison** node and select **Edit comparison options…**.



Screenshot 30 - Edit comparison options

3. Select the information item(s) to be reported.

3.10.2 Generating a results comparison report



Screenshot 31 - Comparing scan results

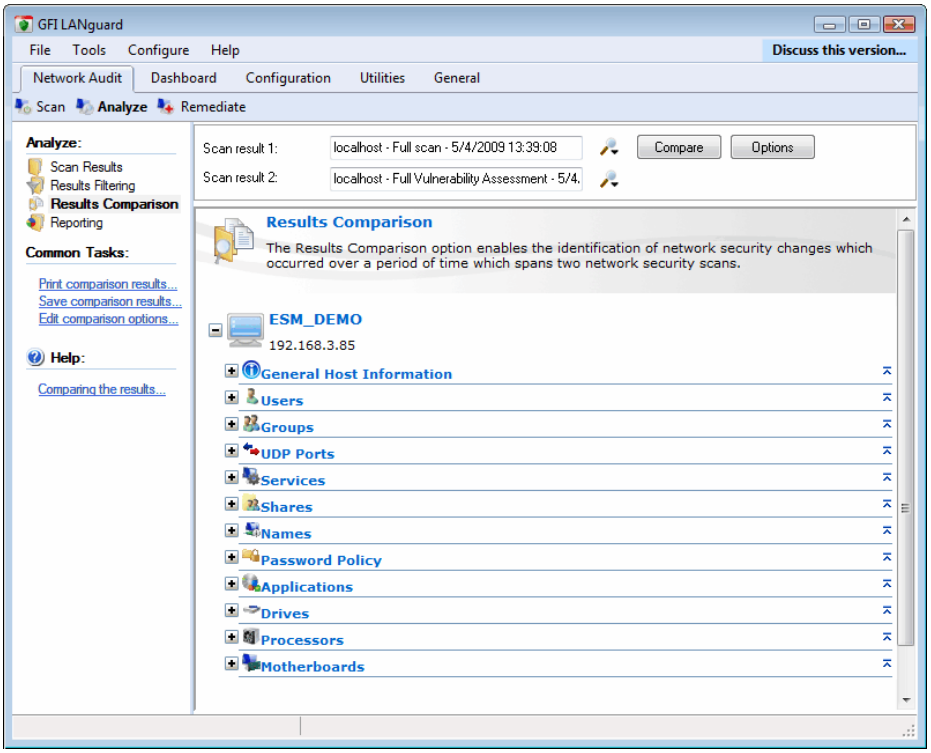
To generate a scan results comparison report:

1. Click on **Network Audit ► Analyze**.
2. Click on the **Result comparison** node.
3. Click search file button and select files to compare select the scan result files that you wish to compare.

NOTE: You can only compare results of the same type i.e. you cannot compare a result stored in XML with one stored in database.

4. Click **Compare** to start the results comparison process.

3.10.3 The Results Comparison Report



Screenshot 32 - Results Comparison Report

On completion, the results comparison report is displayed in the right pane of the management console.

3.11 Reporting

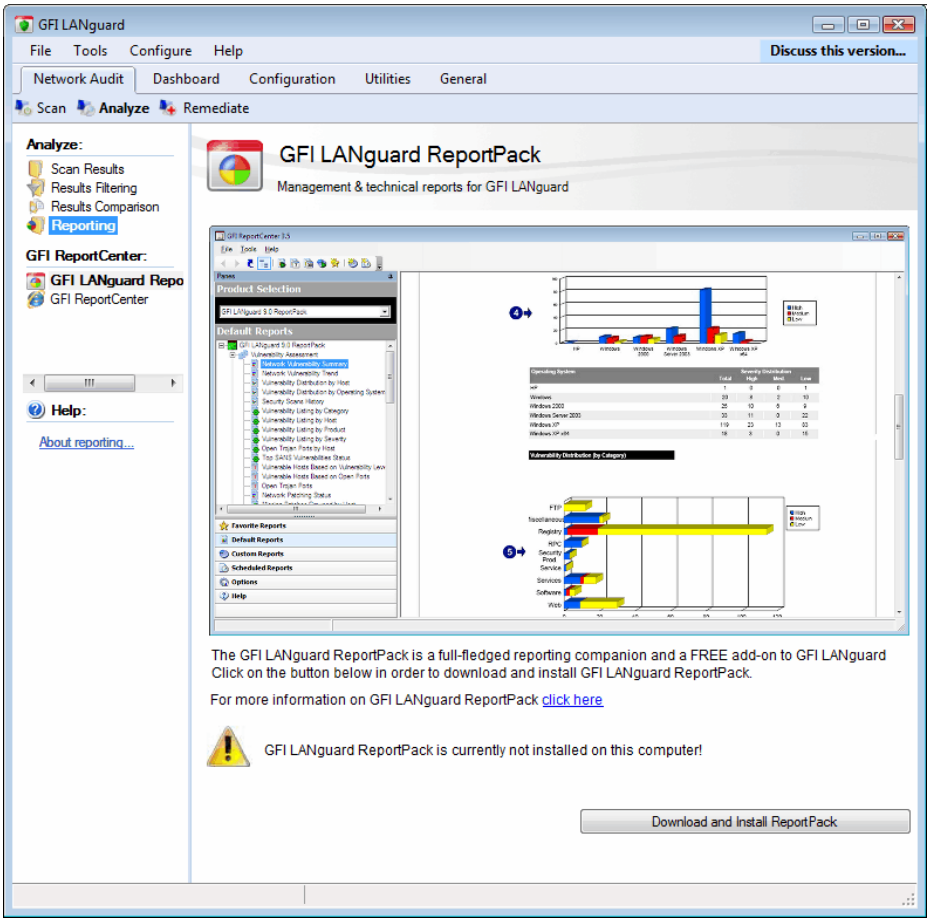
NOTE: On Microsoft Windows Vista computers, an error message might be displayed during the automatic installation of the Microsoft .NET framework 1.1. For more information on how to resolve this issue, refer to http://kbase.gfi.com/showarticle.asp?id=KBID003100.

3.11.1 Access/download/install reporting

GFI LANguard ships with a powerful reporting companion that is ideal to generate management and technical reports.

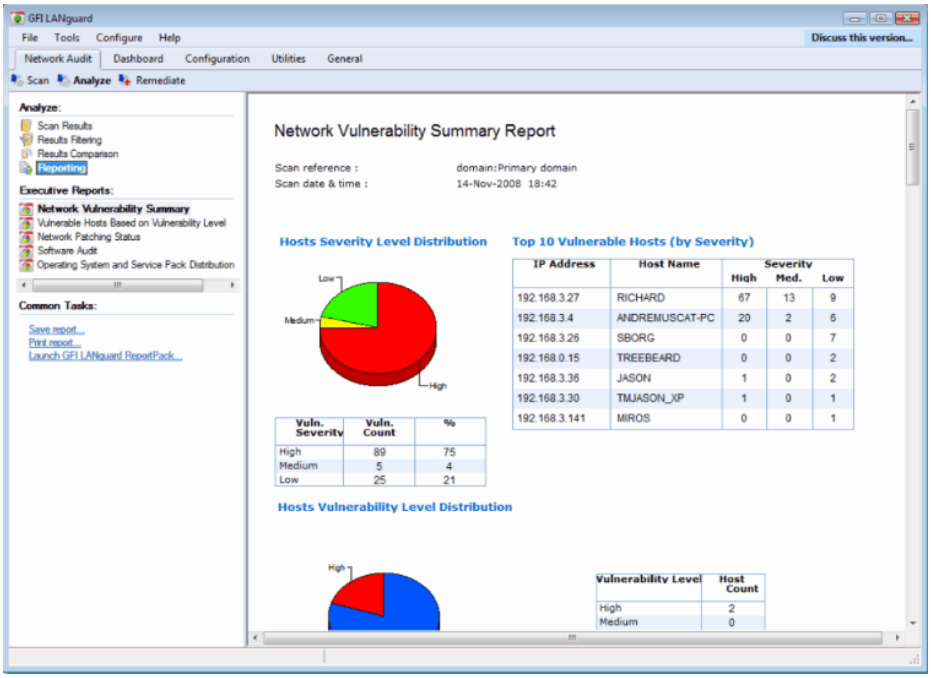
To access reporting:

1. Click on **Network Audit ► Analyze**.
2. Select the **Reporting node**.



Screenshot 33 – GFI LANguard ReportPack not installed

3. If the GFI LANguard ReportPack is not installed, you will be prompted to auto-download and install the reporting package. Click on the Download and Install ReportPack button to proceed.



Screenshot 34 - GFI LANguard with installed ReportPack

4. From the left pane select the reports you run.

NOTE: For more information on the reports in GFI LANguard, refer to the GFI LANguard ReportPack manual available from: http://www.gfi.com/lannetscan/ LANguard9rpmanual.pdf

4. Step 3: Fixing vulnerabilities

4.1 Introduction

Following a scan, GFI LANguard enables you to automatically fix some of the issues identified during your network audit. This is achieved through the built-in tools that ship with the product. Available remediation actions include:

- **Auto-patch management** – This remediation feature automatically downloads missing Microsoft updates and deploys them network-wide.
- **Applications auto-uninstall** – This remediation action enables the auto-uninstall of applications that support silent uninstall. The process involves a test phase (called validation) during which an application is uninstalled automatically to identify if silent uninstall is supported by target application. If it is, all the other instances on the network will be automatically uninstalled during scheduled scans.

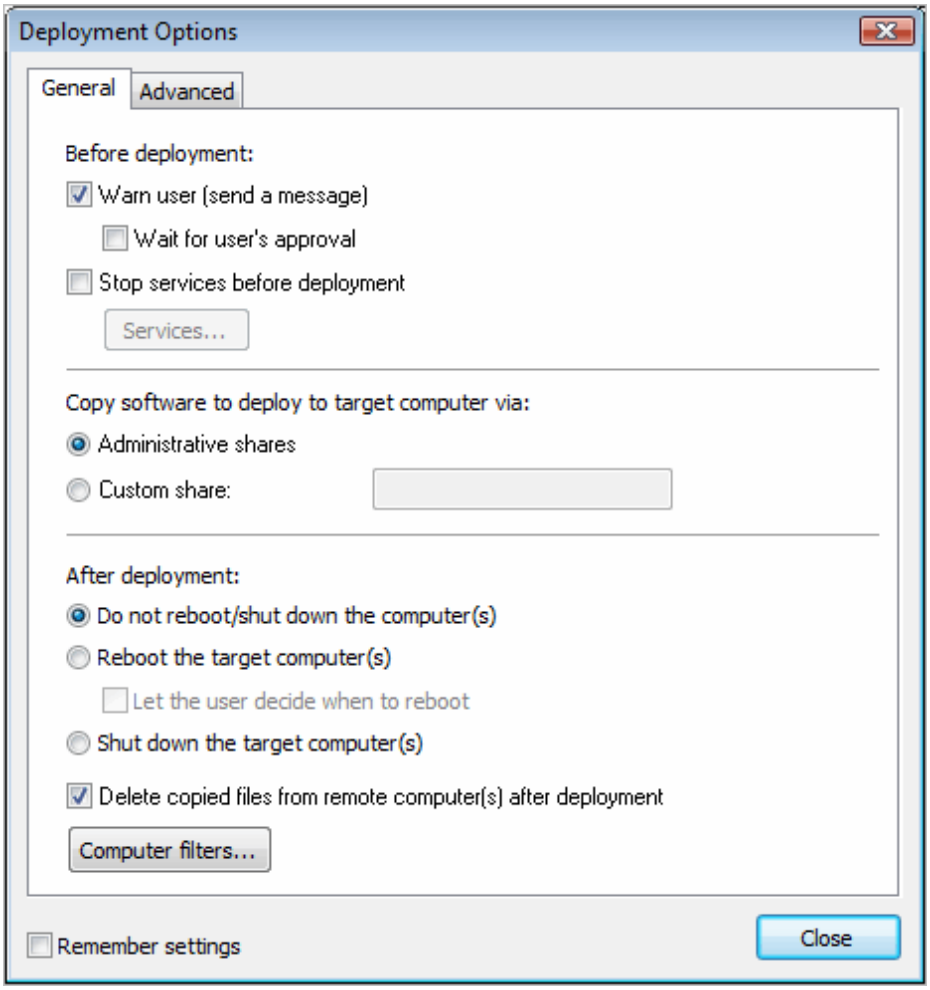
4.1.1 Deployment options

The general deployment options allow you to configure the actions and processes that must be triggered pre/post deployment of the selected file. Supported actions include:

- Send notification/deployment request to the currently logged on user.
- Automated reboot of target computer following deployment operation.

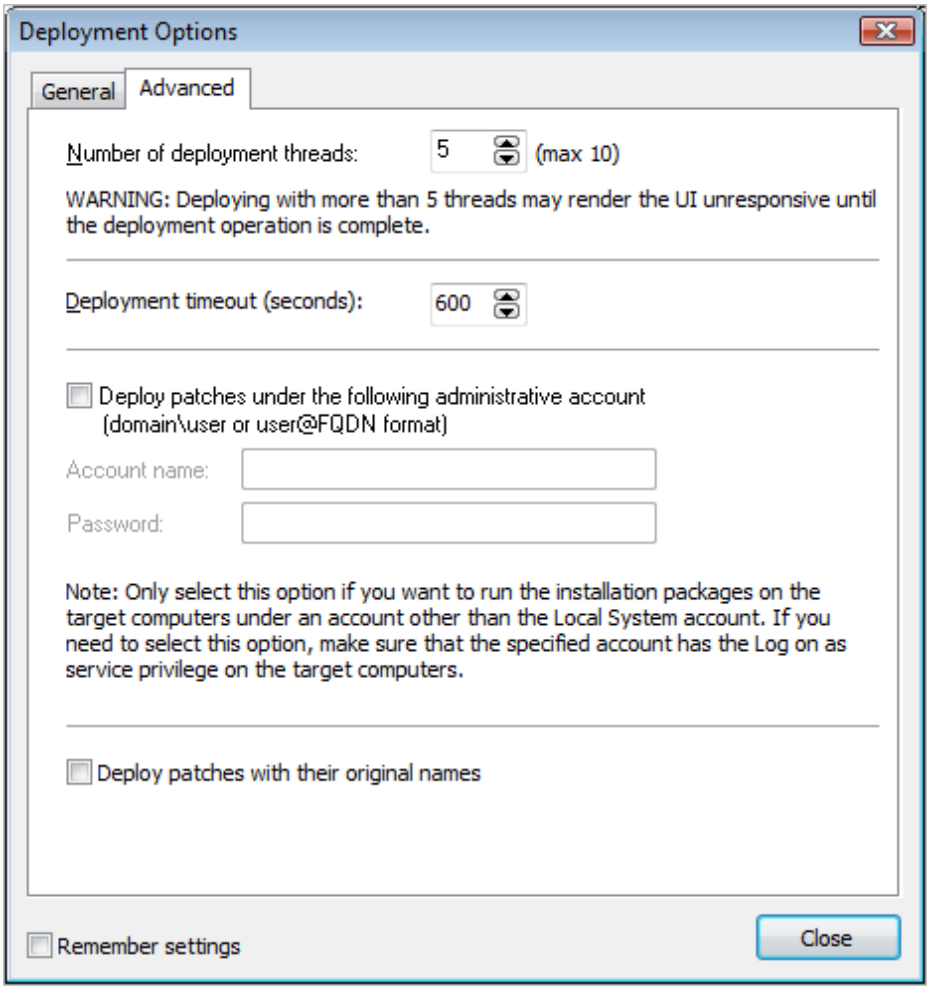
To edit the general deployment options:

1. Under **Common Tasks** in the left pane click **Deployment options…**



Screenshot 35 - General deployment options

2. Configure the **Before deployment** options.
3. Configure the **Copy software to deploy to target computer via:** option by selecting between administrative or a custom shares.
4. Configure the **After deployment** options.



Screenshot 36 - Advanced deployment options

5. Click **Advanced** tab to configure advanced deployment options including:

- the number of patch deployment threads that will be used
- deployment timeout
- authentication credentials for the deployment agent service.

4.2 Patch management

Apart from automatically downloading Microsoft patches and service packs, GFI LANguard can also deploy these updates network-wide as well as recall any patches that have already been deployed. Patches are generally recalled due to newly discovered vulnerabilities or problems caused by the installation of these updates such as conflict issues with present software or hardware. Examples of updates recalled by the manufacturer include patches MS03-045 and MS03-047 for Exchange that was released by Microsoft on October 15, 2006.

Both patch deployment and patch rollback operations are managed by an agent service, which handles all file transfers between GFI LANguard and the remote targets. This service is installed automatically on the remote target computer during patch deployment process.

Important notes

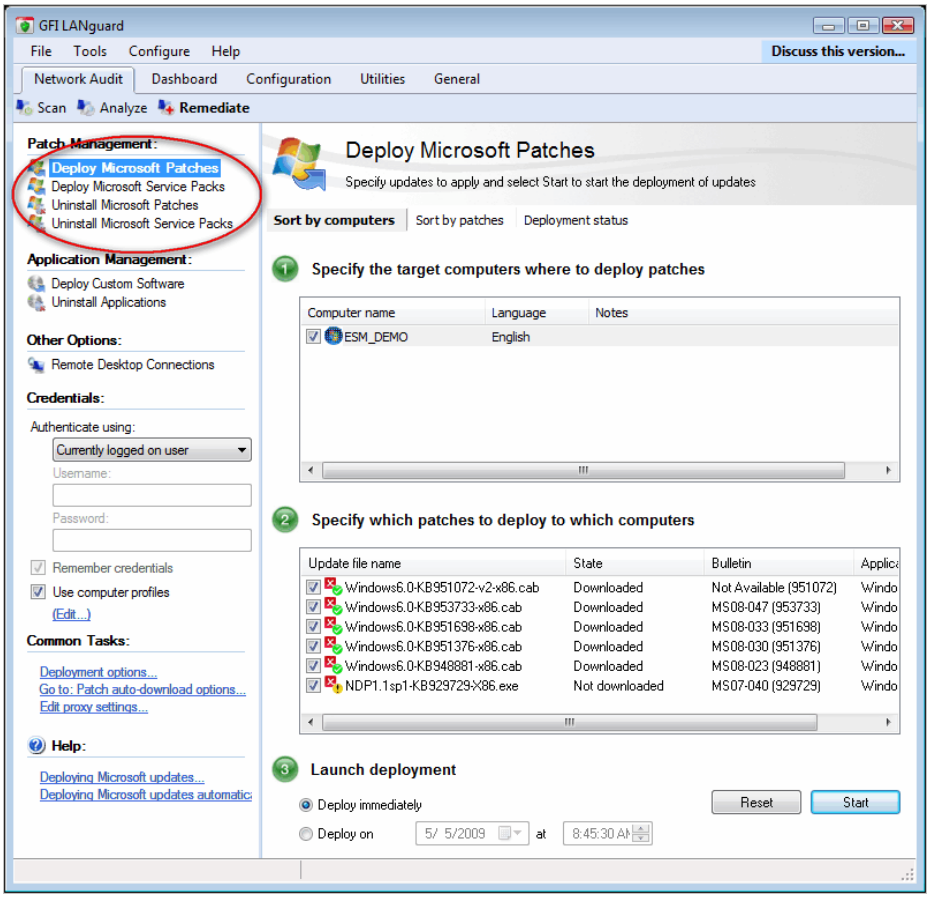
1. To successfully deploy missing patches ensure that GFI LANguard is running under an account that has administrative privileges.

2. Ensure that the NetBIOS service is enabled on the remote target computer. For more information on how to enable NetBIOS, refer to the Enabling NetBIOS on a network computer section in this manual.

3. A complete list of Microsoft products for which GFI LANguard can download and deploy patches is available at http://kbase.gfi.com/showarticle.asp?id=KBID001820.

4. GFI LANguard can be set to automatically download missing patches and service packs discovered during a network security scan. For more information, refer to the Configuring Microsoft updates section in this manual.

4.3 Deploying missing updates



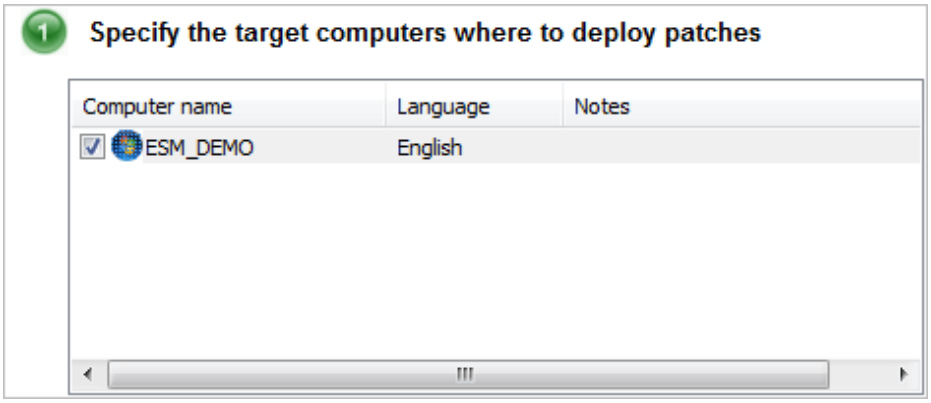
Screenshot 37 - Deploying missing service packs and patches

To deploy missing patches and service packs on specific computers:

1. Launch a scan or load saved scan results from **Network Audit ► Scan**.

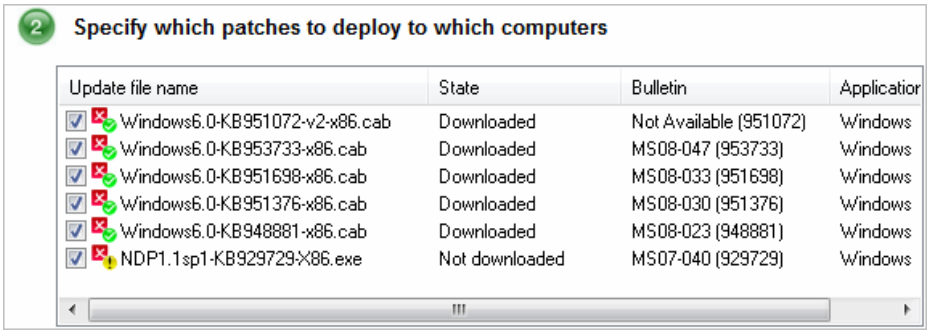
2. Once the scan results are loaded, click on the **Network Audit ► Remediate** tab.

3. Click on **Go to: Deploy Microsoft Patches** or **Go to: Deploy Microsoft Service Packs** accordingly.



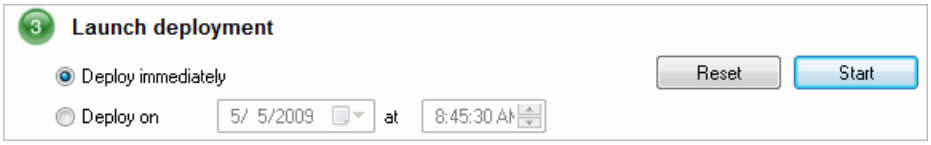
Screenshot 38 - Deploying missing patches on selected computers

4. From list of target computers (labeled as '1'), select the target computers on which patches/service packs will be deployed. Right click on list to access **Select/Unselect all** options.



Screenshot 39 – Select the updates to deploy

5. From the list of missing patches/service packs (labeled as '2'), select the updates to be downloaded and deployed. Right click on the list to access **Select/Unselect all** options.



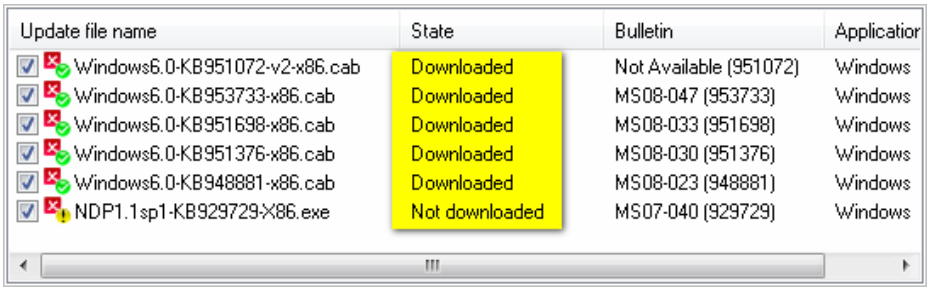
Screenshot 40 – Deploy patches

6. Select the preferred launch deployment option.

- To schedule patch/service pack deployment to a later date/time choose the **Deploy on** option and specify date/time.
- To start the deployment immediately, select **Deploy immediately** and click **Start**.

7. Follow on screen instructions (if applicable)

4.3.1 Identifying the download queue status

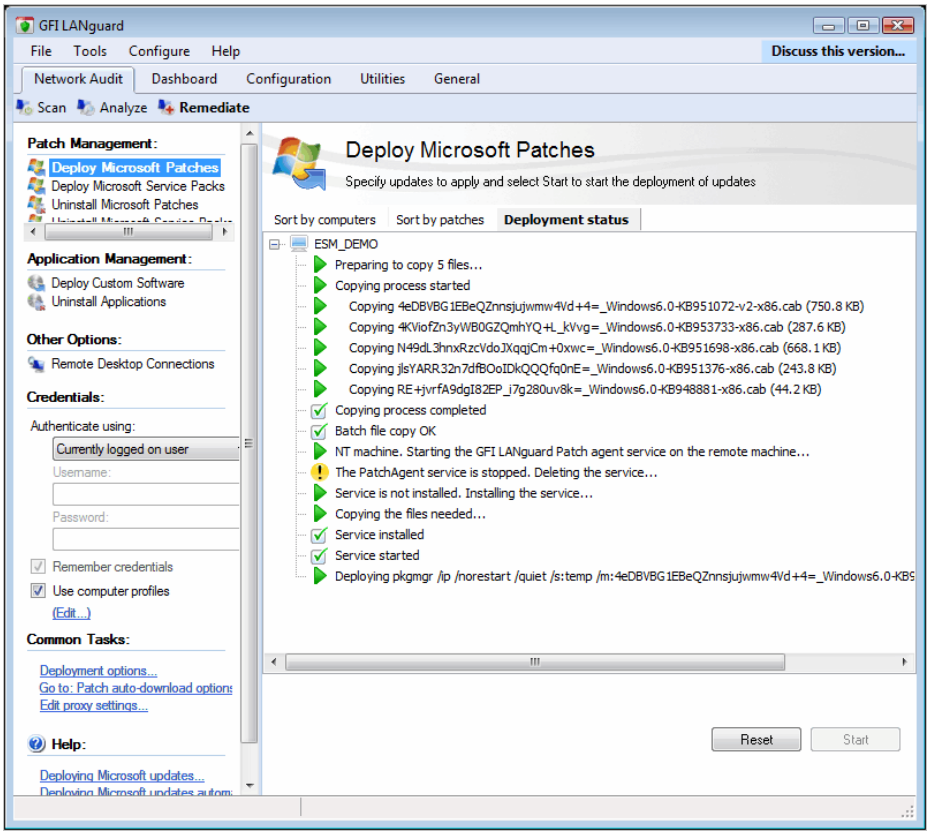


Screenshot 41 - Identifying the download queue status

The icons next to each update file as well as the 'State' column show the current download status. These icons indicate the following states:

- Downloaded
- Currently being downloaded
- Not downloaded.

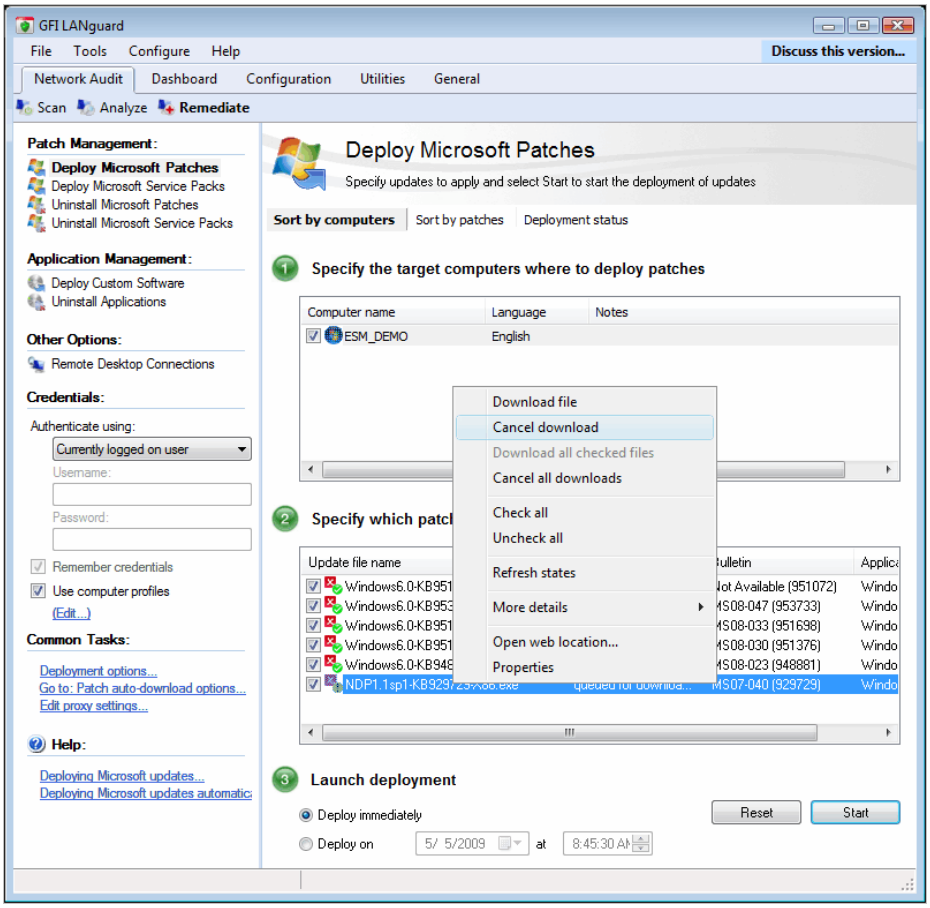
4.3.2 Monitor the patch deployment process



Screenshot 42 - Monitoring the deployment process

To view the patch deployment activity in progress, click the **Deployment Status** tab located at the top of the right pane.

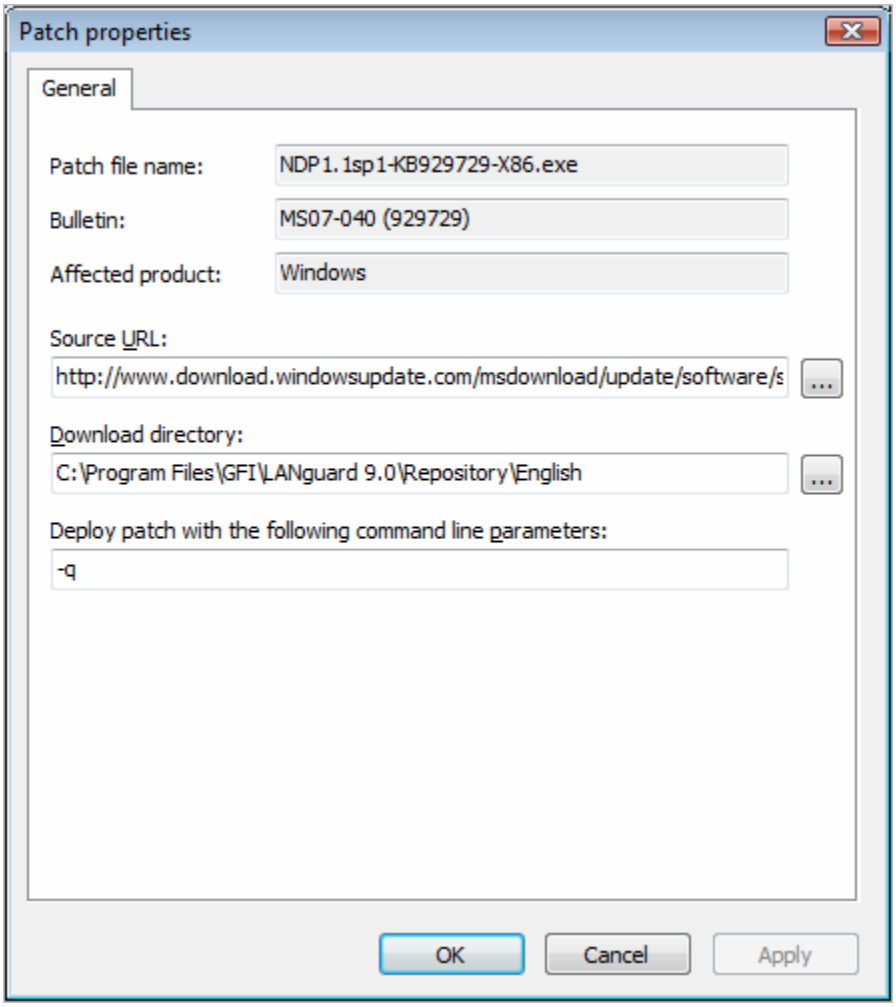
4.3.3 Stopping active downloads



Screenshot 43 - Stopping active downloads

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

4.3.4 (Optional) Configure alternative patch-file deployment parameters



Screenshot 44 - Patch file properties dialog

You can optionally configure alternative patch deployment parameters on a patch-by-patch basis. Parameters that can be configured include:

- Download URL
- Destination path of the downloaded patch file.

To change the deployment and download settings of a missing patch:

1. Right click on the respective patch file and select **Properties**.

2. Make the required changes and click **OK** to finalize your configuration.

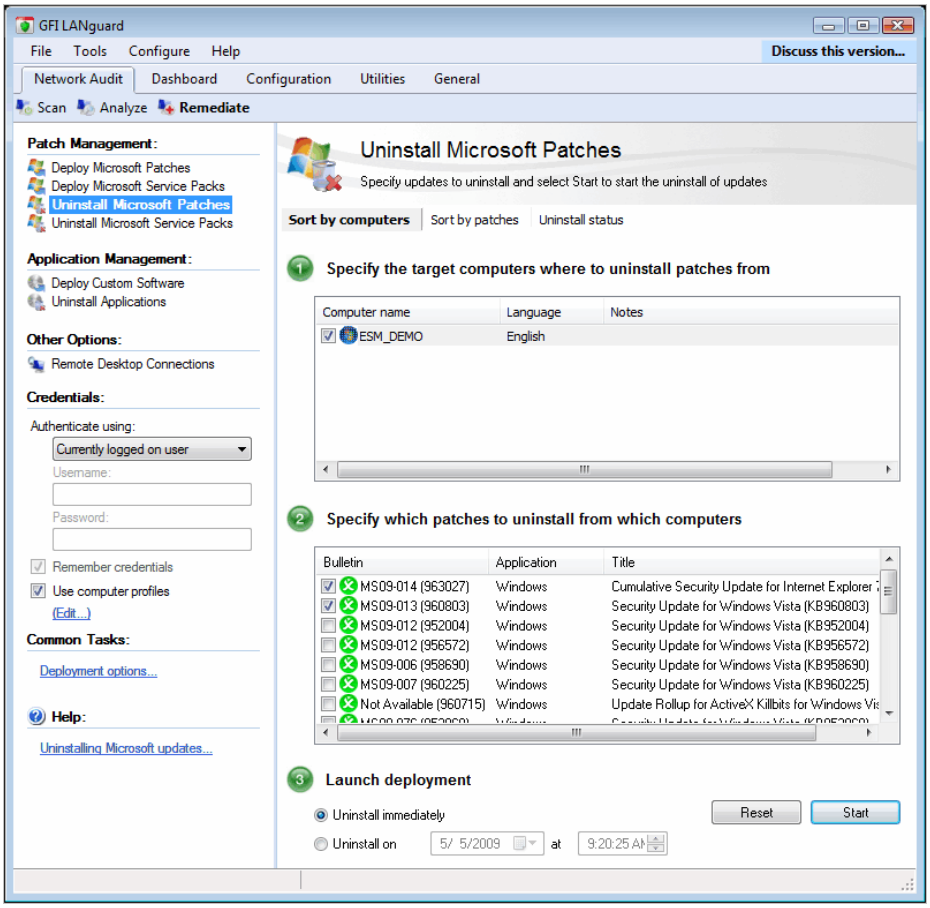
4.3.5 Uninstall patches already deployed on targets

To roll back deployed patches and service packs:

1. Go to **Network Audit ► Scan** and launch a scan on the computer(s) from which you need to roll back patches.

2. From the scan results, right click on listed computers and select **Remediate ► Uninstall Microsoft patches**

3. Select the target computer.



Screenshot 45 – Uninstalling a patch

4. Select the patches or service packs to be uninstalled from selected targets.
5. Click **Start** to initiate the uninstall process.

4.3.6 Monitoring the patch uninstall process

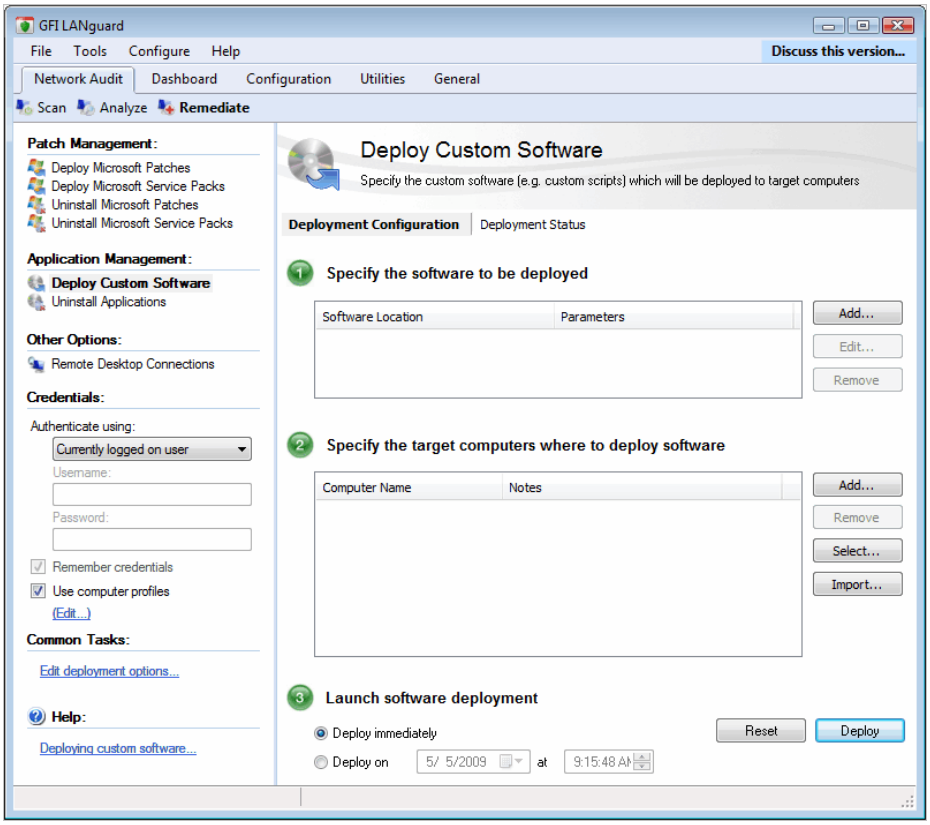
To view the patch rollback progress, click on the **Uninstallation Status** tab.

4.4 Deploying custom software

In addition to Microsoft security updates (i.e. patches, etc.), GFI LANguard also allows you to remotely deploy third party or custom software network-wide. Software that can be remotely deployed via this engine includes:

- Security applications such as complete anti-virus/anti-spyware solutions, software firewalls and more
- Third party software updates and patches such as anti-virus/anti-spyware signature file updates
- Custom code such as scripts and batch-files
- Desktop applications such as MS Office 2007 and more.

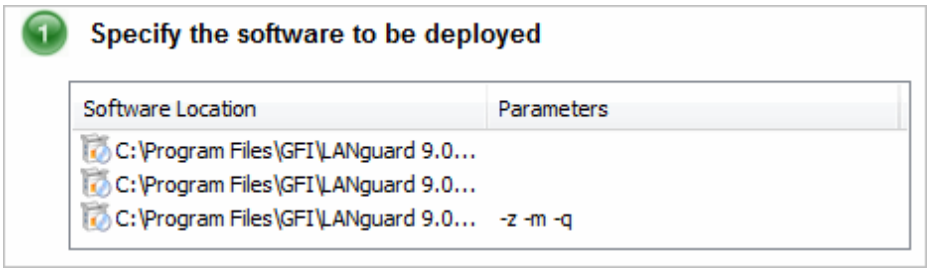
4.4.1 Enumerating the software to be deployed



Screenshot 46 - Deploy custom software

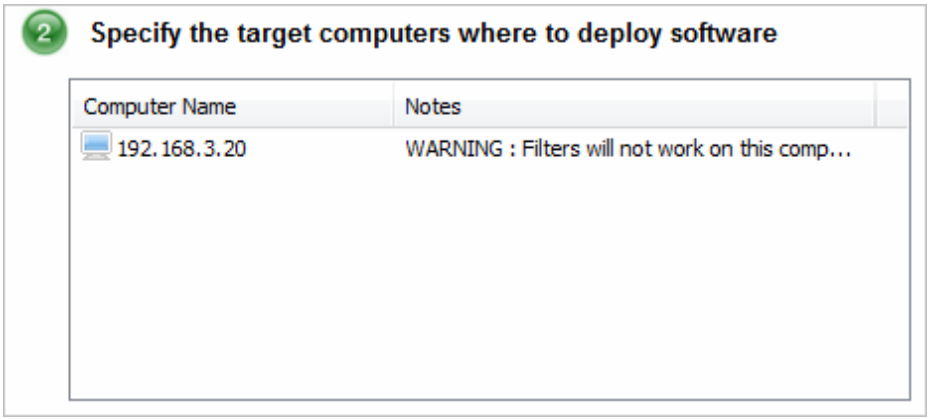
To specify which software to deploy:

1. Click on **Network Audit** tab ► **Remediate**.
2. Click **Deploy Custom Software**.



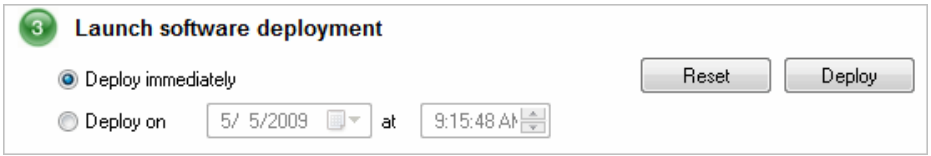
Screenshot 47– List of software to be deployed

3. From list of software to be deployed (labeled as '1'), click **Add…** and specify the path to the application to be deployed.
4. Specify any additional parameters needed by the application and click **OK**.



Screenshot 48 - Target computers for software deployment

5. From list of target computers (labeled as '2'), click **Add…** to specify the target computers on which the software will be deployed.



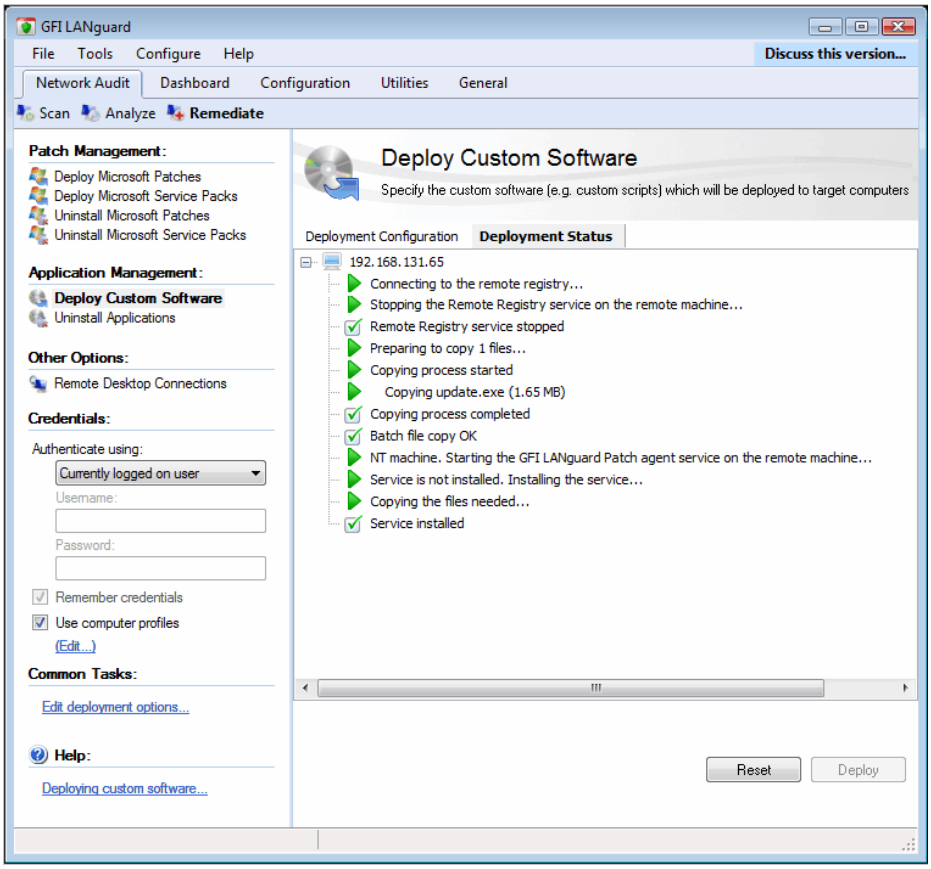
Screenshot 49 - Launch deployment options

6. Select the preferred launch deployment option.

- To schedule patch/service pack deployment to a later date/time choose the **Deploy on** option and specify date/time.
- To start the deployment immediately, select **Deploy immediately** and click **Start**.

7. Repeat the process described above for every file/software to deploy.

8. Follow on screen instructions (if applicable) and switch to the **Deployment Status** tab to view the progress of the installation.



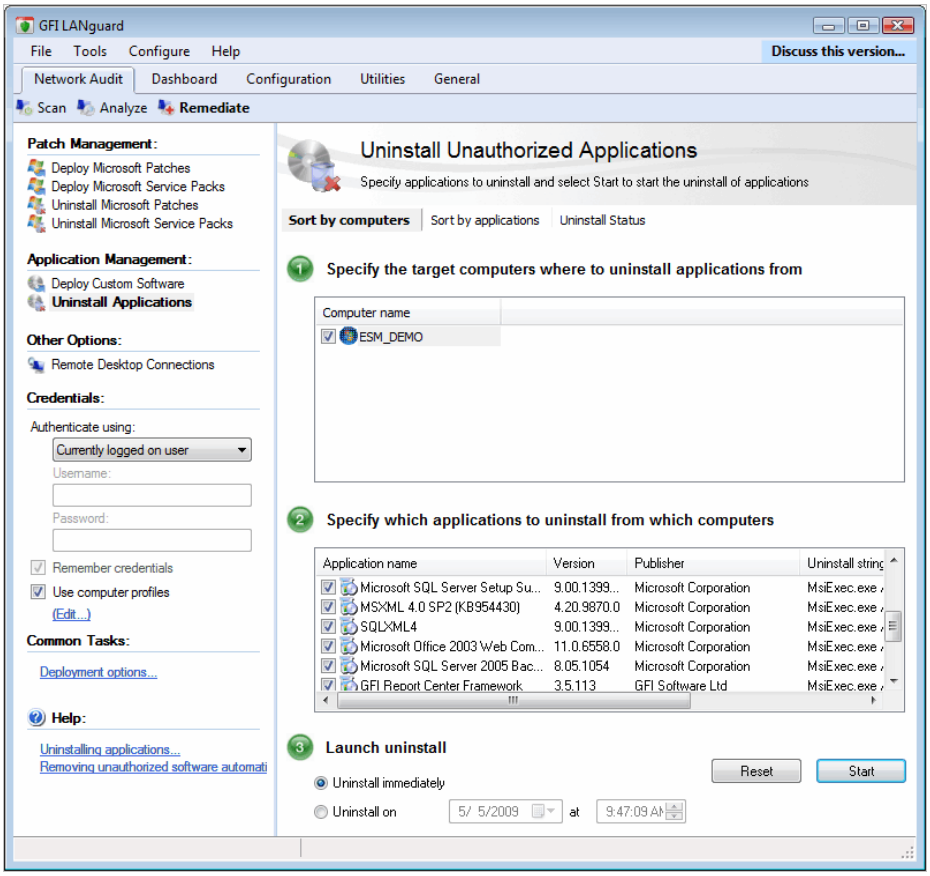
Screenshot 50 – Software deployment status

4.5 Uninstall applications

Through application uninstallation, you can control which applications are installed, on which computers, and uninstall any unauthorized applications present on network computers.

To uninstall applications:

1. Select **Network Audit** tab ► **Remediate** tab and click **Uninstall Applications**.



Screenshot 51 - Uninstall applications

2. From the **Uninstall Unauthorized Applications** screen, select either the **Sort by computers** tab (view list of computers and the relative applications to uninstall) or the **Sort by applications** tab (list of applications and relative computers to uninstall from).

3. Select the applications/computer combination to uninstall.

NOTE: The list of applications displayed relies on the unauthorized applications set up for the scanning profile in use. For more information on how to set up and validate applications to uninstall, refer to the Applications inventory and Application auto-uninstall validation sections in this manual.

4. Select **Uninstall immediately** to immediately uninstall any applications selected or provide a date/time combination in the **Uninstall on** field.

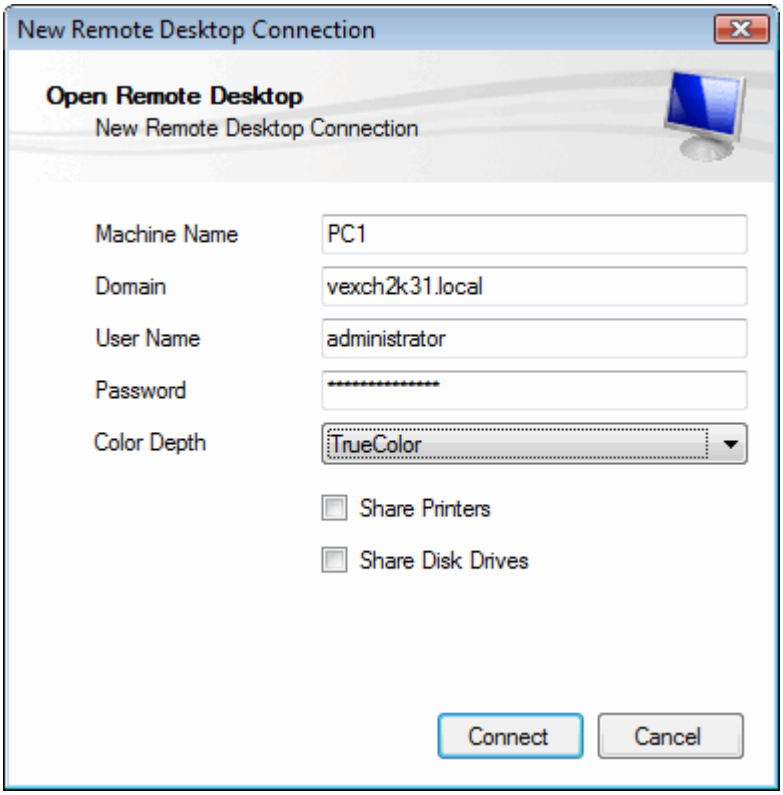
5. Click **Start** to uninstall applications based on your configuration. Review the status of any uninstallation from the **Uninstallation status** tab.

4.6 Remote remediation

Through remote remediation, you can control remote computers using Terminal Services and Remote Desktop Protocol. Remote remediation enables you to install missing patches, service packs and custom software through a remote connection.

To create a new remote connection:

1. Select **Network Audit ► Remediate ► Remote Desktop Connections ► New Connection.**



Screenshot 52 – Creating a remote connection

2. Specify the credentials required to connect to the remote machine.

3. Click **Connect** to open a remote connection with the target machine.

4.7 Automatic Remediation

Through scheduled scans, you can launch automatic remediation actions. This enables you to automatically download and deploy missing patches as well as to automatically uninstall unauthorized applications during scheduled operations.

To uninstall software, a 3-stage process is required in order to identify whether the selected application supports silent uninstall:

Stage 1 – Select the application to be auto-uninstalled

Stage 2 – Ensure that application supports silent uninstall by trying to remotely uninstall the application. This is called the validation process.

Stage 3 – Setup a scheduled scan, which will successfully uninstall all instances of that application from targets during a scheduled scan.

NOTE: Auto-remediation option of scheduled scans and application un-authorization only work for scanning profiles which perform Missing patches detection and/or Installed application detection

Important notes

1. Always test patches in a test environment before deployment.

2. By default Microsoft updates are not enabled for automatic deployment. Manually approve each patch (as it is tested) or set all Microsoft updates as approved.

4.7.1 Automatically deploy missing Microsoft updates

To automatically deploy missing patches follow the instructions below before setting up a scan with auto-remediation options.

Step 1: Approve the patches to deploy automatically.

1. From the **Configuration** tab, navigate to **Microsoft Updates ► Patch Auto-Deployment**.

2. Select the patches to approve for auto-deployment. Optionally, set the automatic patch approval options by selecting the **To automatically approve patches and/or service packs, click here** option. For more information, refer to the Auto-deployment settings section in this manual.

Step 2: Set up a scheduled scan.

Set up a scheduled scan that will have the option to automatically deploy all approved missing Microsoft updates. Within the scheduled scan, define what computers will be scanned for missing Microsoft updates and the frequency.

Step 3: Review scheduled scan status

Select **Dashboard ► Scheduled Operations** to review the status of scheduled scans and auto-remediation operations

4.7.2 Automatically uninstall unauthorized applications

To automatically uninstall unauthorized applications follow the instructions below before setting up a scan with auto-remediation options.

Step 1: Define unauthorized applications list.

1. From the **Configuration** tab, select **Applications inventory** sub-node.

2. In the right pane, click the application to unauthorized under the heading **unauthorized on** column.

3. Select a scanning profile to mark the application as unauthorized for that profile. Click **Next** to continue.

4. Review the currently affected applications screen and click **Finish** to finalize settings.

Refer to the Applications inventory section in this manual for further on defining unauthorized applications.

Step 2: Validate the applications to remotely uninstall.

1. From the **Configuration** tab, select **Applications inventory ► Auto-Uninstall Validation** sub-node.

2. In the right pane, select an application to validate click **Validate…** button.

3. In the **Application auto-uninstall validation** wizard click **Next** in the Welcome screen and select the computer on which to test the application auto-uninstall. Click **Next** to continue.

4. Provide the authentication details for the validation operation and click **Next** to continue.

5. Review the **Auto-uninstall validation wizard** information and click **Start** to validate application auto-uninstall.

For more information on auto-uninstall validation refer to Application auto-uninstall validation in this manual.

Step 3: Set up a scheduled scan.

Define a scheduled scan that will have the option to automatically uninstall all unauthorized applications, which are validated. Within the scheduled scan, define what computers are scanned, the frequency and which the unauthorized applications are.

Step 4: Review scheduled scan status

Select **Dashboard ► Scheduled Operations** to review the status of scheduled scans and auto-remediation operations.

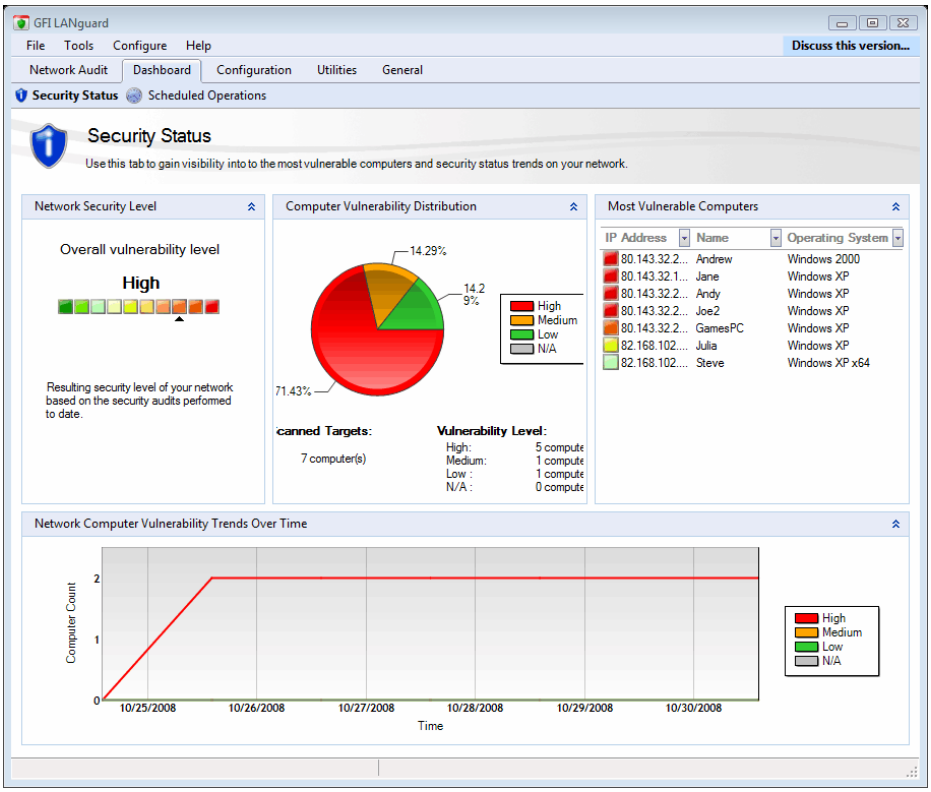
5. GFI LANguard dashboard

5.1 Introduction

GFI LANguard provides you with a dashboard, which graphically indicates the status of various operations that might be currently active, or are scheduled.

Access the GFI LANguard dashboard from the **Dashboard** tab.

5.2 Viewing the global security threat level



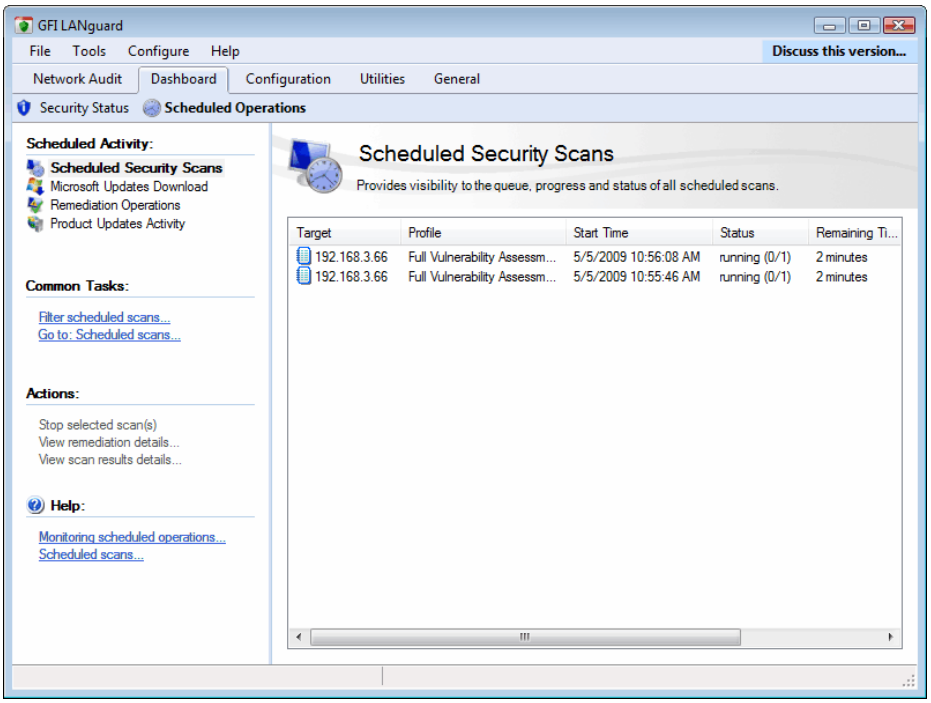
Screenshot 53 - Status Monitor: Statistics tab

The **Security Status** tab provides you with extensive security information based on data acquired during scans. This enables you to determine at a glance the current network vulnerability level, the top most vulnerable computers, the number of computers in the database. It also provides you with a breakdown of the vulnerable computers according to their vulnerability level.

NOTE: The data displayed in the **Security Status** tab is dynamically worked out by GFI LANguard based on previous scans.

5.3 Monitoring scheduled activity

Scheduled Activity is all the GFI LANguard operations that have been set up to trigger at a later date and time. Through the **Scheduled Operations** tab in the Dashboard tab, you can monitor these operations and stop operations in progress or remove finished operations details.



Screenshot 54 - Dashboard: Scheduled Operations tab

To view scheduled operations in progress:

1. Select the **Dashboard ► Scheduled Operations** tab.

2. Under **Scheduled Activity** in the left panel, select **Security Scans**, **Patch Downloads**, **Remediation Options** or **Updates History** and trigger any of the operations from the left panel as required. The Scheduled activity options are described below:

Scheduled Security Scans

The scheduled security scans screen enables monitoring of all the scheduled security scans, which are currently in progress, which have been successfully, or unsuccessfully completed. A scheduled scan can be stopped, by right clicking the security scan, and selecting **Stop selected scan(s)** option.

For more information on how to set up a new scheduled scan, refer to Setting up a scheduled scan section in this manual.

Microsoft Updates Downloads

The Microsoft Updates Downloads screen enables you to monitor, pause, cancel or change priority all the scheduled patch downloads. For more information on how to configure scheduled patch downloads refer to Auto-download settings section in this manual.

Remediation Operations

The remediation operations screen enables you to monitor as well as cancel all the scheduled remediation features within GFI LANguard. For more information on how to set up scheduled remediation operations, refer to Automatic Remediation section in this manual.

Product Updates Activity

The Product updates activity screen enables you to monitor or edit GFI LANguard scheduled or manual updates. For more information on how to set up scheduled or manual updates, refer to Program updates section in this manual.

6. Configuring GFI LANguard

6.1 Introduction

GFI LANguard allows you to run vulnerability scans straight out of the box – using the default settings configured prior to shipping. However, if required you can also customize these settings to suit any particular vulnerability management requirements that your organization might need. You can customize and configure various aspects of GFI LANguard including scan schedules, vulnerability checks, scan filters and scan profiles.

6.2 Scheduled Scans

Scheduled scans enable you to automate the process of performing regular scans, auditing and remediation procedures.

6.2.1 Reviewing, editing or deleting scan schedules

Scan schedules can be reviewed, edited, or deleted from the **Configuration ► Scheduled Scans** node.

Screenshot 55 - Scheduled scan toolbar

All the scans are listed in the review page together with the relevant information. Use the scheduled scan toolbar to:

Complete/Combination Scans Scanning Profiles	
	**Add new scan** button – Use this button to display the **New scheduled scan** wizard and create a new scheduled scan.
	**Reporting options** button – Use this button to display the **Scheduled Scans Reporting Options** dialog for the selected scheduled scan. For more information on how to set up reporting options, refer to the How to setup a Scheduled Scan section in this manual.
	**Delete** button – Use this button to delete the selected scheduled scan.
	**Properties** button – Use this button to review and edit the properties of the selected scan.
	**Enable/Disable** button – Use these buttons to toggle the status of the selected scan between enabled and disabled. This enables you to activate/suspend a scanning schedule without deleting the scheduled scan.
	**Scan now** button – Use this button to trigger the selected scheduled scan. This button overrides the scheduled scan date/time settings and executes an immediate scan.

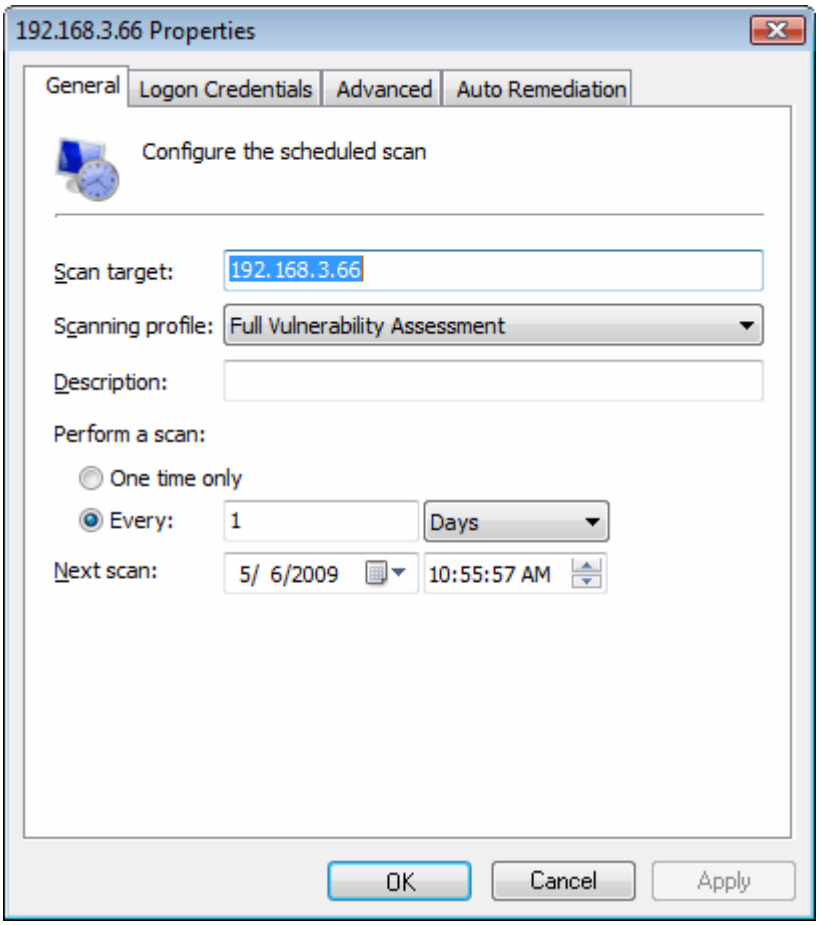
6.2.2 Scheduled scan properties

The scheduled scan properties page enables you to configure all the parameters of the scheduled scans.

To use the scheduled scan properties tab:

1. Go to **Configuration** tab ► **Scheduled Scans**

2. Select the scheduled scan and click the Scheduled Scan **Properties** button.



Screenshot 56 - Scheduled Scan properties - General tab

3. Edit the properties as required and click **OK** to finalize your configuration:

- **General** tab – Use this tab to make changes to scan target setting, type of scanning profile to use description and scan frequency.
- **Logon Credentials** tab – Use this tab to specify logon credentials to be used when scanning the specified target.
- **Advanced** tab – Use this tab to specify whether GFI LANguard should wait for offline computers to connect to the network. This enables GFI LANguard to postpone the scan on these machines and keep track of targets pending a scan e.g. laptops or other mobile devices, which are not connected to the network. As soon as these devices are connected back to the network, scanning will take place.
- **Auto Remediation** tab - Use this tab to configure the remediation options applicable to the scan being configured. This includes

downloading and installing missing patches and service packs and unauthorized software un-installation.

6.3 Computer profiles

When working in both large and smaller-sized networks, you will inevitably have to log in with different sets of credentials on different computers. 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 every target computer. The scanning engine can then refer to the logon credentials stored in these computer profiles when authenticating to target computers. This way you will not need to specify a default set of logon credentials prior to starting a network scan. It also makes it possible to scan target computers that require different logon credentials and authentication methods in the same (single) session. 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.

6.3.1 About SSH private key authentication

GFI LANguard connects to Linux-based target computers through SSH connections. In public key cryptography, two 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 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).

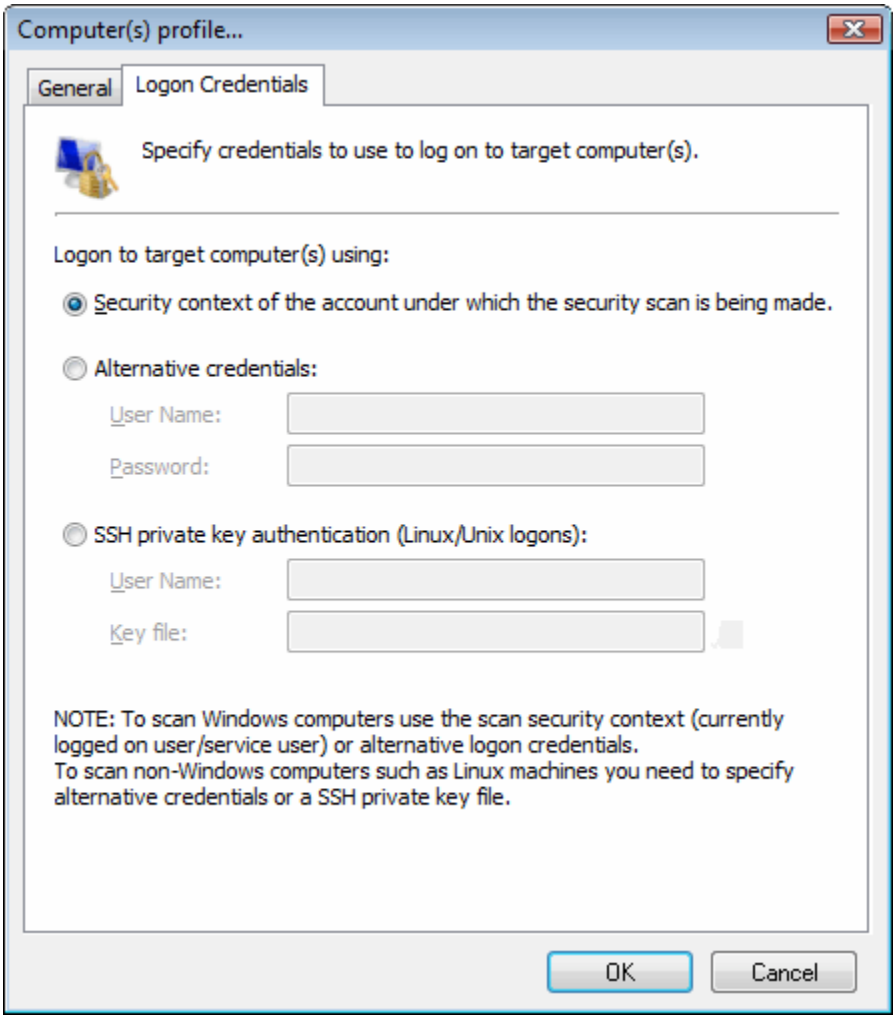
The SSH private key is the half of the key pair that the scanning engine will use to authenticate to a remote Linux based target. This means that the SSH private key is used instead of the conventional password string and hence must be stored on the computer which is running GFI LANguard

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

All new computer profiles are disabled by default. For information on how to enable newly created computer profiles, refer to the Enabling/Disabling Profiles section in this manual.

6.3.2 Creating a new computer profile

1. Select **Configuration ► Computer Profiles**
2. Under **Common Tasks**, click on **New computer(s) profile…**
3. In the **General** tab, specify the target computer name.

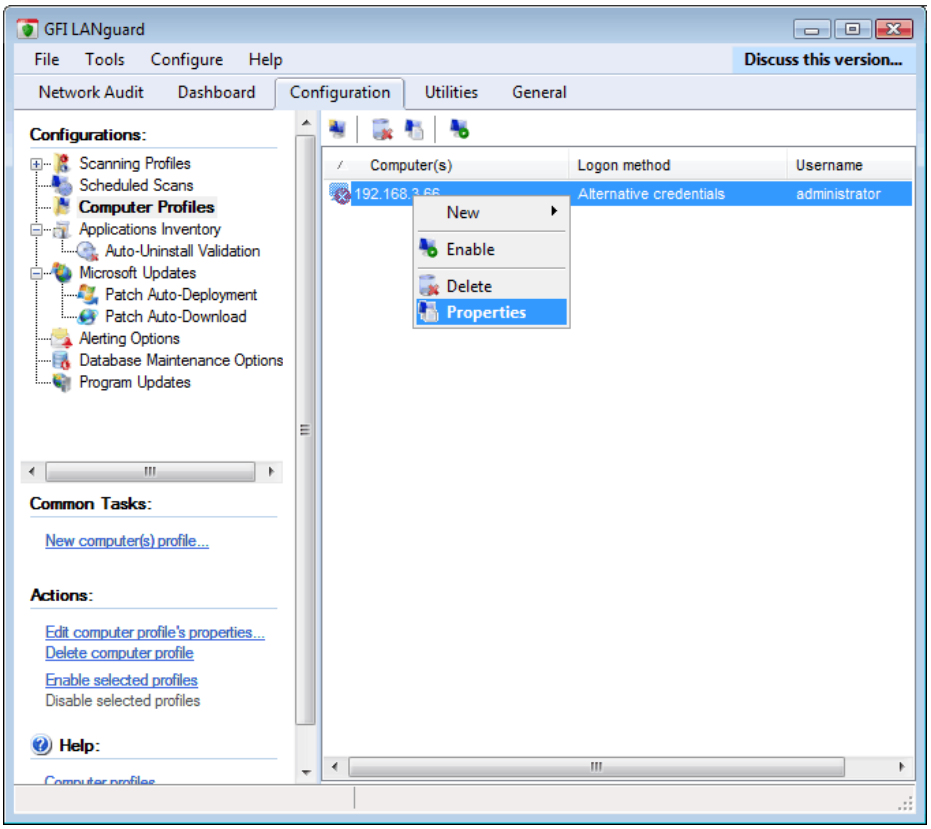


Screenshot 57 - Computer profile properties dialog

4. Click on the **Logon Credentials** tab and specify credentials accordingly.

5. Click **OK** to finalize configuration.

6.3.3 Configuring computer profile parameters



Screenshot 58 - List of existing computer profiles

To configure/change the parameters of an existing computer profile:

1. Click **Configuration ► Computer Profiles.**

2. Right-click the computer profile to configure and select **Properties**.

3. Configure the required parameters and click **OK** to finalize your configuration.

6.3.4 Enabling/Disabling Profiles

By default all, the newly created computer profiles are disabled. GFI LANguard will therefore not use these profiles during vulnerability scans unless you enable them.

To enable (or disable) profiles:

1. Click **Configuration ► Computer Profiles** and select one or more profiles to be enabled/disable.

2. Right-click on these profiles and select **enable** / **disable** accordingly.

6.4 Applications inventory

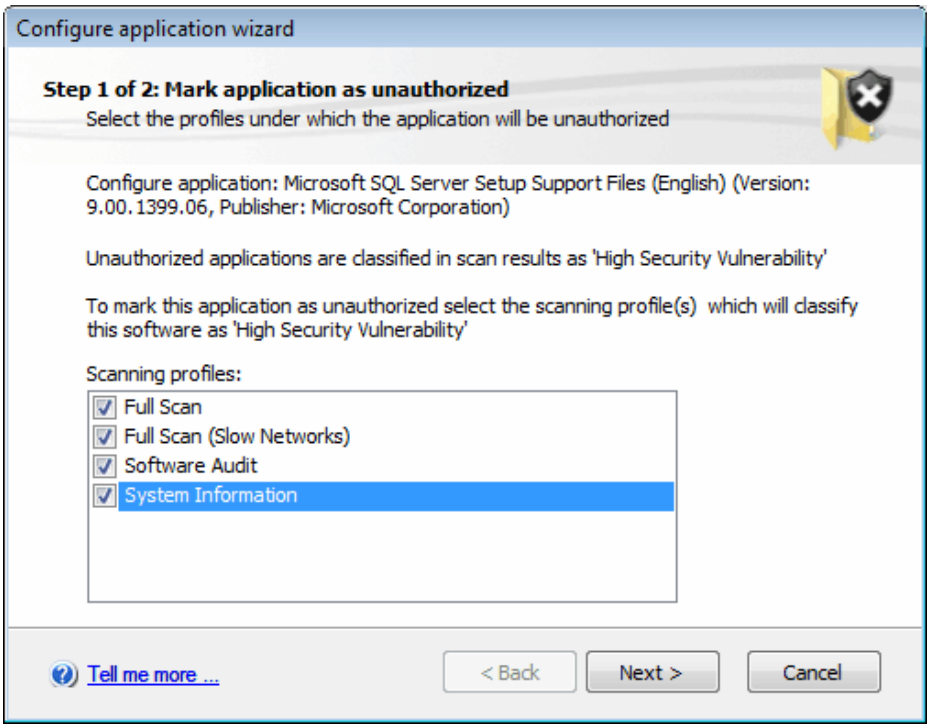
GFI LANguard applications inventory provides a list of all applications detected during past scans. This list is used to specify which applications are unauthorized. You can also manually add applications to the list. You can do this by specifying the entire name as well as a partial name specify generic names or part of an application name.

Automatically, GFI LANguard scans the list of applications and detects partial names.

To indicate an application as unauthorized:

1. Click on **Configuration ► Applications inventory** sub-node.

2. From the list of applications detected, locate the application to set to unauthorized by clicking in the **Unauthorized on** column entry.



Screenshot 59 - Unauthorized application – scanning profile

3. Select the scanning profile for which this application will be set as unauthorized and click **Next**.

4. GFI LANguard can associate partial names with entries already in the list. As a result, the system will prompt you to confirm whether to apply the same changes also to applications partially have the same name.

5. Click **Finish** to finalize settings.

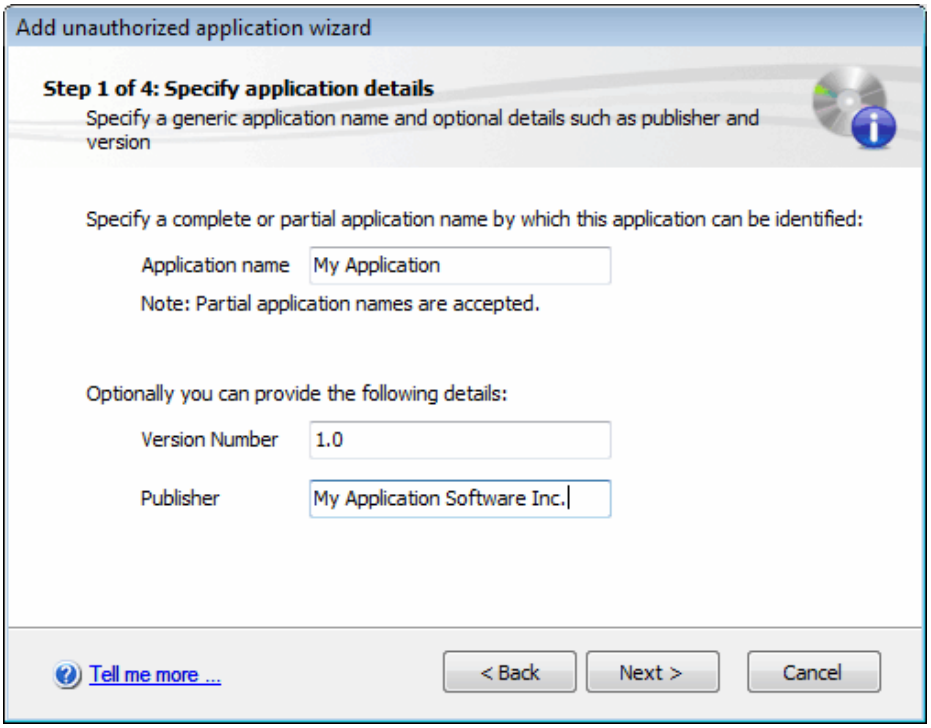
Adding a new unauthorized application

To manually add a new application without selecting an application from the applications inventory:

1. Click on **Configuration** tab ► **Applications inventory** sub-node.

2. Under **Common Tasks,** click on **Add a new application…**

3. The **Add unauthorized application wizard** is launched. In the welcome, screen click **Next** to proceed.



Screenshot 60 – Applications inventory wizard

4. Specify application name. Optionally you can also specify version number and publisher. Click **Next** to continue.

5. Select the scanning profiles on which you would like the unauthorized application (e.g. Full Scan) and click **Next** to continue.

6. Specify whether changes made will effect applications, which have partial/full name match. Click **Next** to continue.

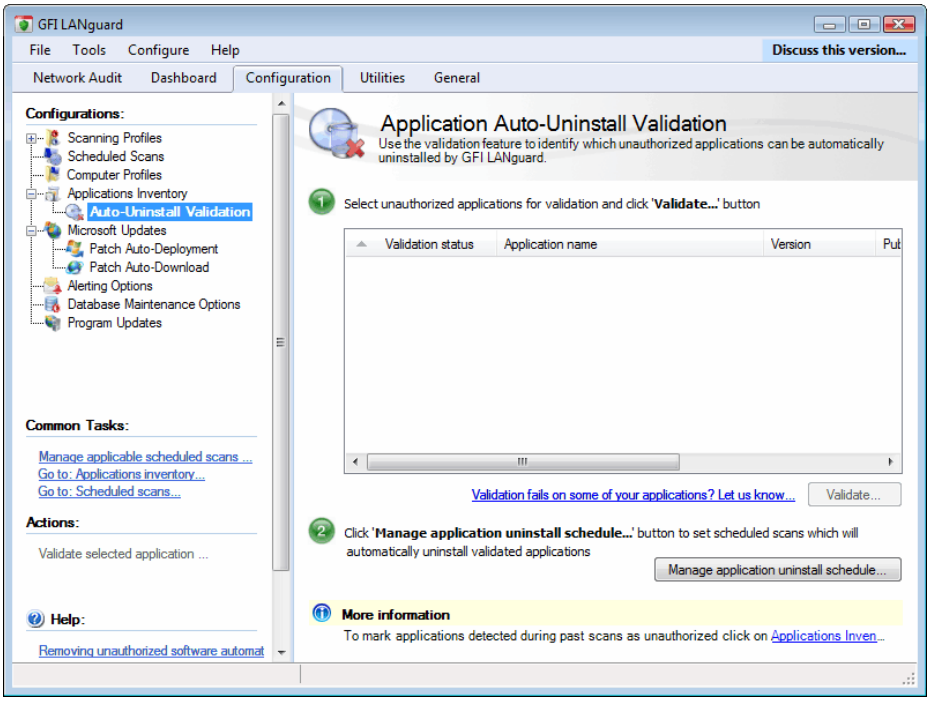
7. Review **Add application wizard** information and click **Finish** to finalize configuration.

6.5 Application auto-uninstall

Application auto-uninstall entails that applications marked as unauthorized for specific scanning profiles are first validated for a successful uninstall on a test machine. Subsequently a scheduled scan base on the scanning profile for which the application is marked as unauthorized is configured to auto-uninstall applications.

For more information on how to set a scheduled scan, refer to the Setting up a scheduled scan section in this manual.

6.5.1 Application auto-uninstall validation



Screenshot 61 – Application auto-uninstall validation

Application auto-uninstall validation enables you to validate the uninstallation procedure for the applications which are to be automatically uninstalled by GFI LANguard. This is a requirement prior to the actual uninstallation process and no applications are un-installed during scans unless verified.

NOTE: For more information on how to mark applications as unauthorized and therefore enable their uninstallation, refer to the Applications inventory section in this manual.

1. Click on **Configuration ► Applications Inventory ► Auto-Uninstall Validation**

2. In the right pane select an application to validate click **Validate…** button

3. In the **Application auto-uninstall validation** wizard click **Next** in the Welcome screen and select the computer on which to test the application auto-uninstall. Click **Next** to continue.

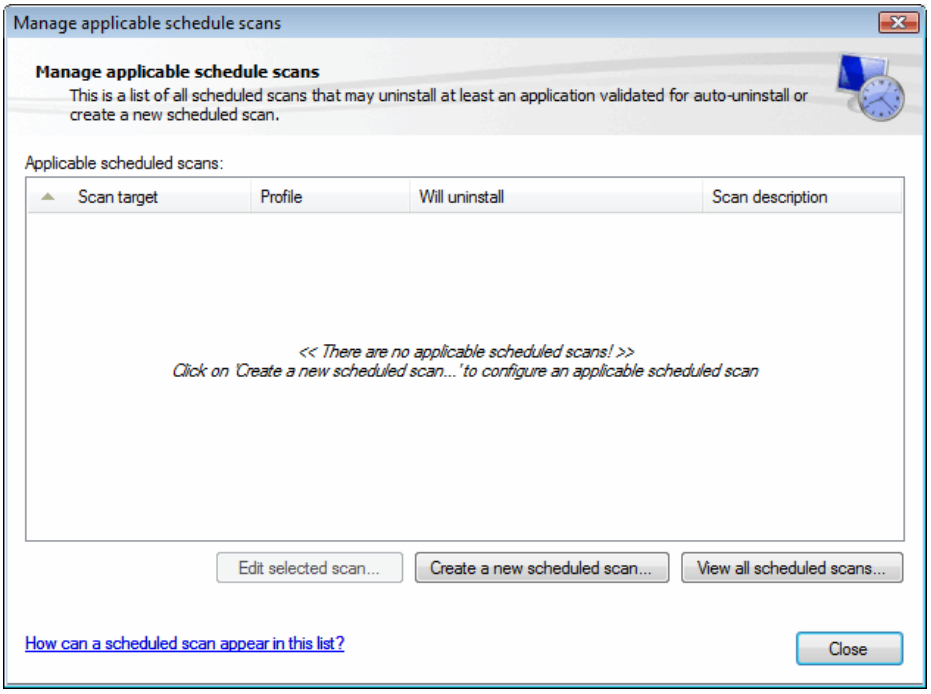
4. Provide the authentication details for the validation operation and click **Next** to continue.

5. Review the **Auto-uninstall validation wizard** information and click **Start** to validate application auto-uninstall.

6.5.2 Managing scheduled scans

The **Manage applicable scheduled scans** button enables you to review or edit scheduled scans, which will perform the validated applications auto install. To manage a scheduled scan:

1. From the Auto-Uninstall validation pane, click **Manage applicable scheduled scans…** button.



Screenshot 62 - Manage applicable schedule scans

2. From the Manage applicable schedule scans dialog, perform the following tasks:

a. Edit existing scheduled scans by selecting an existing scan and clicking **Edit selected Scan…** This will take you to the scan properties of the scheduled scan. For more information on how to edit an existing scheduled scan, refer to Scheduled Scans section in this manual.

b. Create a new scheduled scan by clicking on **Create a new scheduled scan…** button. This will display the new scheduled scan wizard where you can create a new scheduled scan, which will automatically uninstall applications. For more information on how to set up a new scheduled scan, refer to Setting up a scheduled scan section in this manual.

c. Review all scheduled scans by clicking **View all scheduled scans** button. This will display the Scheduled scan screen where you will be able to add new, edit or delete scheduled scans. For more information on how to edit an existing scheduled scan, refer to Scheduled Scans section in this manual.

6.6 Configuring Microsoft updates

6.6.1 Auto-deployment settings

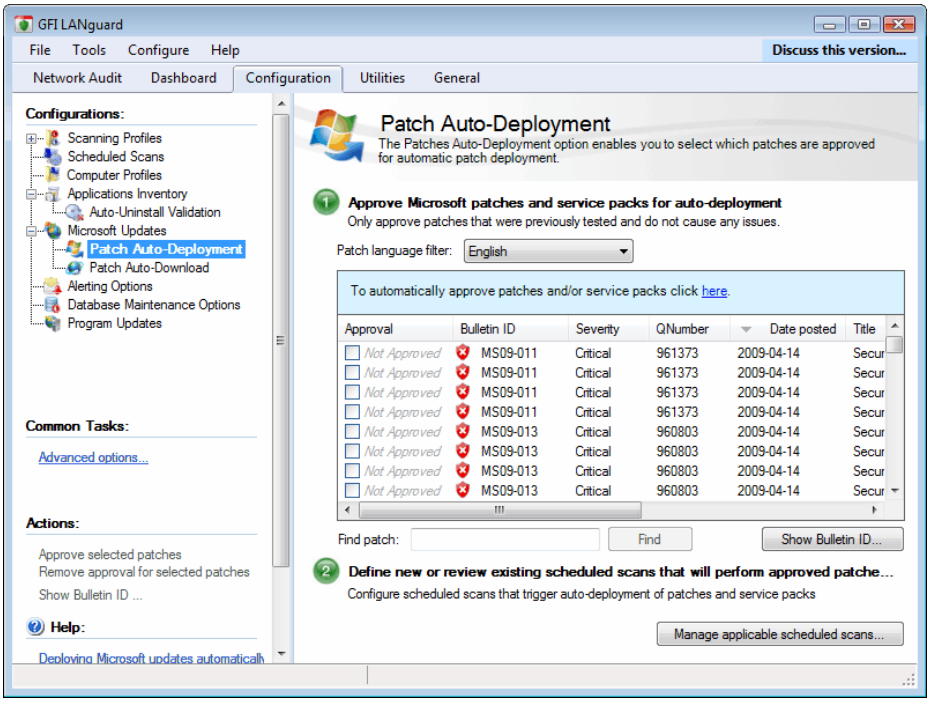
GFI LANguard ships with a patch auto-deployment feature, which allows you to automatically deploy missing Microsoft patches and service packs in all 38 languages supported by Microsoft products.

To configure patch auto-deployment:

1. Click on the **Configuration ► Microsoft updates ► Patch Auto-Deployment**

2. In the right pane, select the patches that you would like to auto-deploy.

NOTE: If patches and service packs are automatically approved for auto-deployment a message, advising you of such status is displayed. To manually approve patches/service packs click the link that enables you to change the status manually approve patches/service packs.

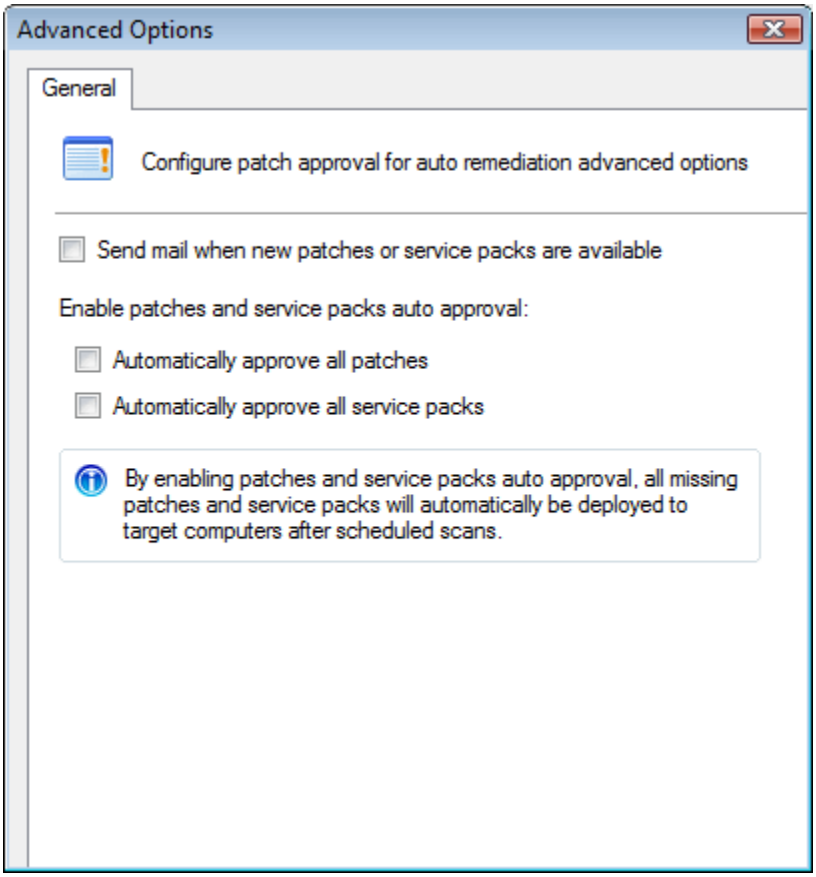


Screenshot 63 – Patch auto-deployment

NOTE: For more information on how to enable patch auto deployment during scheduled scans refer to the Creating a scheduled scan section in this manual.

6.6.2 Advanced Options

From the **Common Tasks ► Advanced options** configure the patch approval for auto-remediation advanced options.



Screenshot 64 - Patch Auto-Deployment Advanced Options

1. Click **Advanced Options…** to view advanced options dialog.

2. Select the notification and approval options by clicking the appropriate checkboxes and click **OK** to save changes.

6.6.3 Manage applicable scheduled scans

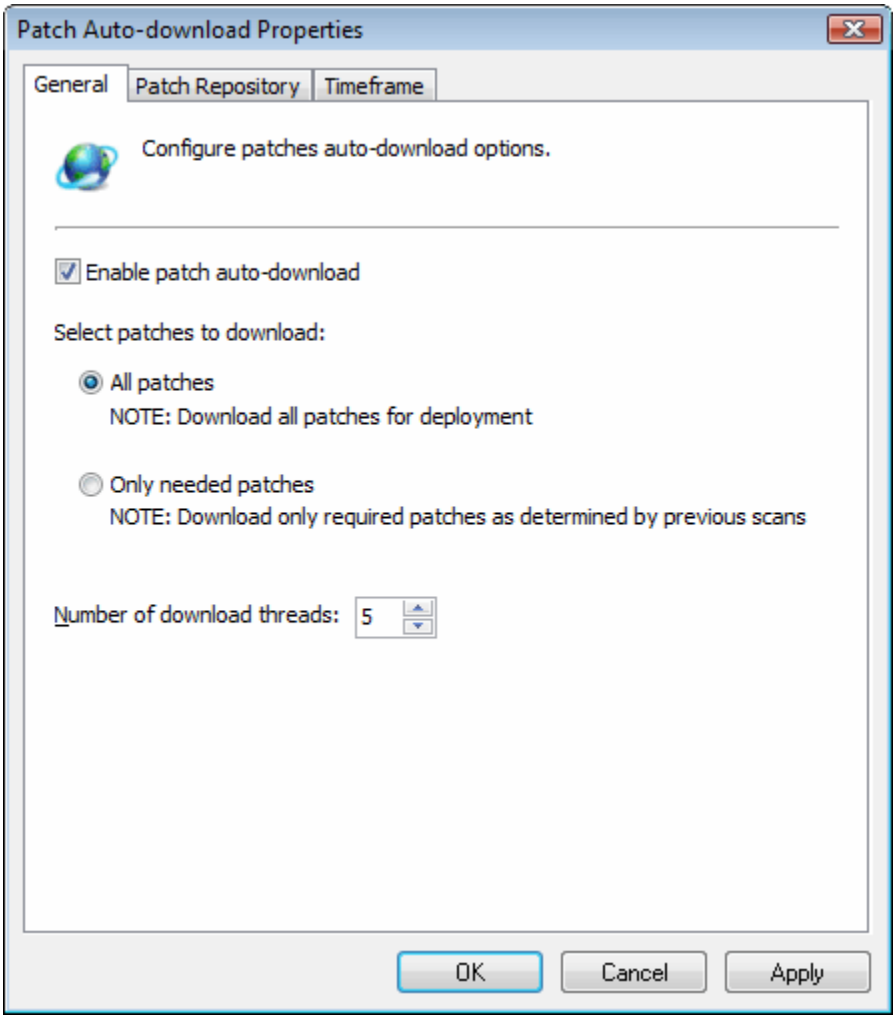
The **Manage applicable scheduled scan…** option enables you to configure scheduled scans that trigger auto-deployment of patches and service packs. For more information on how to use the **Manage applicable scheduled scan** feature refer to Managing scheduled scans section in this manual.

6.6.4 Auto-download settings

GFI LANguard ships with a patch auto-download feature, which enables you to automatically download missing Microsoft patches and service packs in all 38 languages supported by Microsoft products. In addition, you can also schedule patch auto-download by specifying the timeframe within which the download of patches is performed.

To configure patch auto-download:

1. Click on **Configuration ► Microsoft updates ► Patch Auto-Download ►** Click on link in the right pane.



Screenshot 65- Configuring Patch Auto-download Properties

2. In the **General** tab, select **All patches** or **Only needed patches**.

NOTE: Selecting **All patches** downloads all patches issued by Microsoft, regardless of whether these are required for deployment. The **Only needed patches** option downloads only the patches required for deployment.

3. To change the location where the downloaded patches are stored click the **Patch Repository** tab and specify the required details.

4. To change the timeframe during which patch downloads are performed click on the **Timeframe** tab and specify the required details.

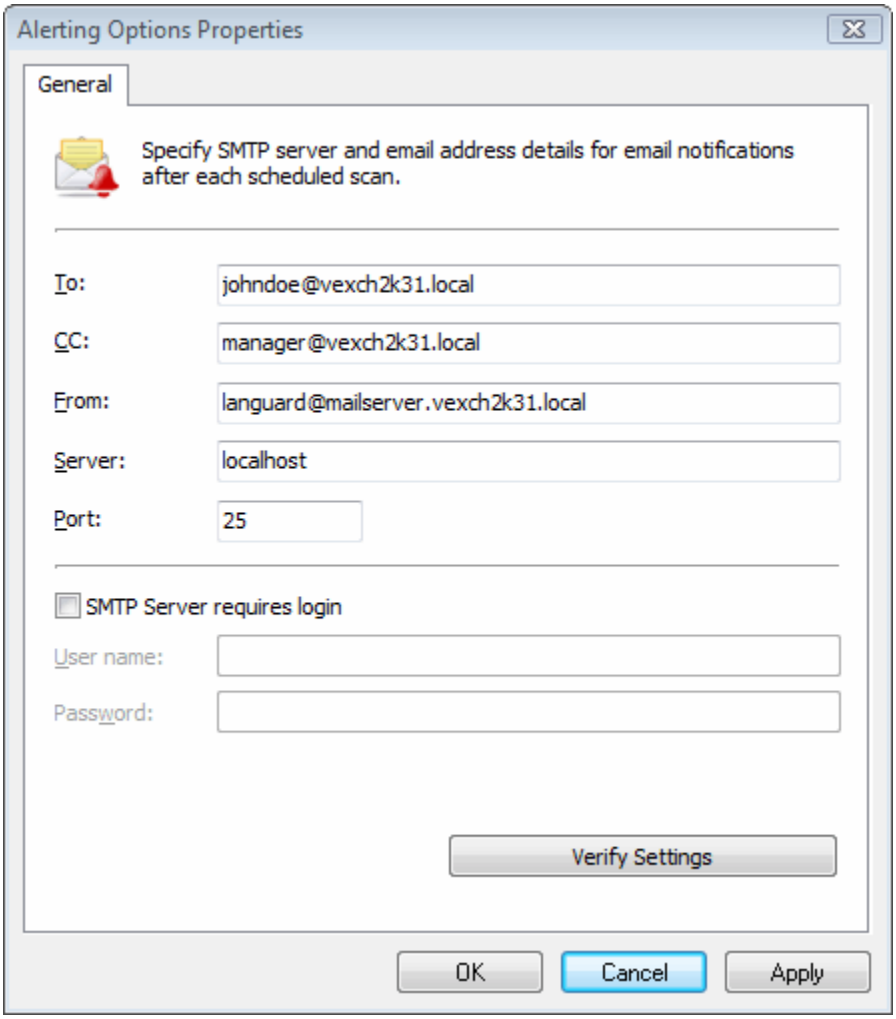
NOTE: GFI LANguard can use patch files downloaded by Microsoft WSUS when deploying missing patches and service packs on target computers. To enable use of Microsoft WSUS downloaded files select the **Use files downloaded by Microsoft WSUS when available** option and specify the path from where the Microsoft WSUS downloaded patches are retrieved.

5. Click **OK** to finalize your settings.

6.7 Configuring alerting options

To configure mail server settings or administrator email address:

1. Click **Configurations ► Alerting options**
2. Click the link in the right pane



Screenshot 66 - Configuring Alerting Options

3. Configure the parameters: To, CC, From, Server, Port, Username and Password as required.
4. Click on the **Verify Settings** button to verify email settings.
5. Click **OK** to finalize your settings.

6.8 Database maintenance options

GFI LANguard ships with a set of database maintenance options through which you can maintain your scan results database backend in good shape. For example, you can improve product performance and prevent your scan results database backend from getting excessively voluminous by automatically deleting scan results that are older than a specific number of months.

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; hence ensure the integrity of your scan results database.

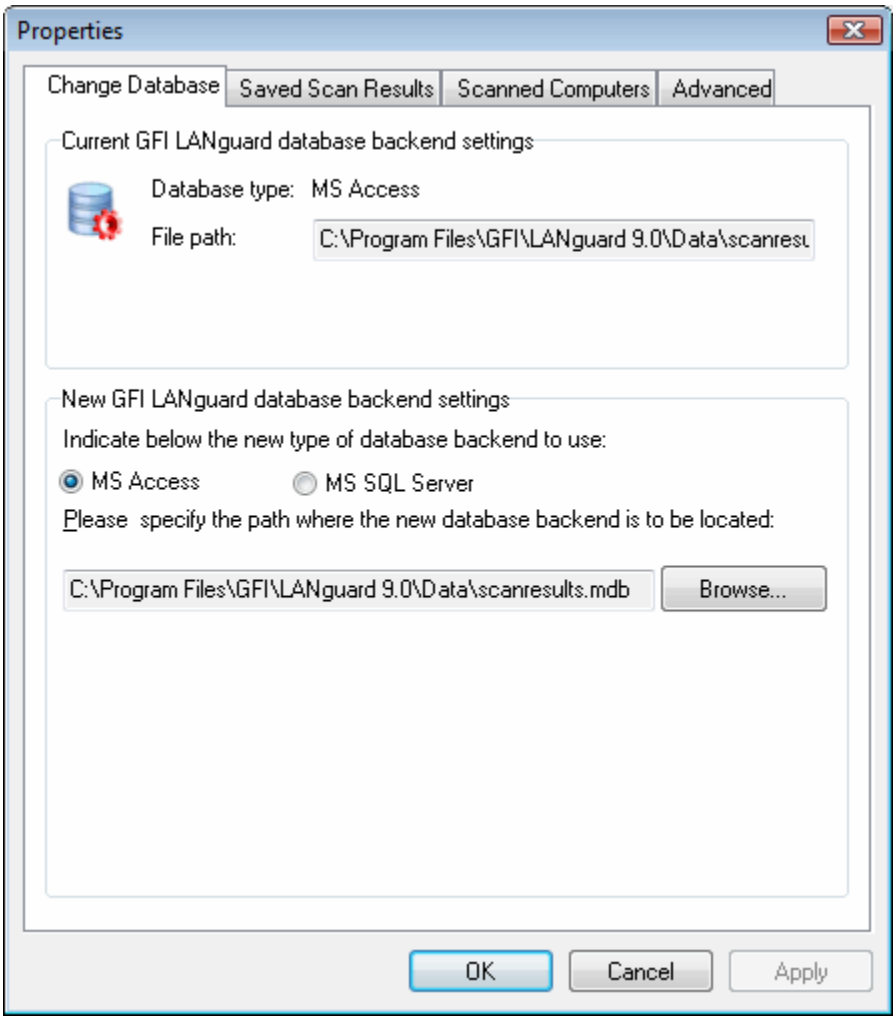
6.8.1 Selecting a database backend

GFI LANguard 9 supports both Microsoft Access and Microsoft SQL Server (2000 or higher) based database backend.

6.8.2 Storing scan results in a MS Access database backend

To store scan results in a Microsoft Access database:

1. Click on **Configuration ► Database Maintenance Options ► Database backend settings…**



Screenshot 67 - The database maintenance properties dialog

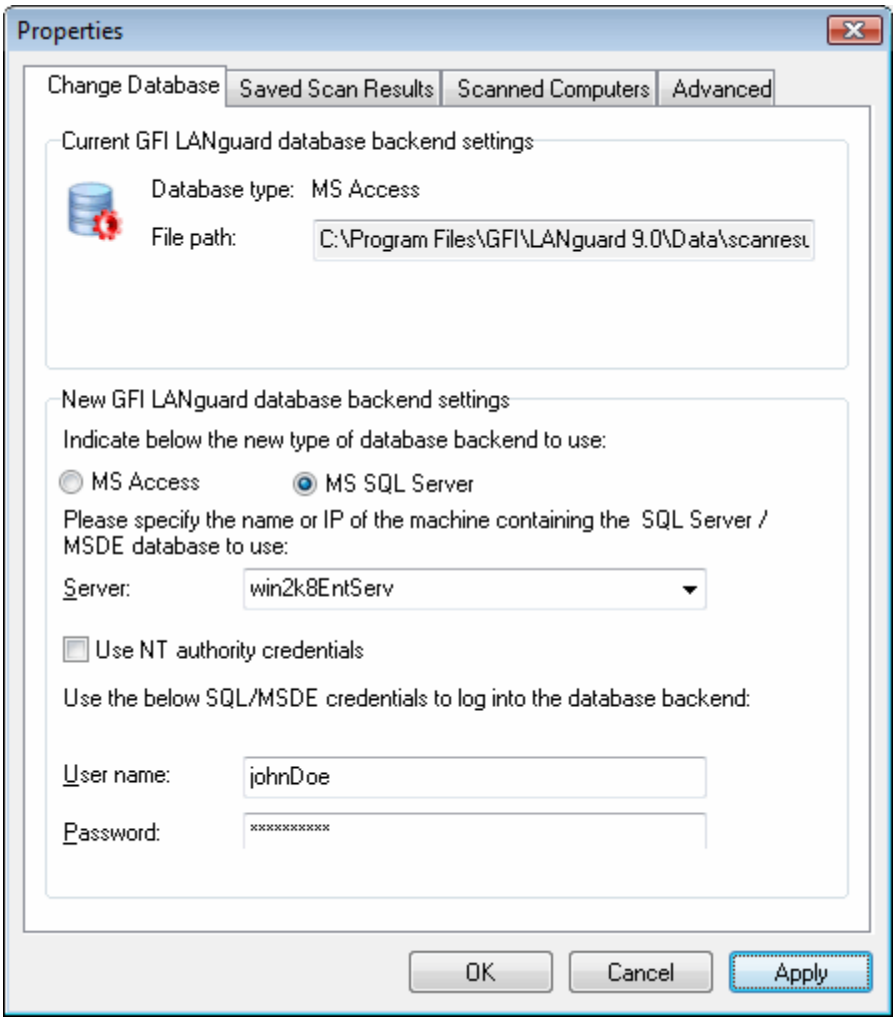
2. Select the **MS Access** option and specify the full path (including the file name) of your Microsoft Access database backend.
NOTE 1: If the specified database file does not exist, it will be created.
NOTE 2: if the specified database file already exists and belongs to a previous version of GFI LANguard, you will be asked whether you want to over-write the existing information.

3. Click **OK** to finalize your settings.

6.8.3 Storing scan results in an MS SQL Server database

To store scan results in a Microsoft SQL Server database:

1. Click on **Configuration ► Database Maintenance Options ► Database backend settings…**



Screenshot 68 - Microsoft SQL Server database backend options

2. Select the **MS SQL Server** option and choose the SQL Server that will be hosting the database from the provided list of servers discovered on your network.

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

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

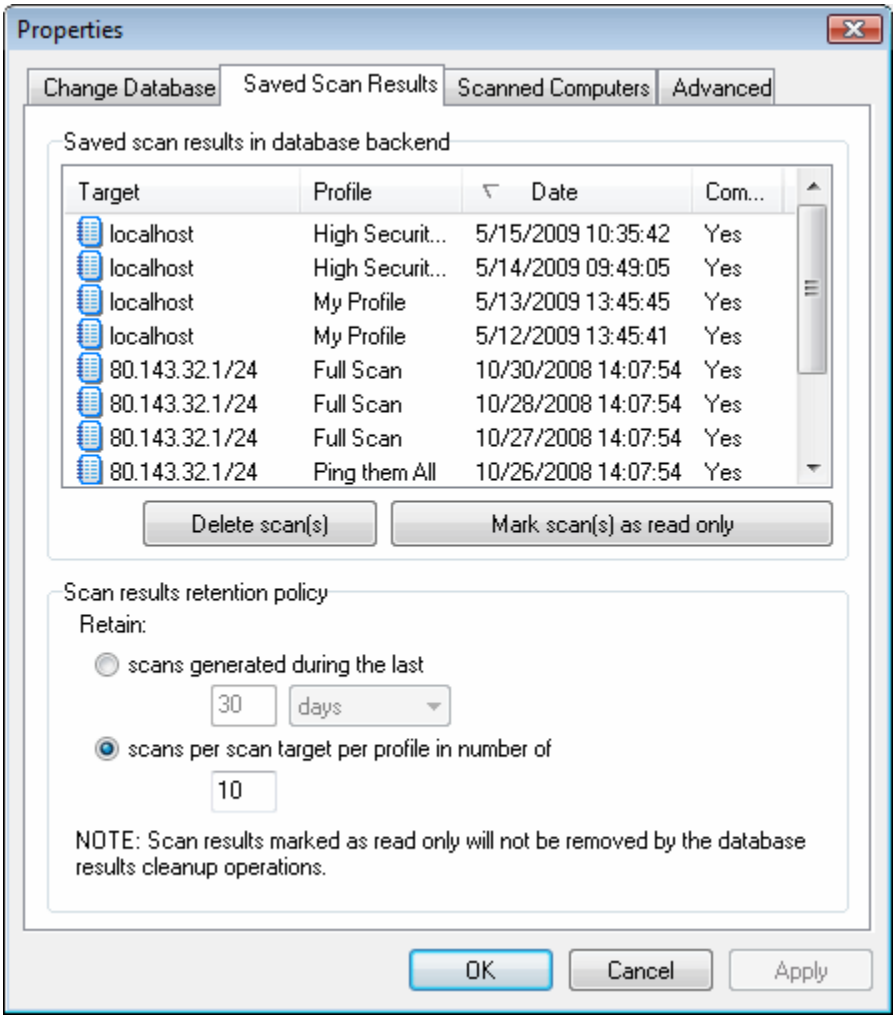
NOTE 1: If the specified server and credentials are correct, GFI LANguard will automatically log on to your SQL Server and create the necessary database tables. If the database tables already exist, it will re-use them.

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

6.8.4 Database maintenance: Managing saved scan results

Use the **Saved Scan Results** tab to maintain your database backend and delete saved scan results that 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 automatically deletes saved scan results that 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.



Screenshot 69 - Database maintenance properties: Managed saved scan results tab

To manage saved scan results:

1. Click on the **Configuration ► Manage saved scan results…**

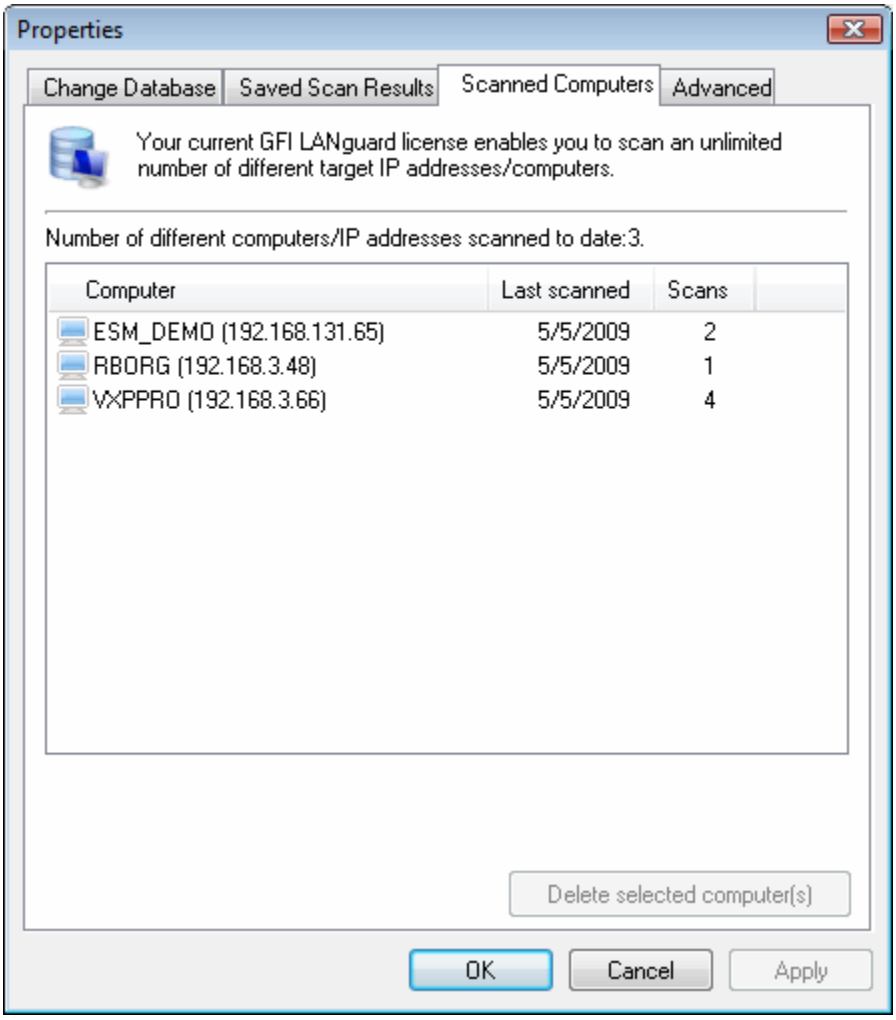
2. To manually delete saved scan results, select the particular result(s) and click on **Delete Scan(s)** button.

3. To let GFI LANguard manage database maintenance for you, select **Scans generated during the last** to automatically delete scan results which are older than a specific number of days/weeks or months or **Scans per scan target per profile in number of** to retain only a specific number of recent scan results.

6.8.5 Database maintenance: List of scanned computers

GFI LANguard incorporates a mechanism where a global list of scanned computers is maintained for licensing purposes. This enables GFI LANguard to enforce its licensing details, where a larger range of scanned computers than what is specified in the licensing information will not be scanned.

GFI LANguard enables systems administrators to delete previously scanned computers (nodes) so that node licenses taken by computers that are no longer present on the network, or which should no longer be scanned, can be reutilized.



Screenshot 70 - Database maintenance properties: Scanned Computers tab

To delete computers previously scanned:

1. Click on **Configuration ► Manage list of scanned computers…**

2. Select the computers to delete by holding the control key and clicking on the computers.

3. Click on **Delete selected computer(s)** button to delete scanned computer data.

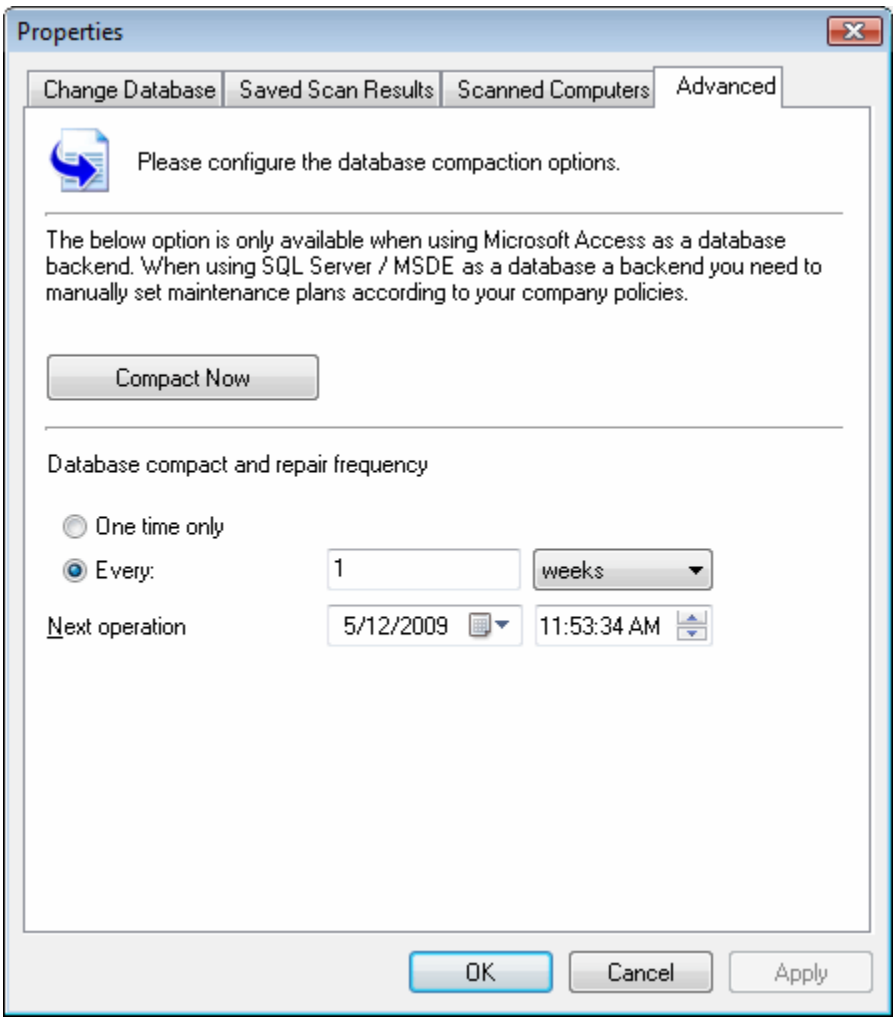
NOTE 1: Deleting computers from the database is a one-way operation that will also delete all computer related data from the database. **Once deleted, this data is no longer recoverable.**

NOTE 2: While this is a very efficient mechanism for freeing up licenses previously occupied by unused nodes, note that this affects the long-term security reporting capabilities of GFI LANguard Where long term security reporting must be ascertained, or in environments where security databases must be intact, it is highly advisable to not delete any data whatsoever. In such scenarios, it is advisable that more licenses are acquired to cater for network growth or expansion.

6.8.6 Database maintenance: Advanced options

To improve the performance of your Microsoft Access based database backend you must regularly repair and compact it; two functions that GFI LANguard allows you to automate.

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



Screenshot 71 - Database Maintenance properties: Advanced tab

To compact and repair a Microsoft Access based database backend:

1. Click on **Configuration► Database maintenance plan…**

2. To manually launch a repair and compact process on a Microsoft Access database backend, click on the **Compact Now** button.

3. To automate the repair and compact process on an Microsoft Access database backend select **One time only** to schedule a onetime Microsoft Access database repair and compact or **Every** to execute a repair and compact process on a regular schedule. Specify the date, time and frequency in days/weeks or months at which the

compact and repair operations will be executed on your database backend.

6.9 Importing and Exporting Settings

GFI LANguard allows configurations, import and export, through **Import and Export Configurations…** in the **File** menu. Configurations that can be Imported/Exported include:

- Scanning Profiles
- Vulnerability Assessment
- Ports (TCP/UDP)
- Results Filtering Reports
- Auto-Remediate Settings (Auto-Uninstall and Patch settings)
- Options (Database Backend, Alerting, Schedule scan and Internal Settings)

6.9.1 Exporting Configurations

To export the configurations:

1. From the main menu, click **File ► Import and Export Configurations…**

2. Select **Export the desired configuration to a file** and click **Next**.

3. Specify the path were to save the exported configuration, and click **Next**.

4. Wait for the configuration tree to load and select the configurations to export. Click **Next** to start export.

5. A notify dialog will confirm that exporting is completed.

6. Click **OK** to finish.

6.9.2 Importing Configurations

To import saved configurations:

1. From the main menu, click on **File ► Import and Export Configurations…**

2. Select **Import the desired configuration from a file** and click **Next**.

3. Specify the path from where to load configuration, and click **Next**.

4. Wait for the configuration tree to load and select the configurations to import. Click **Next** to start import.

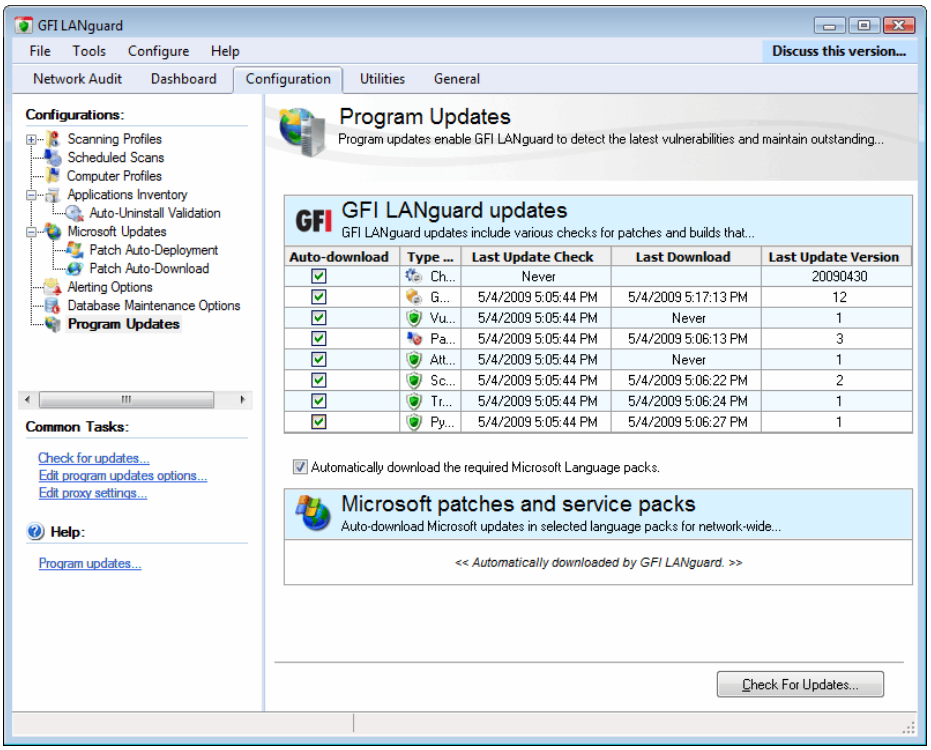
5. Confirm the override dialog box; by clicking, **Yes** or **No** as required.

6. A notify dialog will confirm that exporting is completed

7. Click **OK** to finish.

NOTE: To import configurations from an existing installation of GFI LANguard, select **Importing Configurations from another instance**.

6.10 Program updates



Screenshot 72 – Program updates

Out of the box, GFI LANguard supports multilingual patch management for all Unicode compliant languages. 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 the '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 **Program Update** tool (in the Configuration tab), 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.

The **Automatically download the required Microsoft Language packs** option enables you to automatically download language packs for a wide range of languages which includes (but is not limited to) English, German, French, Italian, Spanish, Arabic, Danish, Czech, Finnish, Hebrew, Hungarian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Portuguese/Brazilian, Russian, Swedish, Chinese, Chinese (Taiwan), Greek, and Turkish.

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

NOTE: Manual updates are required only if GFI LANguard is not configured to automatically download the required Microsoft Language packs.

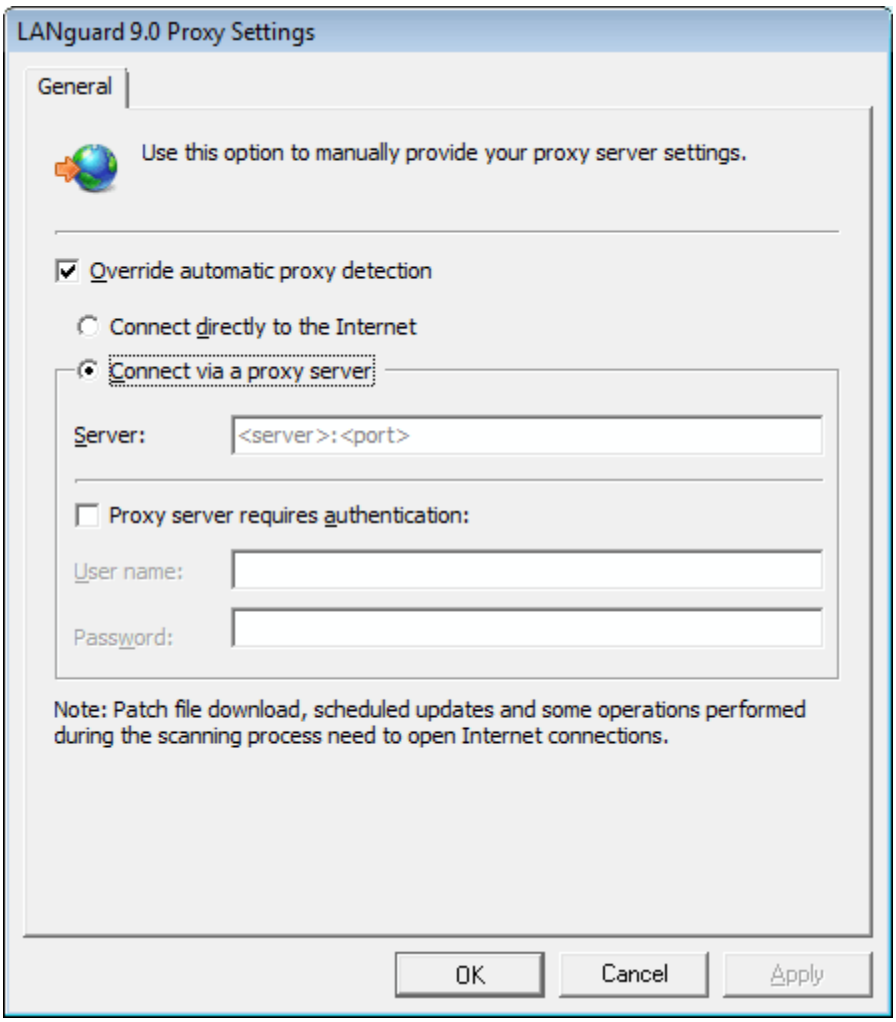
6.10.1 GFI LANguard updates

The program updates tool, will allow the user to download and customize the GFI LANguard updates. The user can configure GFI LANguard, to auto download updates released by GFI to improve functionalities in GFI LANguard. These updates include also checking GFI web site for a newer build. Updates can be disabled by removing the mark from the checkbox in the **Auto-download** column.

6.10.2 Configure GFI LANguard Proxy settings

To manually configure proxy server settings for internet updates:

1. Click on **Edit proxy settings…** under common tasks



Screenshot 73 – Configuring proxy server settings

3. Select **Override automatic proxy detection**, and, chose one of the following options:

- **Connect directly to the Internet** – Select this option when a direct internet connection is available.

- **Connect via a proxy server** – Select this option when internet access is through a proxy server.
  - Update the **Server** name and port number using this format <server>:<port>
  - If applicable, select **Proxy server requires authentication** and update the **User name** and **Password** respectively.

6.10.3 Enable/Disable GFI LANguard auto updates on startup

GFI LANguard can check for the availability of software updates at every program startup. To disable/enable this feature

1. Click on the **Edit program updates options…**

2. In the builds updates section, select/unselect the **Check for updates at application startup** option accordingly.

3. Click **OK** to finalize your configuration.

6.10.4 Enable GFI scheduled updates

GFI LANguard scheduled updates are enabled by default. To disable/enable this feature

1. Click on the **Edit program updates options…**

2. Optionally: In the builds updates section, unselect the **Check for updates at application startup** option.

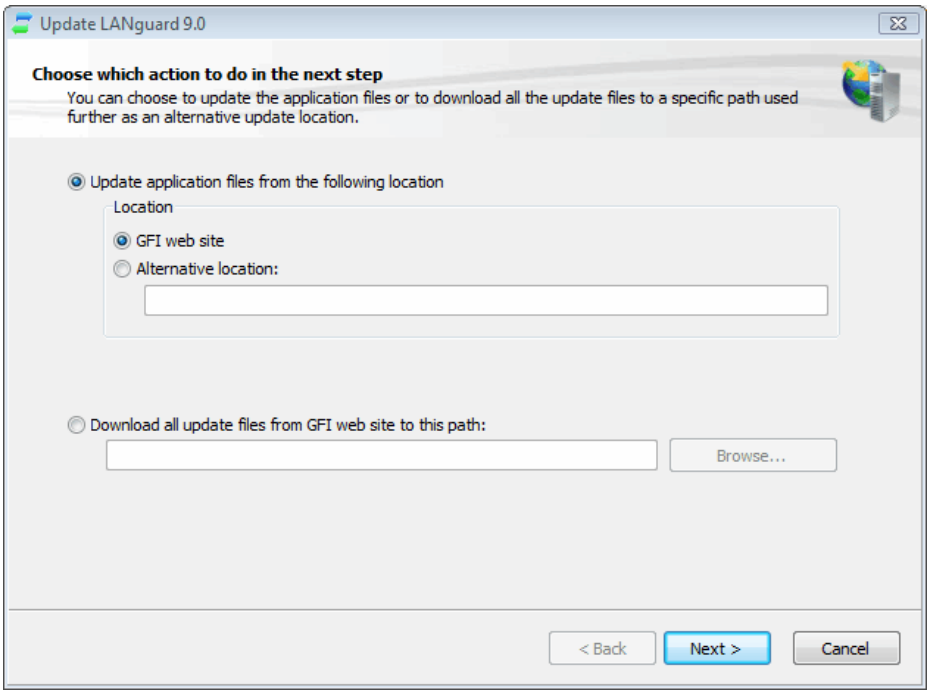
3. Click **Enable scheduled updates**.

4. Specify auto-updates frequency

6.10.5 Starting program updates manually

To manually start GFI LANguard program updates:

1. Click on **Check for Updates…**

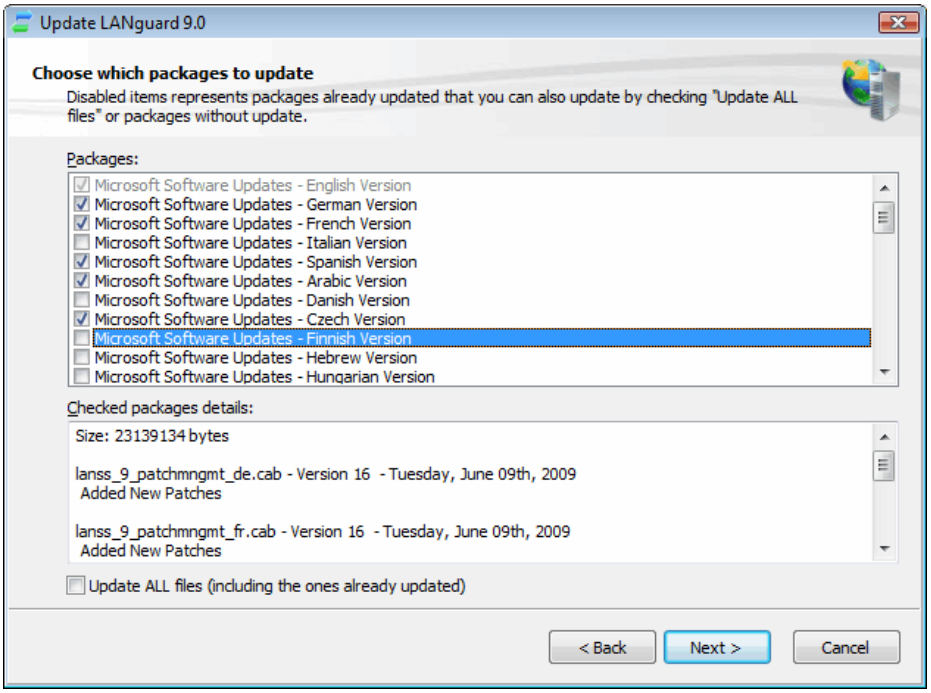


Screenshot 74 - The Check for Updates wizard: Stage 1

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

3. Optionally: Change the default download path, select **Download all update files… to this path** option will allow the user to provide an alternate download path to store all GFI LANguard updates.

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



Screenshot 75 - The Check for updates Wizard: Stage 2

5. Select the updates to be downloaded and click **Next**.

6. Click **Start** to initiate the update process.

6.10.6 Product Updates Activity

GFI LANguard 9.0 maintains a comprehensive log of all updates activity. This information can be reviewed by open **Dashboard** tab ► **Scheduled Operations** ► **Product Updates Activity** node. This enables you to keep track of which updates were completed successfully or not.

7. Scanning Profiles

7.1 Introduction

GFI LANguard enables you to scan your IT infrastructure for particular vulnerabilities using pre-configured sets of checks known as 'scanning profiles'. Scanning profiles enable you to scan your network targets and enumerate only specific information. For example, you may want to use a scanning profile that is set to be used when scanning the computers in your DMZ as opposed to your internal network.

In practice, scanning profiles allow you to focus your vulnerability scanning efforts on to a specific area of your IT infrastructure such as identifying only missing security updates. The benefit is that this way you have less scan results data to analyze; tightening up the scope of your investigation and quickly locate the information that you require more easily.

With 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.

7.2 Scanning profile description

Out of the box, GFI LANguard includes an extensive list of scanning profiles as described below.

7.2.1 Complete/Combination scans

Complete/Combination scanning profiles	
Full Vulnerability Assessment	Use this scanning profile to enumerate particular network vulnerabilities such as open TCP/UDP ports commonly exploited by Trojans as well as missing patches and service packs. The list of vulnerabilities enumerated by this profile can be customized through the Vulnerabilities tab. Installed USB devices and applications are not enumerated by this profile. This profile will scan for all vulnerabilities. This includes vulnerabilities which have an associated Microsoft patch to them and which are considered missing patches.
Full Scan (Active)	Use this scanning profile to retrieve system information as well as scan your network for all supported vulnerabilities including open TCP/UDP ports, missing patches and service packs, USB devices connected and more. The vulnerability check timeouts in this profile are specifically preconfigured to suite the network traffic and transmission delays usually associated with LAN environments.

Full Scan (Slow Networks)	Use this scanning profile to retrieve system information as well as scan your network for all supported vulnerabilities including open TCP/UDP ports, missing patches and service packs, USB devices connected and more… The vulnerability check timeouts in this profile are specifically preconfigured to suite the network traffic and transmission delays usually associated with WAN environments.

7.2.2 Vulnerability Assessment

Vulnerability assessment scanning profiles	
Top SANS 20 Vulnerabilities	Use this scanning profile to enumerate all vulnerabilities reported in the SANS top 20 list.
High Security Vulnerabilities	Use this scanning profile to enumerate open TCP/UDP ports and high security vulnerabilities. The list of TCP/UDP ports and high security vulnerabilities that will be enumerated by this profile can be customized through the TCP/UDP Ports tabs and the Vulnerabilities tab respectively.
Last Year's Vulnerabilities	Use this scanning profile to enumerate network vulnerabilities that emerged during the last 12 months.
Only Web	Use this scanning profile to identify web-server specific vulnerabilities. This includes scanning and enumerating open TCP ports that are most commonly used by web-servers such as port 80. Only TCP ports commonly used by web-servers are scanned by this profile. Network auditing operations as well as enumeration of vulnerabilities and missing patches are not performed using this profile.
Missing Patches	Use this scanning profile to enumerate missing Microsoft patches. The list of missing patches that will be enumerated by this profile can be customized through the Patches tab.
Critical Patches	Use this scanning profile to enumerate only missing Microsoft patches that are tagged as critical. The list of critical patches that will be enumerated by this profile can be customized through the Patches tab.
Last Month's Patches	Use this scanning profile to enumerate only missing Microsoft patches that were released last month. The list of missing patches that will be enumerated by this profile can be customized through the Patches tab.
Only Service Packs	Use this scanning profile to enumerate missing Microsoft service packs. The list of service packs that will be enumerated by this profile can be customized through the Patches tab.

Protection from Portable Storage	Use this scanning profile to check if GFI EndPointSecurity is installed or if GFI EndPointSecurity's security agent is deployed on scan targets. You can customize this profile to enumerate only unauthorized/blacklisted software or vice-versa. For more information on GFI EndPointSecurity refer to the user manual available at: http://www.gfi.com/endpointsecurity/esec4manual.pdf

7.2.3 Network & Software Audit

Network and Software Audit scanning profiles	
Trojan Ports	Use this scanning profile to enumerate open TCP/UDP ports that are commonly exploited by known Trojans. The list of TCP/UDP ports to be scanned can be customized through the TCP Ports and UDP Ports tabs respectively. Only the TCP/UDP ports commonly exploited by known Trojans are scanned by this profile. Network auditing operations as well as enumeration of other open TCP/UDP ports and missing patches are not performed by this profile.
Port Scanner	Use this scanning profile to enumerate open TCP/UDP ports including those most commonly exploited by Trojans. The list of ports that will be enumerated by this profile can be customized through the TCP/UDP ports tab.
Software Audit	Use this scanning profile to enumerate all software applications installed on scan targets. This includes security software such as anti-virus and anti-spyware.
Full TCP & UDP Scan	Use this scanning profile to audit your network and enumerate all open TCP and UDP ports.
Only SNMP	Use this scanning profile to perform network discovery and retrieve information regarding hardware devices (routers, switches, printers, etc.) that have SNMP enabled. This enables you to monitor network-attached devices for conditions that require administrative attention.
Ping Them All	Use this scanning profile to audit your network and enumerate all computers that are currently connected and running.
Share Finder	Use this scanning profile to audit your network and enumerate all open shares either hidden or visible. No vulnerability checks are performed by this profile.
Uptimes	Use this scanning profile to audit your network and identify how long each computer has been running since the last reboot.
Disks Space Usage	Use this scanning profile to audit your network and retrieve system information on available storage space.
System Information	Use this scanning profile to retrieve system information such as operating system details, wireless/virtual/physical network devices connected, USB devices connected, installed applications and more.

Hardware Audit	Use this scanning profile to audit your network and enumerate all hardware devices currently connected to your network computers.

7.2.4 Which scanning profile shall I use?

Select the scanning profile based on the:

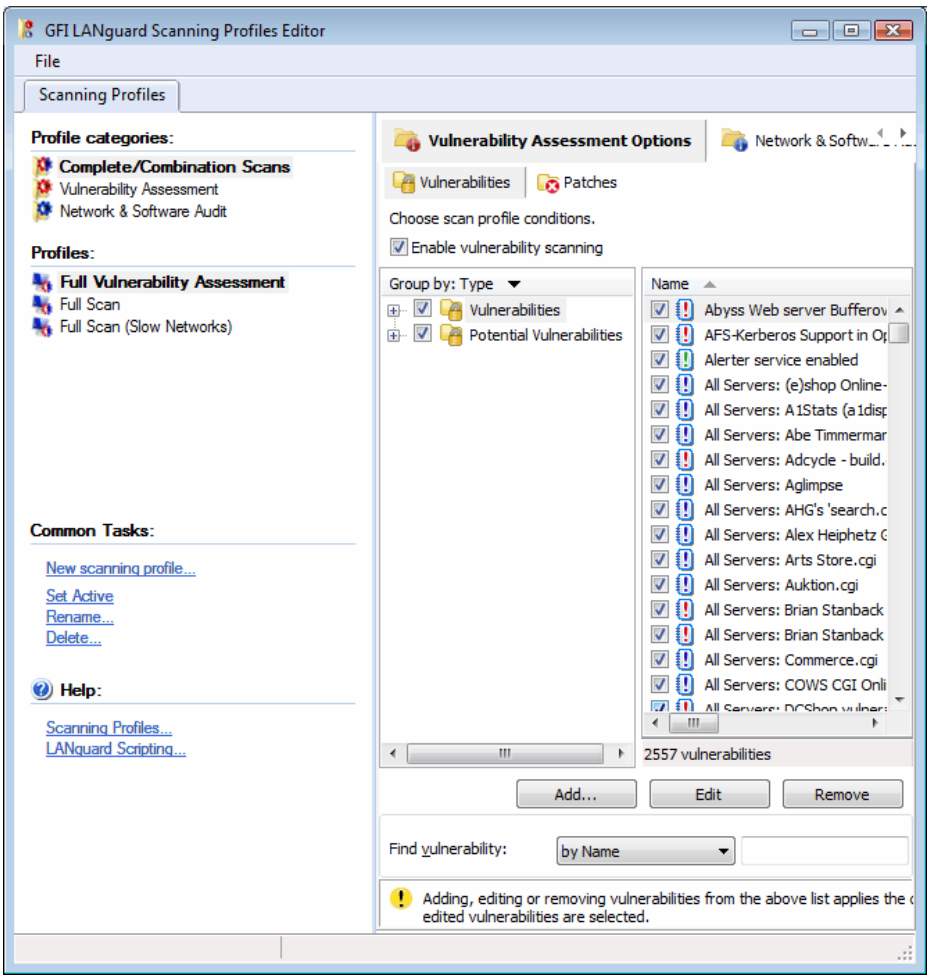
1. The scope of your vulnerability analysis i.e. what you want to achieve out of your vulnerability scan. Based on these factors, you can determine the type of vulnerability checks to be performed and the information that you want to retrieve from your scan targets.

2. Time you have at your disposal for target vulnerability scanning. The more vulnerability checks you run the longer it will take the scan process to complete.

7.3 Creating a new scanning profile

To create a new scanning profile:

1. Click **Configuration** tab ► **Scanning Profiles** and go to **Scanning profiles management.**



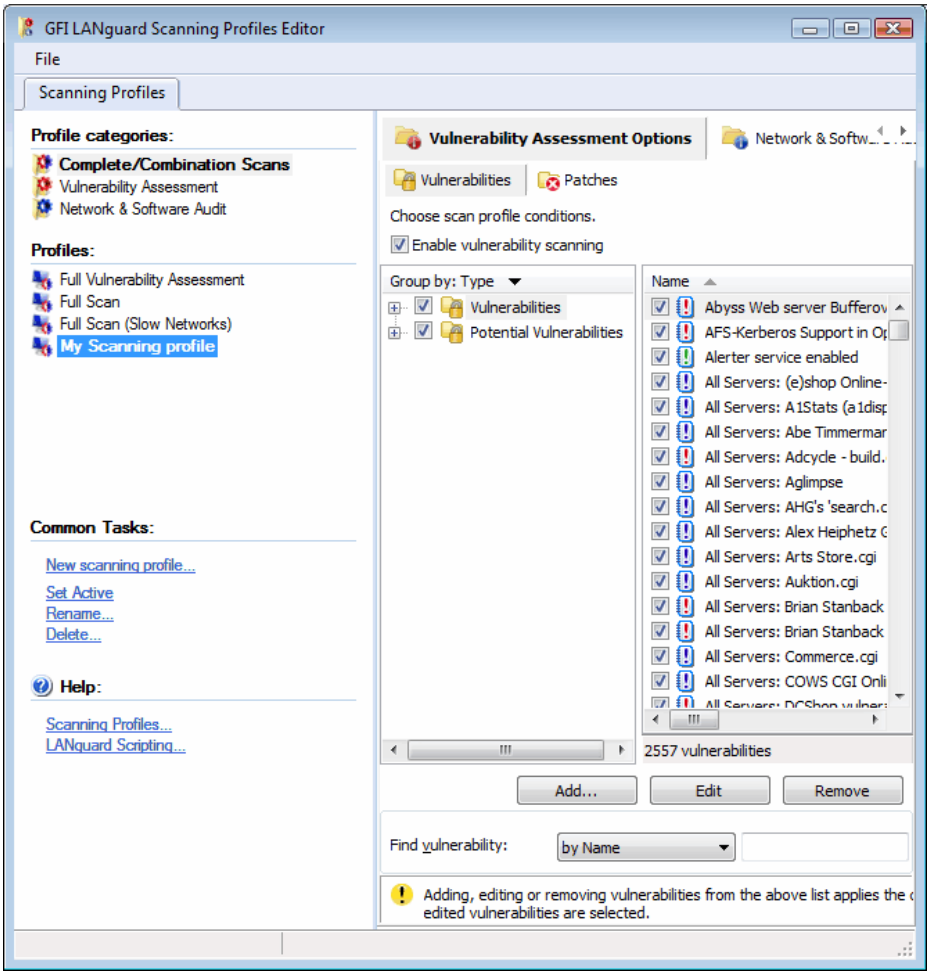
Screenshot 76 - The Scanning Profile Editor

2. In the **Scanning Profiles Editor** click **New scanning profile…**

3. Specify the name of the new profile and select **Copy all settings from an existing profile** to clone settings from an existing profile.

4. Click **OK** to save settings. The new scanning profile is added under **Profiles** in the left pane.

7.4 Configuring vulnerabilities



Screenshot 77 - Scanning Profiles properties: Vulnerabilities tab options

The scanning profiles that ship with GFI LANguard 9 are already pre-configured to run a number of vulnerability checks on selected target. You can however disable vulnerability scanning as well as customize the list of vulnerability checks executed during a scan.

7.4.1 Enabling/disabling vulnerability scanning

To enable vulnerability scanning:

1. From the **Vulnerability Assessment Options** tab, click **Vulnerabilities** sub-tab.

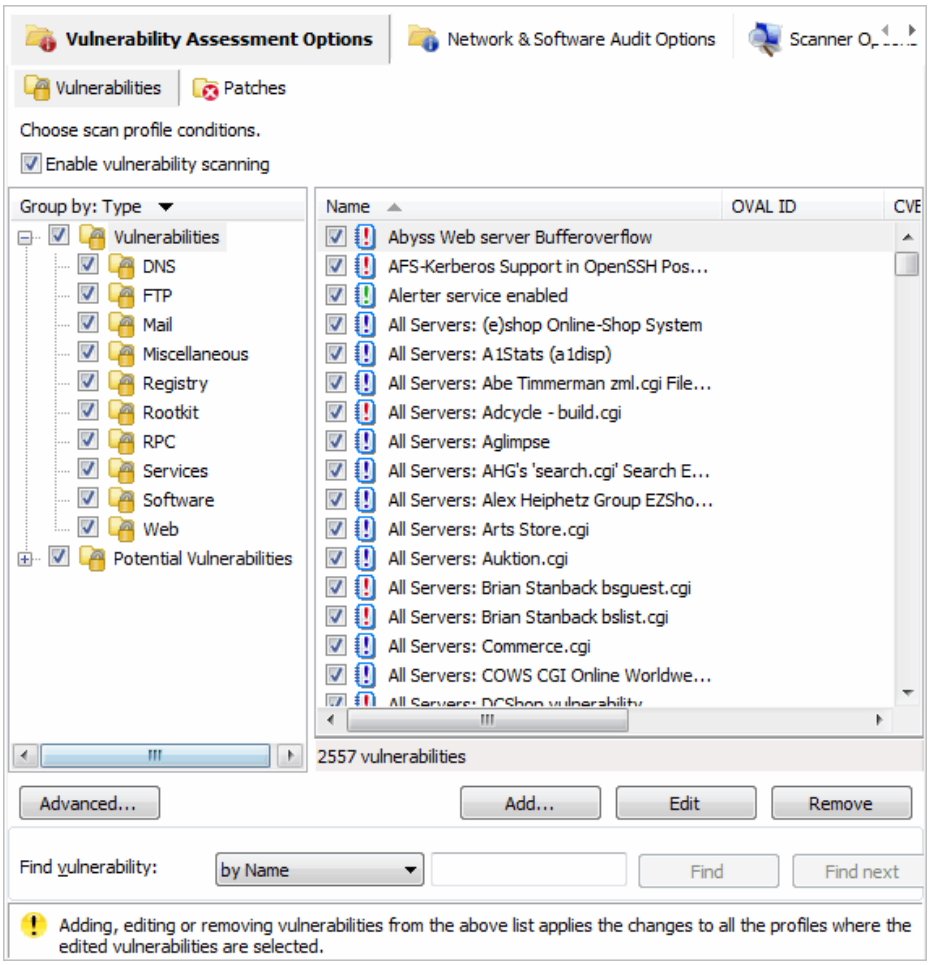
2. Select the scanning profile to customize from the left pane under **Profiles**.

3. In the right pane, select **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.

7.4.2 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. From the **Vulnerability Assessment Options** tab, select the scanning profile to customize from the left pane under **Profiles**.

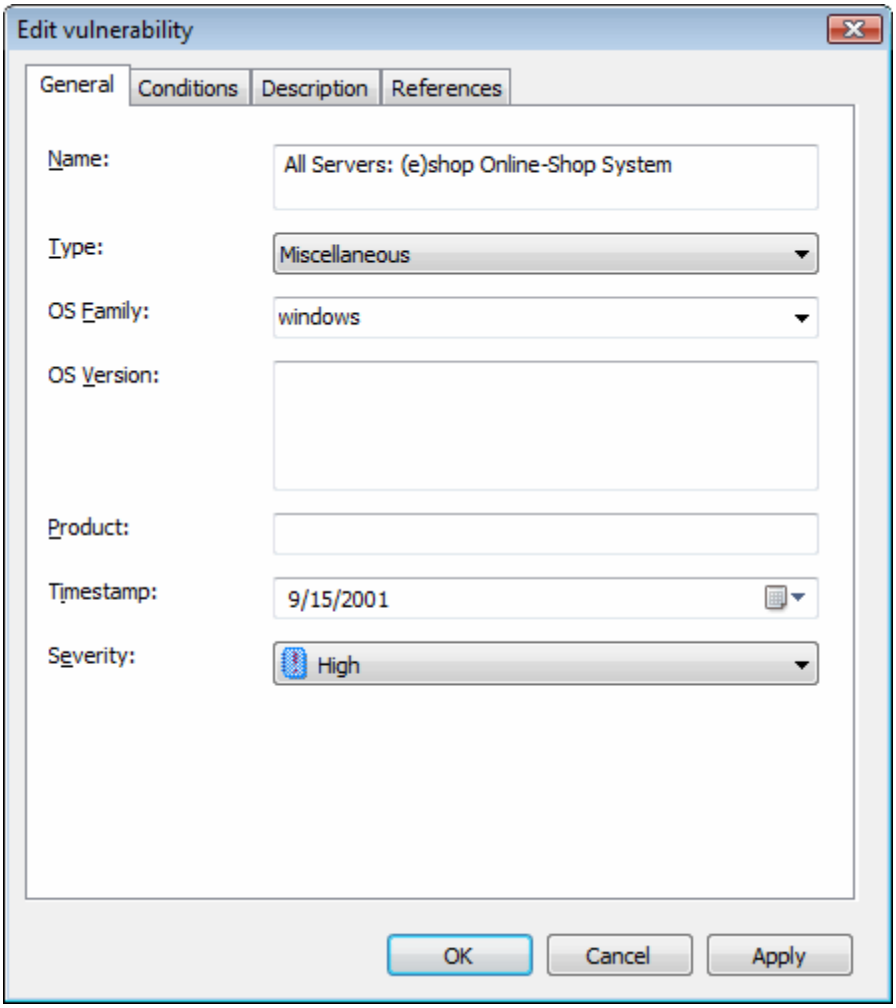


Screenshot 78 - Select the vulnerability checks to be run by this scanning profile

2. In the right pane, select the vulnerability checks that you wish to execute through this scanning profile.

7.4.3 Customizing the properties of vulnerability checks

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



Screenshot 79 - Vulnerability properties dialog: General tab

To change the properties of a vulnerability check:

1. Right click on the vulnerability to customize and select **Properties**.

2. Customize the selected vulnerability check through the following tabs:

• **General** - Use this tab to customize the general details of a vulnerability check including vulnerability check name, vulnerability type, OS family, OS version, Product, Timestamp and Severity.

• **Conditions**: Use this tab to configure the operational parameters of this vulnerability check. These parameters will define whether a vulnerability check is successful or not. For information on how to configure vulnerability, check conditions refer to the Vulnerability check conditions setup section in this manual.

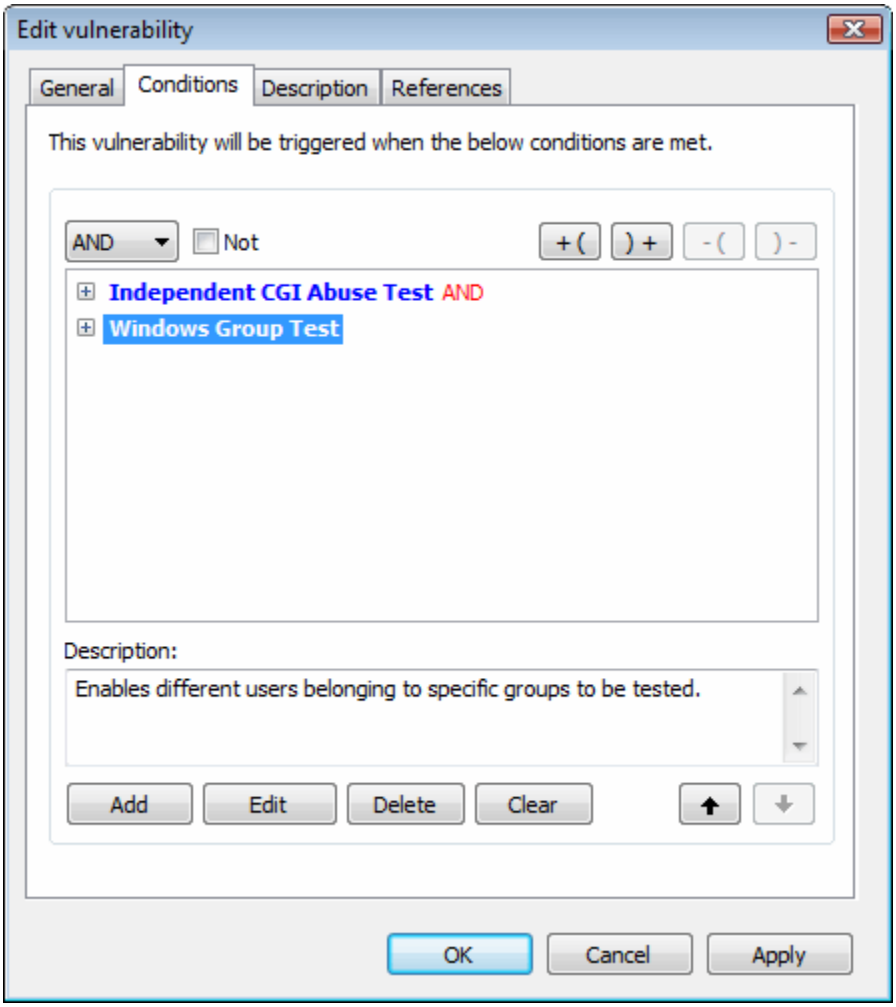
• **Description:** Use this tab to customize the vulnerability check description.

• **References:** Use this tab to customize references and links that lead to relevant information in the OVAL, CVE, MS Security, Security Focus and SANS TOP 20 reports.

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

7.4.4 Vulnerability check conditions setup

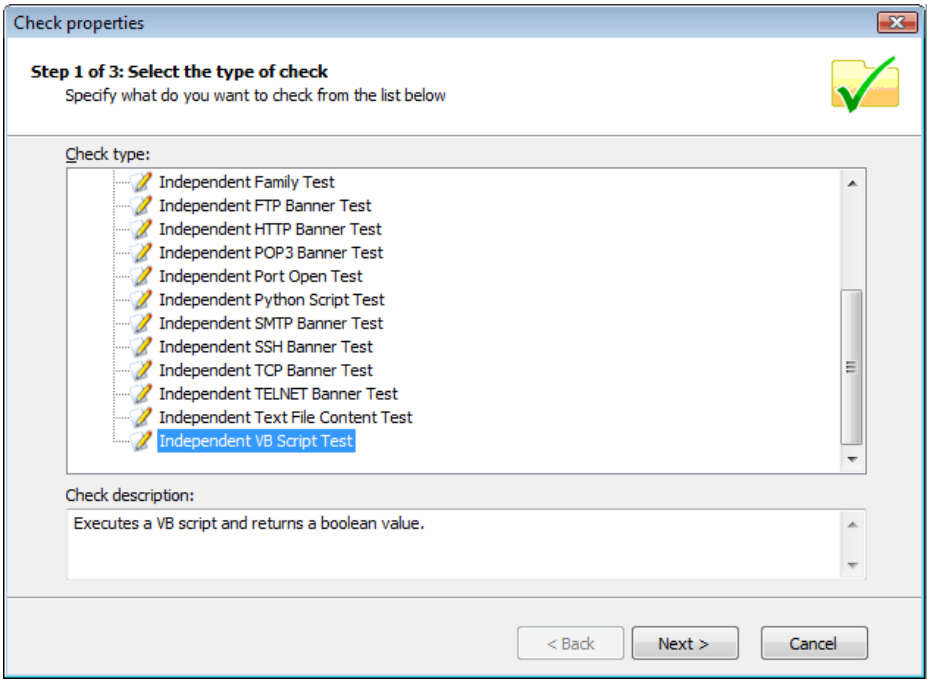
The **Conditions** tab enables you to add or customize conditions, which define whether the computer or network being scanned is vulnerable, or not. It is therefore of paramount importance that any custom checks defined in this section are set-up by qualified personnel that are aware of the ramifications of their actions.



Screenshot 80 - Vulnerability conditions setup tab

To add a vulnerability check condition:

1. Click **Add**.

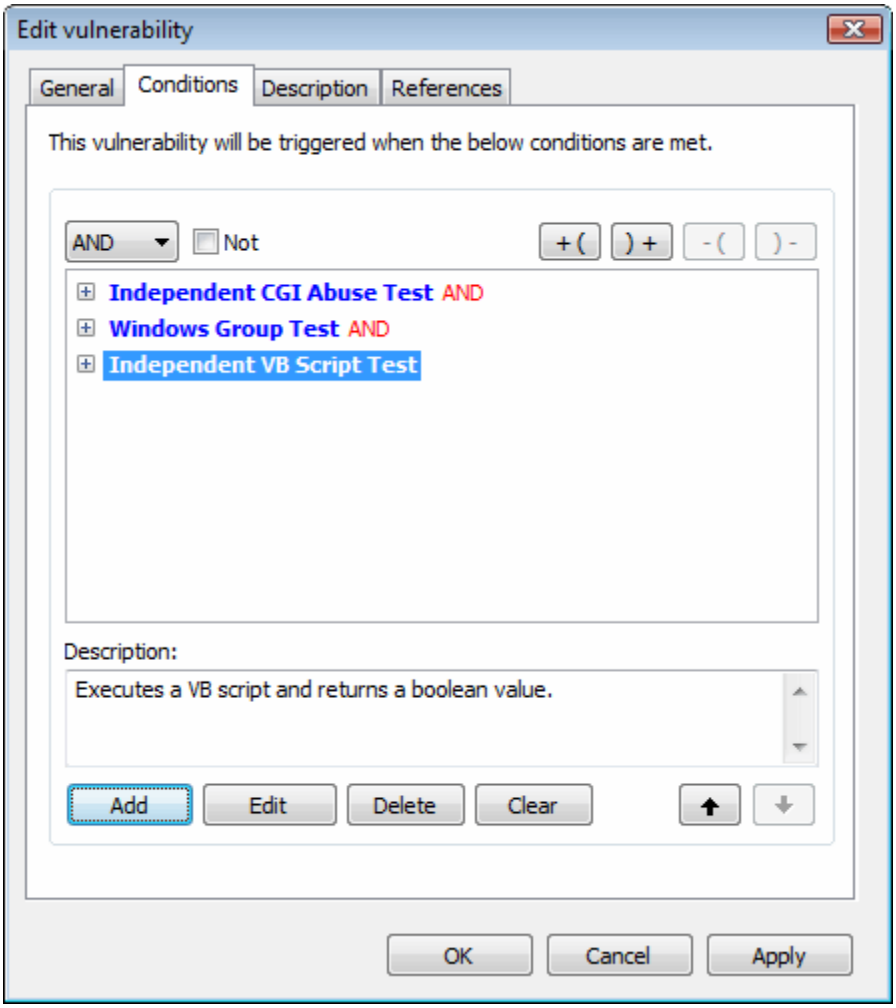


Screenshot 81 - Check properties wizard

2. Select the type of check to be configured and click **Next**.

3. Define the object to examine and click **Next**.

4. Set attributes/desired parameters and click **Finish** to finalize your settings.

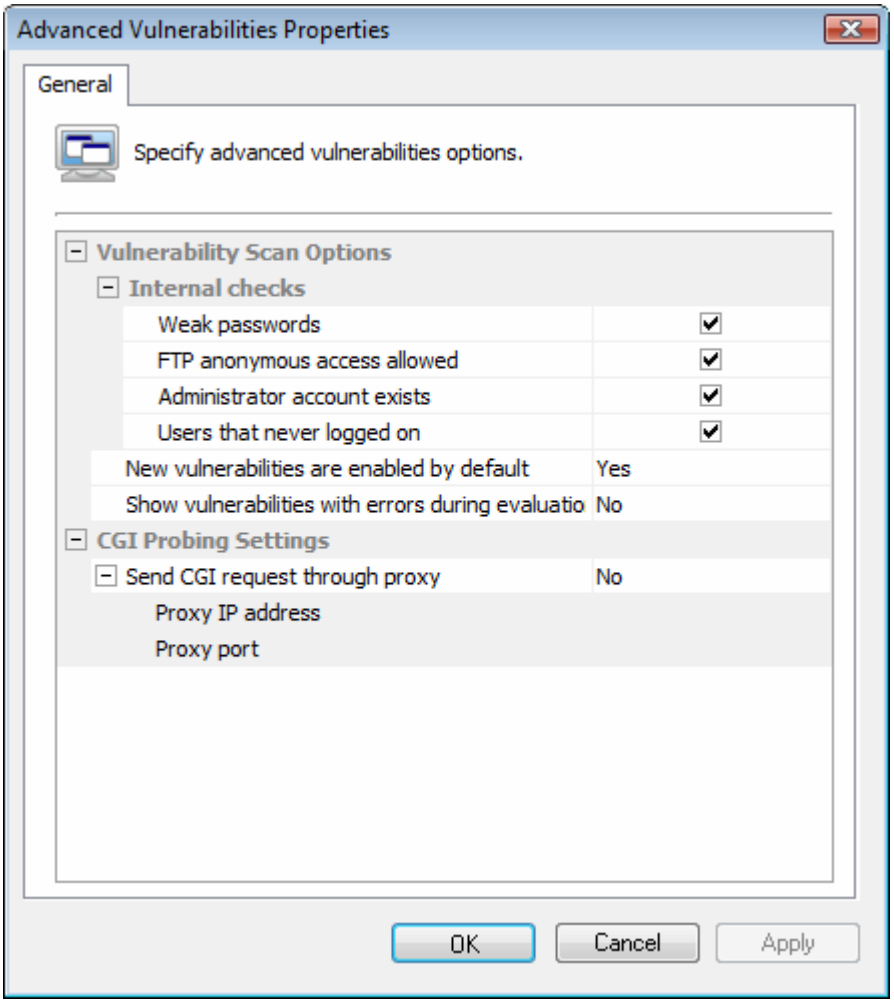


Screenshot 82 - Edit vulnerability

5. If more than one condition is set up, define conditional operators and click **OK** to finalize your configuration settings.

Vulnerability checks - advanced options

Use the **Advanced…** included in the **Vulnerabilities** tab to bring up the advanced vulnerabilities scanning options.

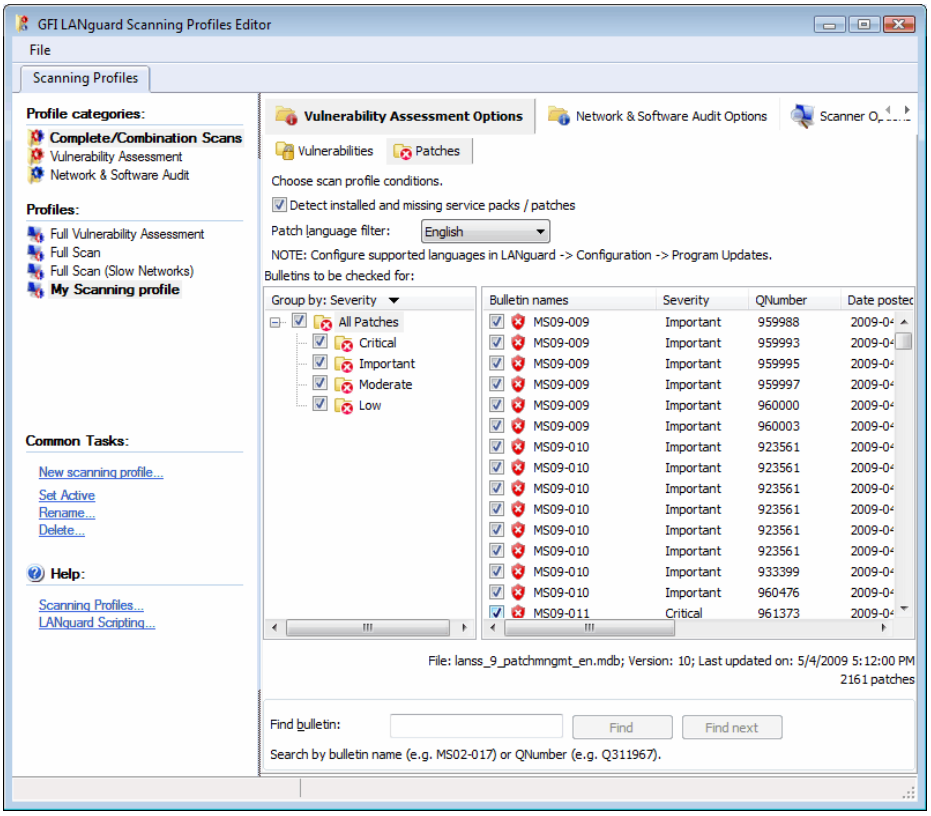


Screenshot 83 - Advanced vulnerability scanning dialogs

Use these options to:

- Configure extended vulnerability scanning features that check your target computers for weak passwords, anonymous FTP access, and unused user accounts.
- Configure how GFI LANguard will handle newly created vulnerability checks.
- Configure GFI LANguard to send CGI requests through a specific proxy server. This is mandatory when CGI requests will be sent from a computer that is behind a firewall to a target web server that is 'outside' the firewall (for example, Web servers that are on a DMZ). The firewall will generally block all the CGI requests that are directly sent by GFI LANguard to a target computer that 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 will be used to convey the CGI request to the target.

7.5 Configuring patches



Screenshot 84 - Scanning Profiles properties: Patches tab options

Use the **Patches** tab to specify which security updates are checked during vulnerability scanning. The patches to be checked are selected from the complete list of supported software updates that is included by default in this tab. This list is automatically updated whenever GFI releases a new GFI LANguard missing patch definition file.

7.5.1 Enabling/disabling missing patch detection checks

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

1. From the **Vulnerability Assessment Options** tab, click **Patches** sub-tab.

2. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

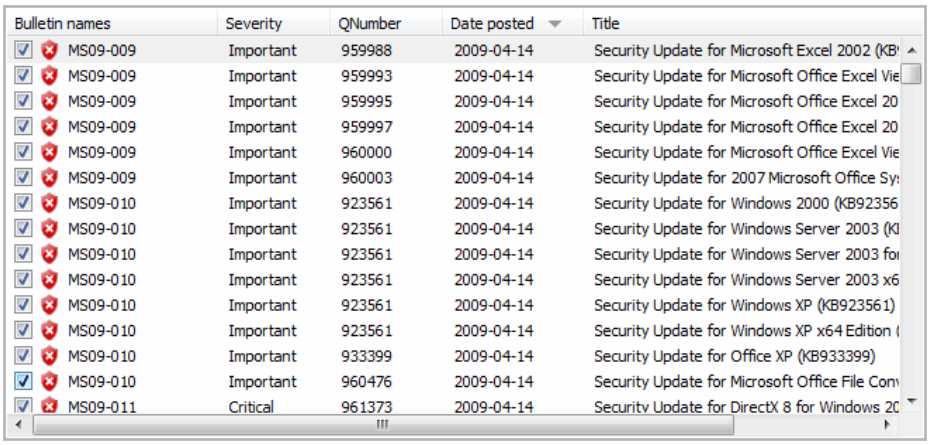
3. In the right pane, select **Detect installed and missing service packs/patches** option.
NOTE: Missing patch scanning parameters are configurable on a scan profile by scan profile basis. Make sure to enable missing patch scanning in all profiles where missing patch scanning is required.

7.5.2 Customizing the list of software patches to be scanned

To specify which missing security updates will be enumerated and processed by a scanning profile:

1. From the **Vulnerability Assessment Options** tab, click **Patches** sub-tab

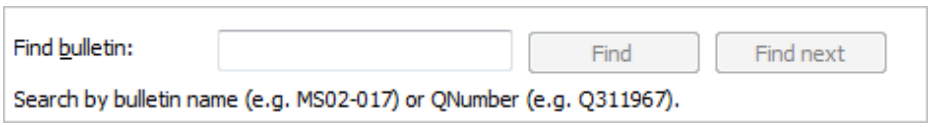
2. Select the scanning profile to customize from the left pane under **Profiles**.



Screenshot 85 - Selecting the missing patches to be enumerated

3. In the right pane, select/unselect which missing patches are enumerated by this scanning profile.

7.5.3 Searching for bulletin information

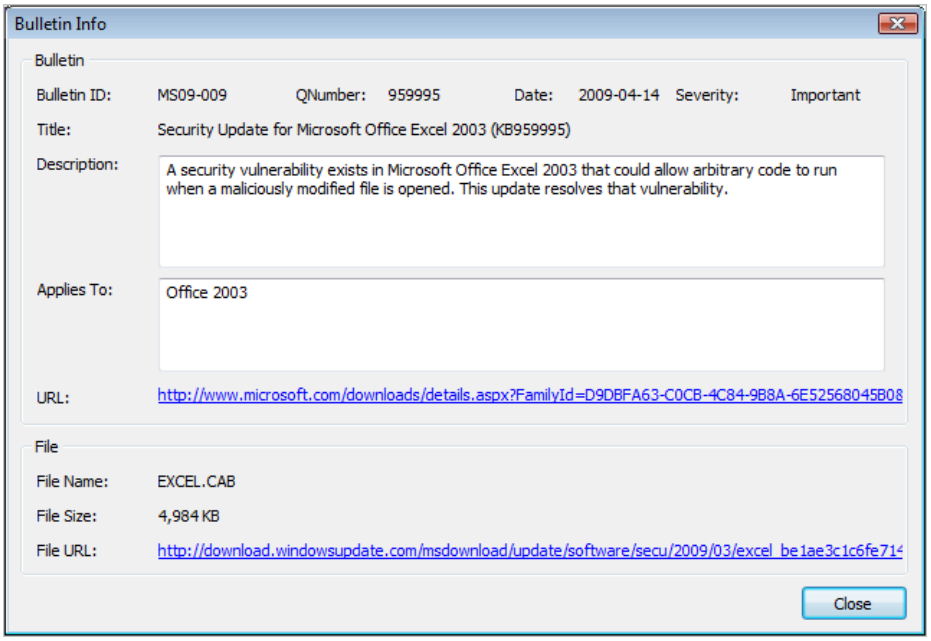


Screenshot 86 – Searching for bulletin information

To search for a particular bulletin:

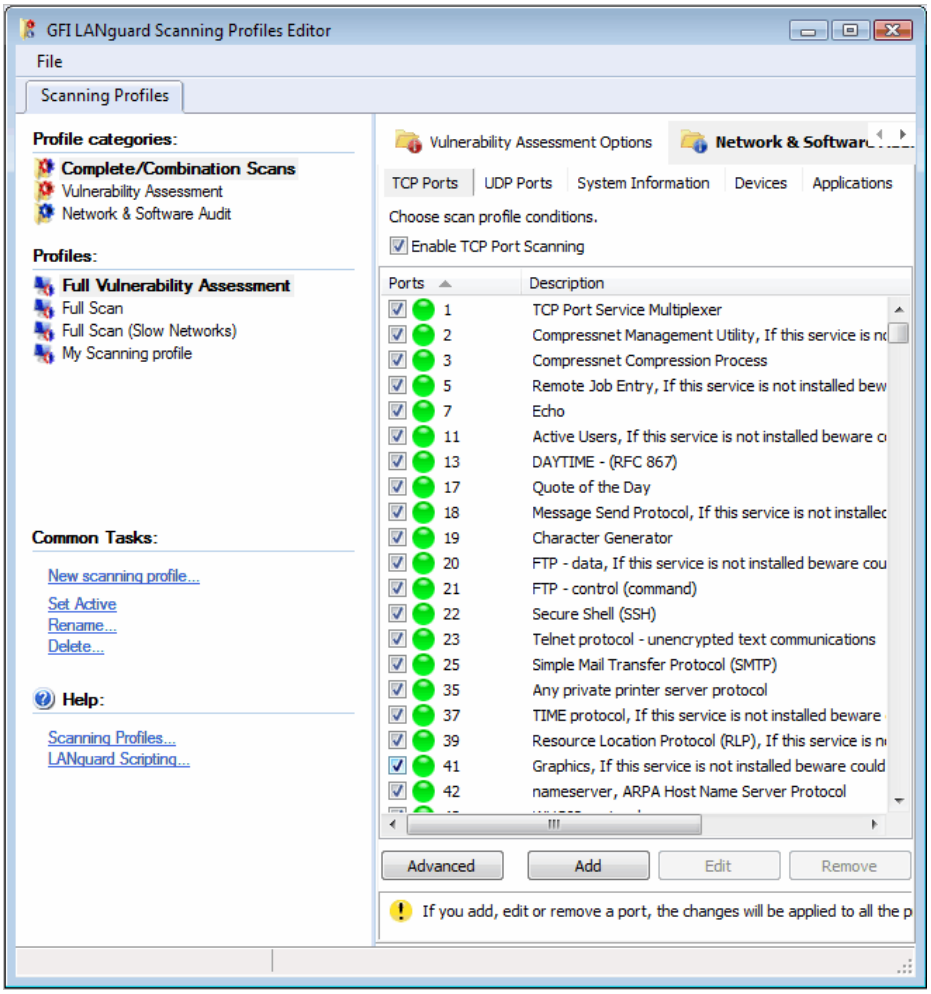
1. Specify the bulletin name (for example, MS02-017) or QNumber (for example, Q311987) in the search tool entry box included at the bottom of the right pane.

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



Screenshot 87 - Extended bulletin information

7.6 Configuring TCP port scanning options



Screenshot 88 - Scanning Profiles properties: TCP Ports tab options

7.6.1 Enabling/disabling TCP Port scanning

To enable TCP Port Scanning in a particular scanning profile,

1. From the **Network & Security Audit Options** tab, click **TCP Ports** sub-tab.

2. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

3. Select **Enable TCP Port Scanning** option.

7.6.2 Configuring the list of TCP ports to be scanned

To configure which TCP ports will be processed by a scanning profile during vulnerability scanning select the required ports:

1. From **Network & Security Audit Options** tab, click **TCP Ports** sub-tab.

2. Select scanning profile to customize from the left pane under **Profiles**.

3. Select TCP ports analyze with this scanning profile.

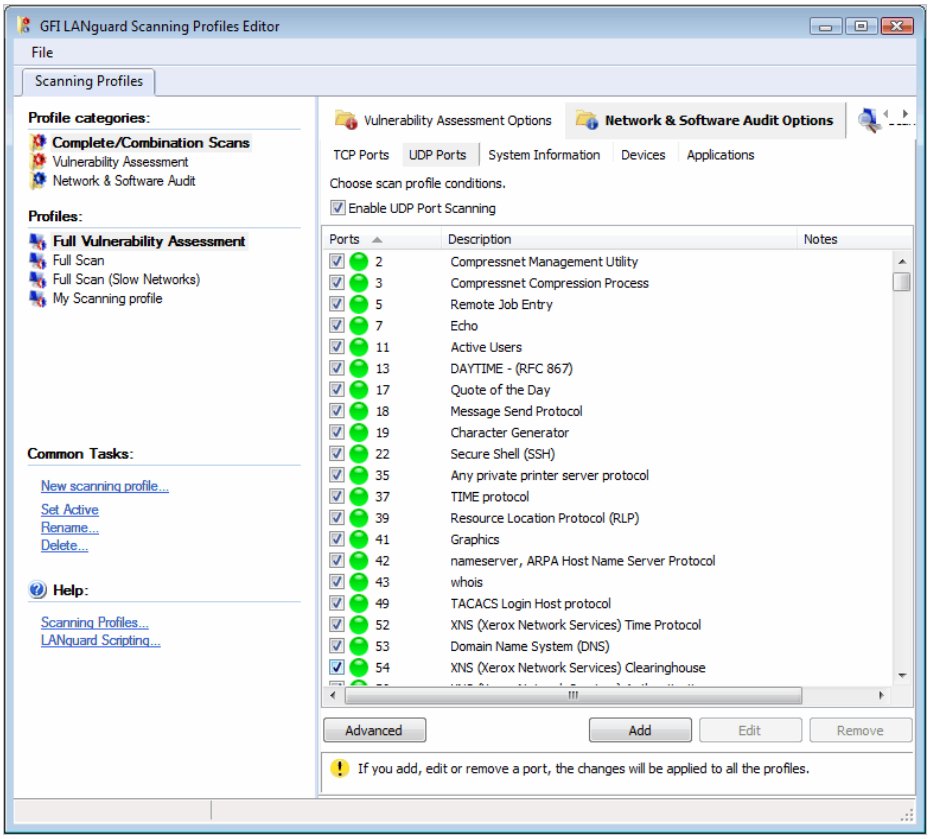
7.6.3 Customizing the list TCP ports

1. From the **Network & Security Audit Options** tab, click **TCP Ports** sub-tab.

2. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

3. Customize the list of TCP Ports through **Add**, **Edit** or **Remove**.
NOTE: The list of supported TCP/UDP Ports is common for all profiles. Deleting a port from the list will make it unavailable for all scanning profiles.

7.7 Configuring UDP port scanning options



Screenshot 89 - Scanning Profiles properties: UDP Ports tab options

7.7.1 Enabling/disabling UDP Port scanning

To enable UDP Port Scanning in a particular scanning profile,

1. From the **Network & Security Audit Options** tab, click **UDP Ports** sub-tab.

2. Select scanning profile to customize from the left pane under **Profiles**.

3. Select **Enable UDP Port Scanning** option.

7.7.2 Configuring the list of UDP ports to be scanned

To configure which UDP ports will be processed by a scanning profile during vulnerability scanning select the required ports:

1. From the **Network & Security Audit Options** tab, click **UDP Ports** sub-tab.

2. Select the scanning profile to customize from the left pane under **Profiles**.

3. Select the UDP ports that will be analyzed by this scanning profile.

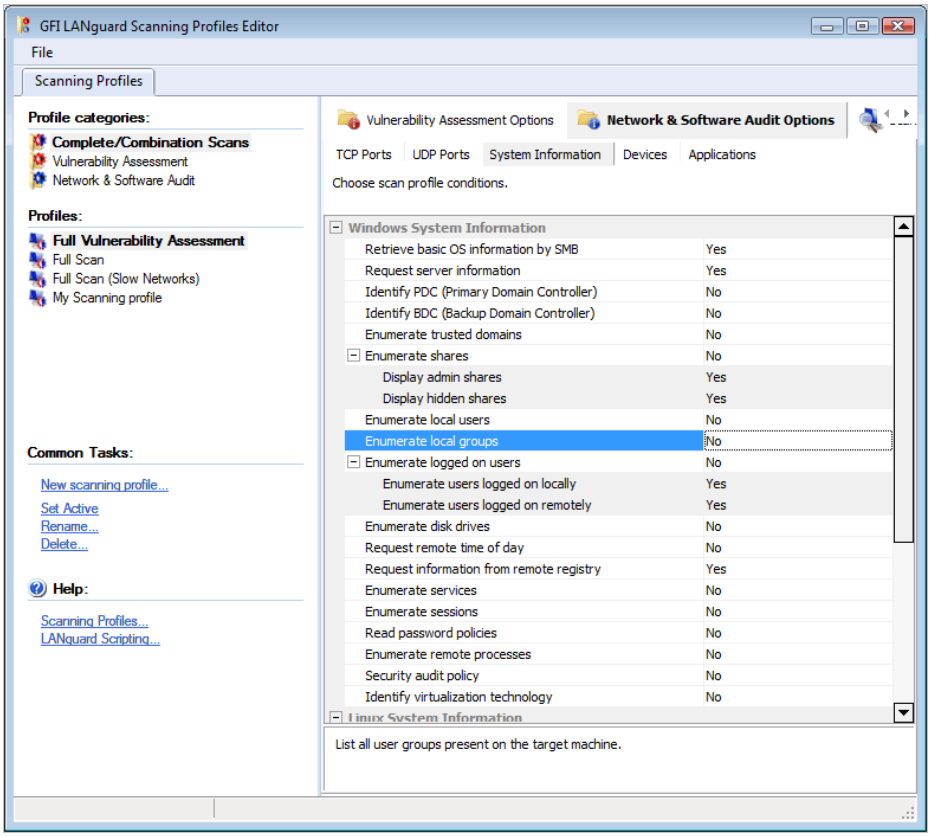
7.7.3 Customizing the list UDP ports

1. From the **Network & Security Audit Options** tab, click **UDP Ports** sub-tab.

2. Select the scanning profile to customize from the left pane under **Profiles**.

3. Customize the list of UDP Ports through **Add**, **Edit** or **Remove**.
NOTE: The list of supported UDP Ports is common for all profiles. Deleting a port from the list will make it unavailable for all scanning profiles.

7.8 Configuring system information retrieval options



Screenshot 90 - Scanning Profiles properties: System Information tab options

To specify what System Information is enumerated by a particular scanning profile during vulnerability scanning:

1. From the **Network & Security Audit Options** tab, click **System Information** sub-tab.

2. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

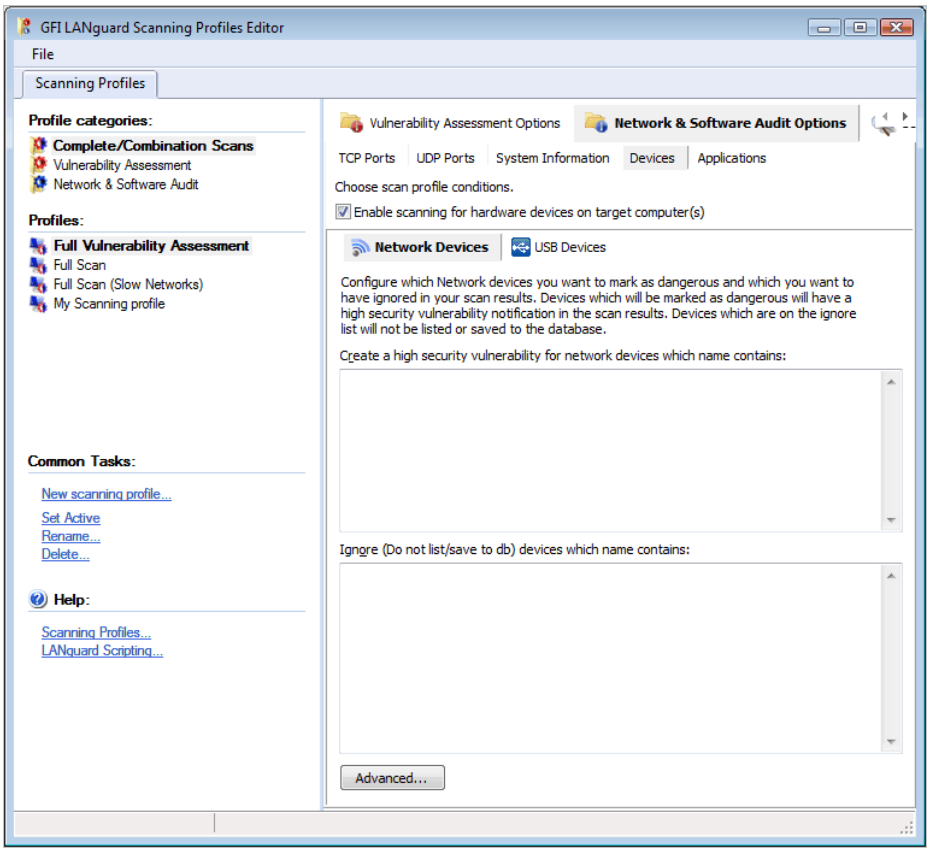
3. From the right pane, expand the **Windows System Information** group or **Linux System Information** group accordingly.

4. Select which Windows/Linux OS information will be retrieved by the security scanner from scanned targets.

For example, to enumerate administrative shares in scan results, expand the **Enumerate shares** option and set the **Display admin shares** option to 'Yes'.

7.9 Configuring the attached devices scanning options

Use the **Devices** tab to enumerate network devices.



Screenshot 91 - The network devices configuration page

Together with device enumeration, you can further configure GFI LANguard 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 that you want to be alerted.

You can also configure GFI LANguard to exclude from the scanning process particular USB devices that you consider as 'safe' such as USB keyboards. This is achieved by compiling a safe/whitelist of USB devices to be ignored during scanning.

Similarly you can create a separate scanning profile that enumerates only Bluetooth dongles and wireless NIC cards connected to your target computers In this case however, 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 two 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 blacklisted (unauthorized)/whitelisted (safe) devices lists.

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

7.9.1 Enabling/disabling checks for all installed network devices

To enable network device (including USB device) scanning in a particular scanning profile:

1. From the **Network & Security Audit Options** tab, click **Devices** sub-tab

2. Click **Network Devices** tab

3. Select the scanning profile to customize from the left pane under **Profiles**.

4. From the right pane, select **Enable scanning for hardware devices on target computer(s)**.

NOTE: Network device scanning is configurable on a scan profile by scan profile basis. Make sure to enable network device scanning in all profiles where this is required.

7.9.2 Scanning for network devices

Compiling a network device blacklist/whitelist

To compile a network device blacklist/whitelist for a scanning profile:

1. From the **Network & Security Audit Options** tab, click **Devices** sub-tab.

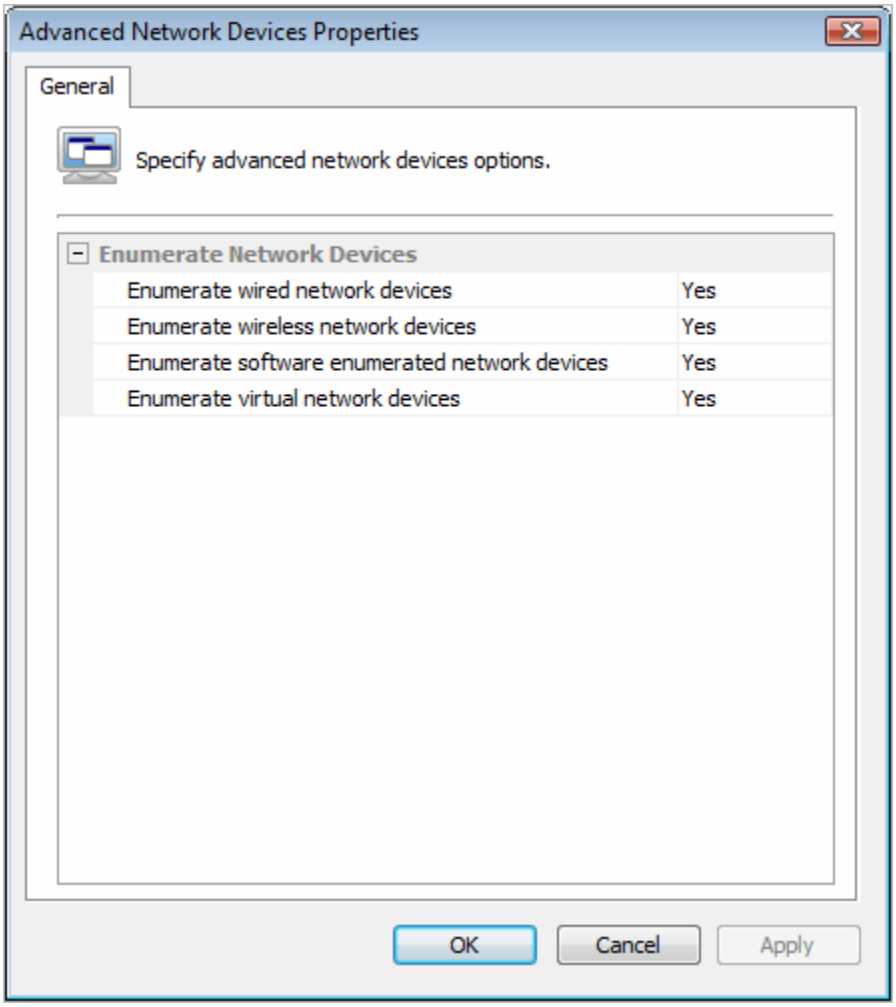
2. Click **Network Devices** tab.

3. Select the scanning profile to customize from the left pane under **Profiles**.

4. In the right pane: to create a network device blacklist, specify which devices you want to classify as high security vulnerabilities in the space provided under **Create a high security vulnerability for network devices which name contains**.

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. To create a network device whitelist, specify which devices you want to ignore during network vulnerability scanning in the space provided under **Ignore (Do not list/save to db) devices which name contains**.
NOTE: Only include one network device name per line.

7.9.3 Configuring advanced network device scanning options



Screenshot 92 - Advanced network devices configuration dialog

From the **Network Devices** tab, you can also specify the type of network devices 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. From the **Network & Security Audit Options** tab, click **Devices** sub-tab.

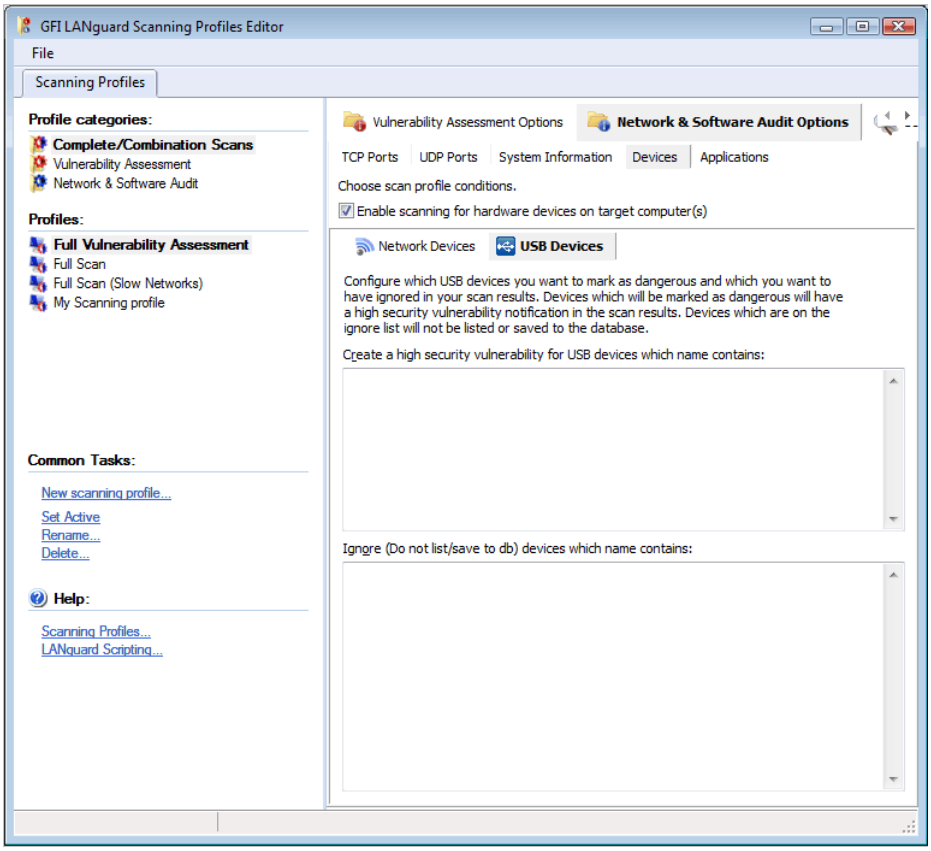
2. Click on the **Network Devices** tab (opens by default).

3. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

4. Click **Advanced** at the bottom of the page.

5. Set the required options to **Yes** and on completion click **OK** to finalize your settings.

7.10 Scanning for USB devices



Screenshot 93 - The Devices configuration page: USB Devices tab options

7.10.1 Compiling a USB devices blacklist/whitelist

To compile a list of unauthorized/dangerous USB devices:

1. From the **Network & Security Audit Options** tab, click the **Devices** sub-tab.

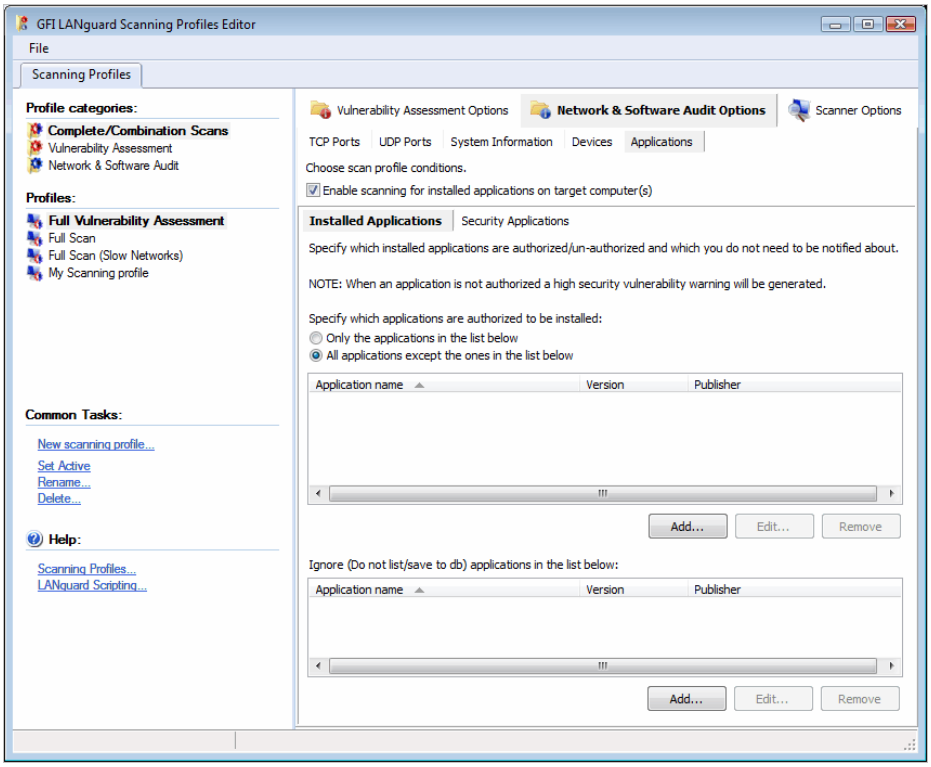
2. Click **USB Devices** tab.

3. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

4. In the right pane to create a USB device blacklist, specify which devices you want to classify as high security vulnerabilities in the space provided under **Create high security vulnerability for USB devices that name contains.** For example, if you enter the word 'iPod' you will be notified through a high security vulnerability alert when a USB device whose name contains the word 'iPod' is detected. To create a USB device whitelist, specify which USB devices you want to ignore during network vulnerability scanning in the space provided under **Ignore (Do not list/save to db) devices which name contains**.
NOTE: Only include only one network device name per line.

7.11 Configuring applications scanning options

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



Screenshot 94 - The applications configuration page

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

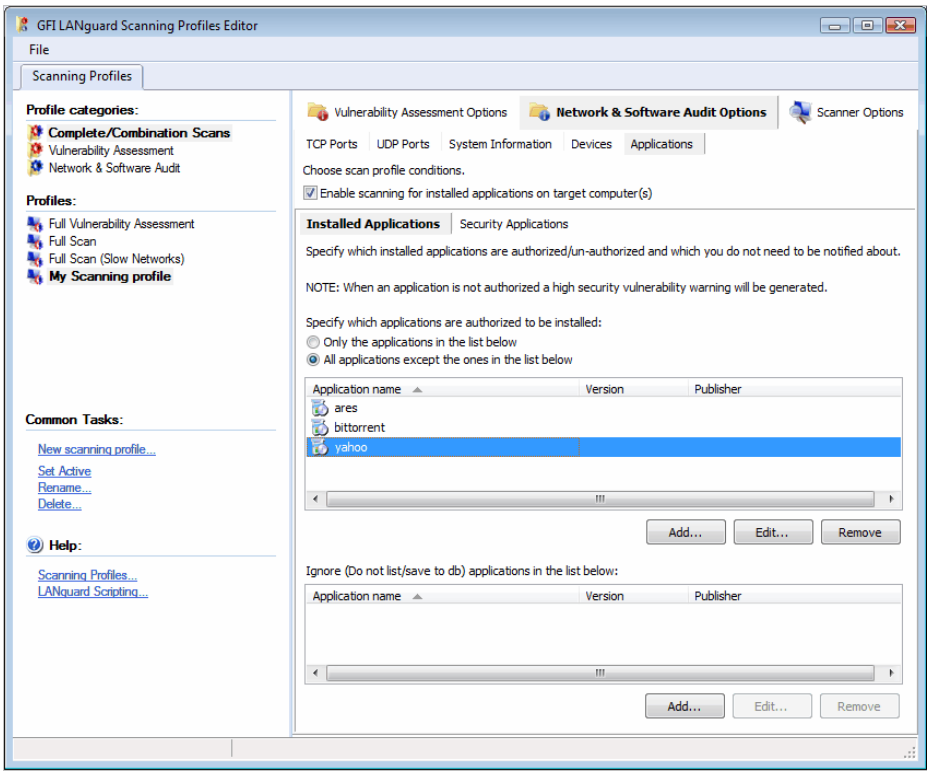
7.11.1 Scanning installed applications

Screenshot 95 - List of supported anti-virus and anti-spyware applications

By default, GFI LANguard also supports integration with particular security applications. These include various anti-virus and anti-spyware software. During security scanning, GFI LANguard 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



Screenshot 96 - The Applications tab: Installed Applications tab options

To enable installed applications scanning in a particular scanning profile:

1. From the **Network & Security Audit Options** tab, click on the **Applications** sub-tab.

2. Click on the **Installed Applications** tab.

3. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

4. Select the **Enable scanning for installed applications on target computers** option.

NOTE: Installed applications scanning are configurable on a scan profile by scan profile basis. Make sure to enable installed applications scanning in all profiles where this is required.

Compiling installed applications blacklist/whitelist

To compile installed applications blacklist/whitelist:

1. From the **Network & Security Audit Options** tab, click **Applications** sub-tab.

2. Click on the **Installed Applications** tab.

3. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

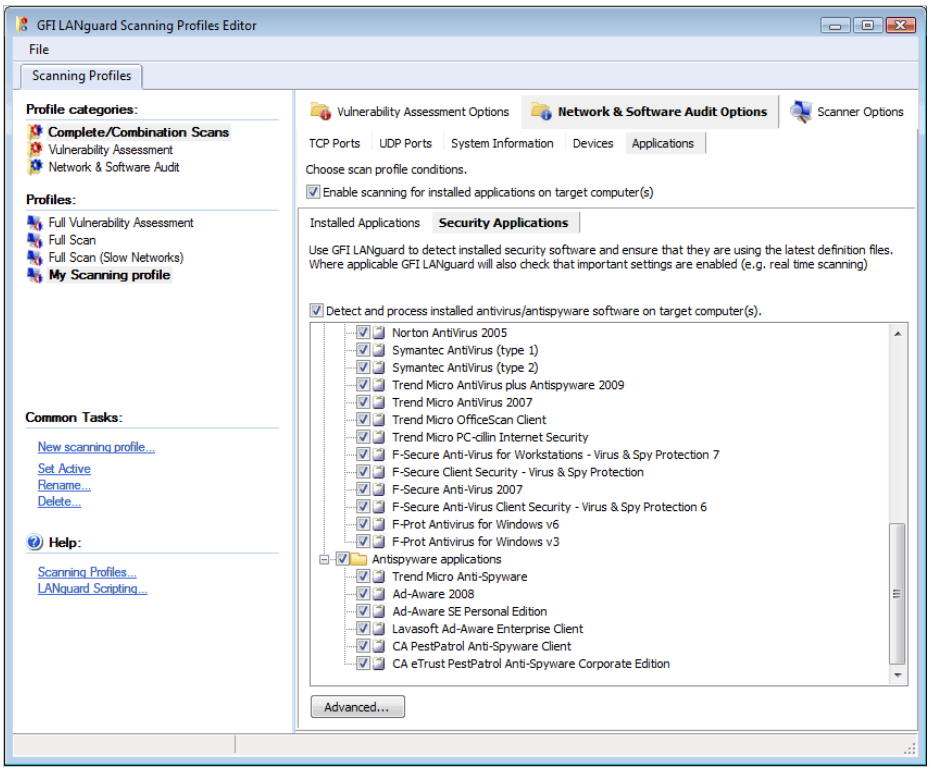
4. In the right pane, select **Enable scanning for installed applications on target computer(s)** option.

5. Select either **Only applications in the list below:** or **All applications except the ones in the list below** and click add button to add applications that will either be listed or blacklisted.

6. In the **Ignore (Do not list/save to db) applications from the list below:** options key in applications by clicking Add. Any application listed is whitelisted.

NOTE: Include only one application name per line.

7.11.2 Scanning security applications



Screenshot 97 - The Applications configuration page: Security Applications tab options

GFI LANguard ships with a default list of anti-virus and anti-spyware applications that 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. From the **Network & Security Audit Options** tab, click on the **Applications** sub-tab.

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

3. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

4. Select the **Detect and process installed antivirus/antispyware software on target computer(s)** option.

NOTE: Security applications scanning are configurable on a scan profile by scan profile basis. Make sure to enable security applications scanning in all profiles where this is required.

Customizing the list of security application for scanning

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

1. From the **Network & Security Audit Options** tab, click on the **Applications** sub-tab.

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

3. Select the scanning profile that you wish to customize from the left pane under **Profiles**.

4. Select the security applications that you wish investigate.

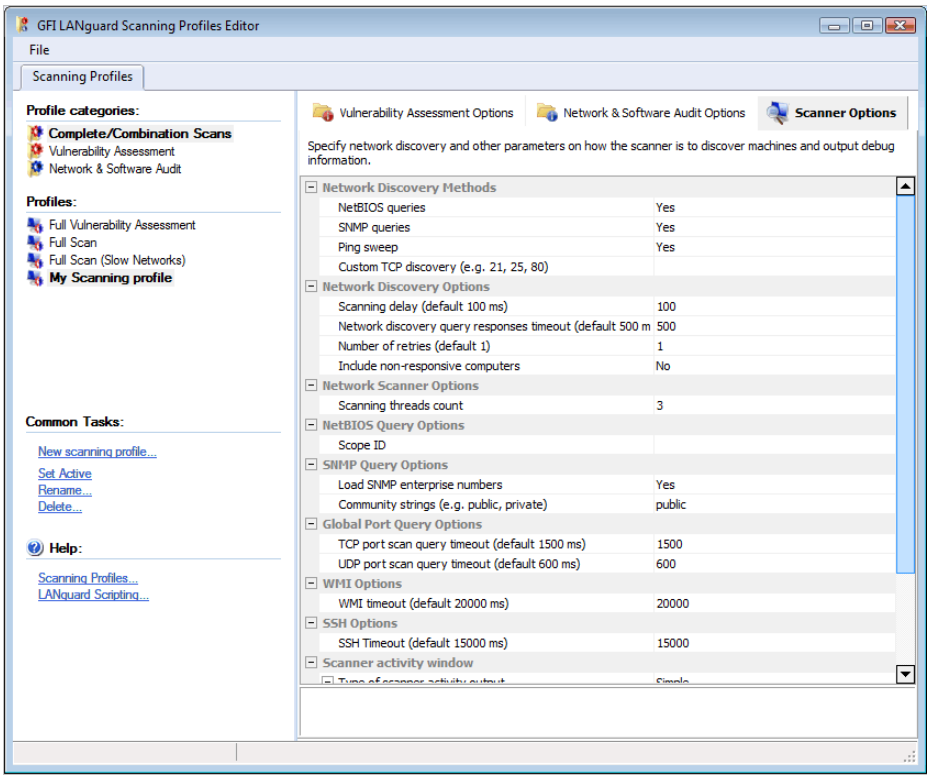
Configuring security applications - advanced options

Use the **Advanced** button included in the **Security Applications** configuration page to configure extended security product checks that 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.

7.12 Configuring the security scanning options

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.



Screenshot 98 - Scanning Profiles properties: Scanner Options tab

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

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

8. Utilities

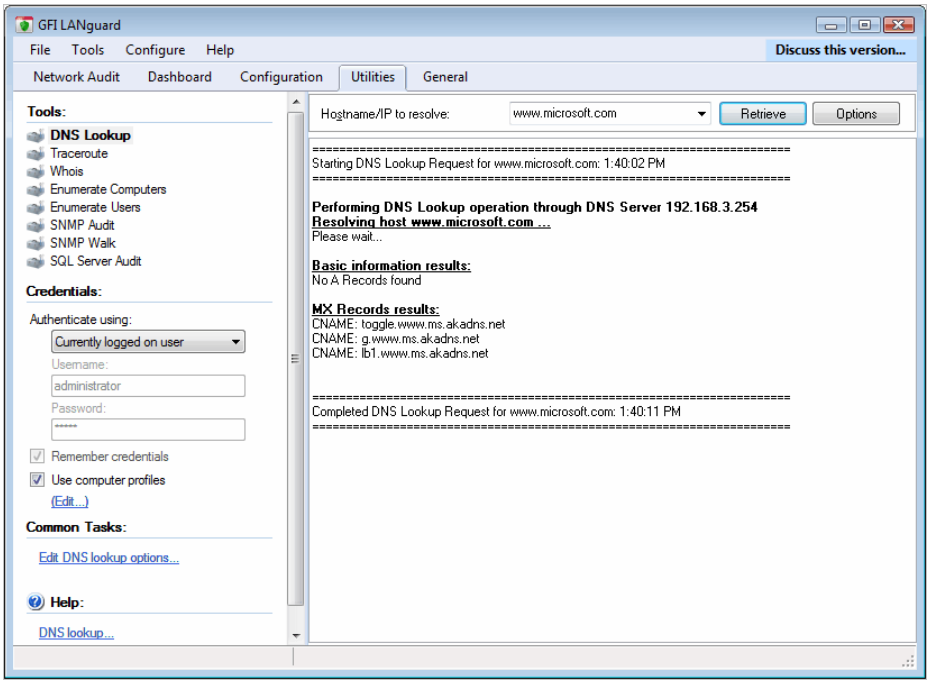
8.1 Introduction

Use the **Utilities** tab to access the following list of default network tools:

- DNS Lookup
- Traceroute
- Whois
- Enumerate Computers
- Enumerate Users
- SNMP Audit
- SNMP Walk
- SQL Server Audit

8.2 DNS lookup

DNS lookup resolves domain names into the corresponding IP address and retrieves particular information from the target domain (for example, MX record, etc.).

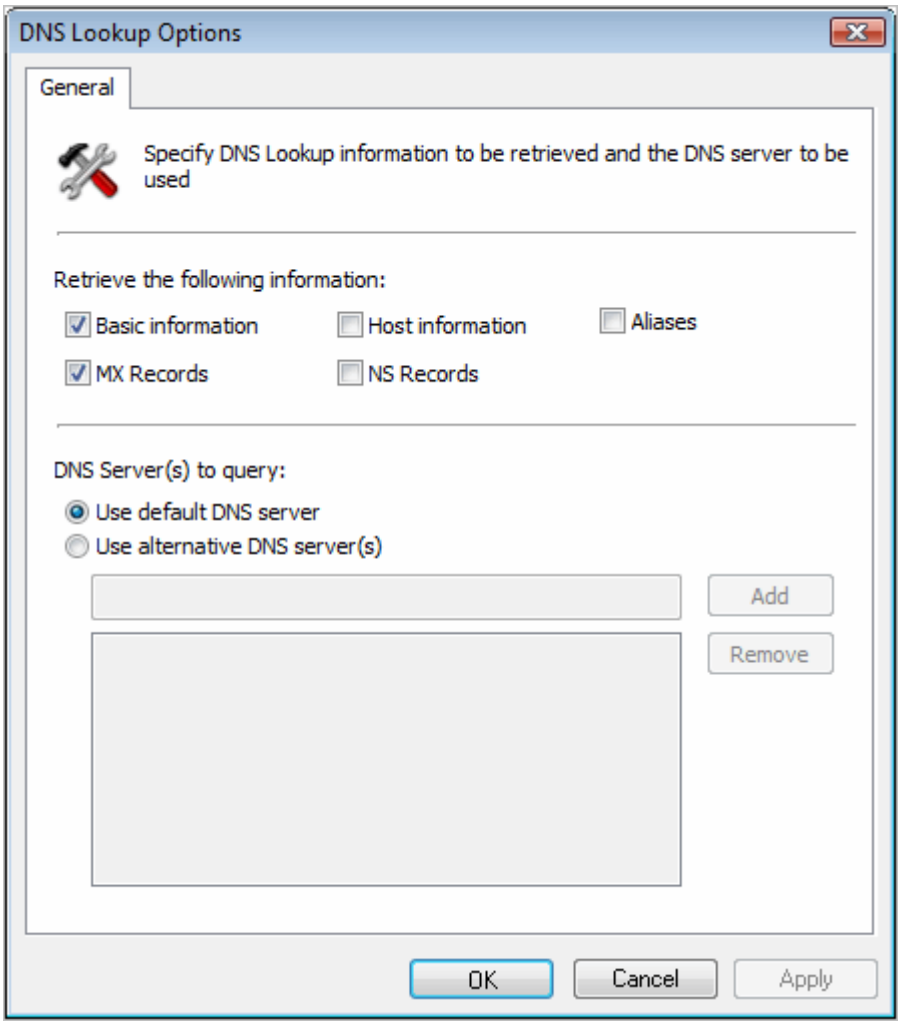


Screenshot 99 - The DNS Lookup tool

To resolve a domain/host name:

1. Click on the **Utilities** tab and select **DNS Lookup** in the left pane under **Tools**.

2. Specify the hostname to resolve in the **Hostname/IP to resolve** textbox.



Screenshot 100 - The DNS Lookup tool

3. Under **Common Tasks** in the left pane, click on **Edit DNS Lookup options…** or **Options** button on the right pane and specify the information that you wish to retrieve:

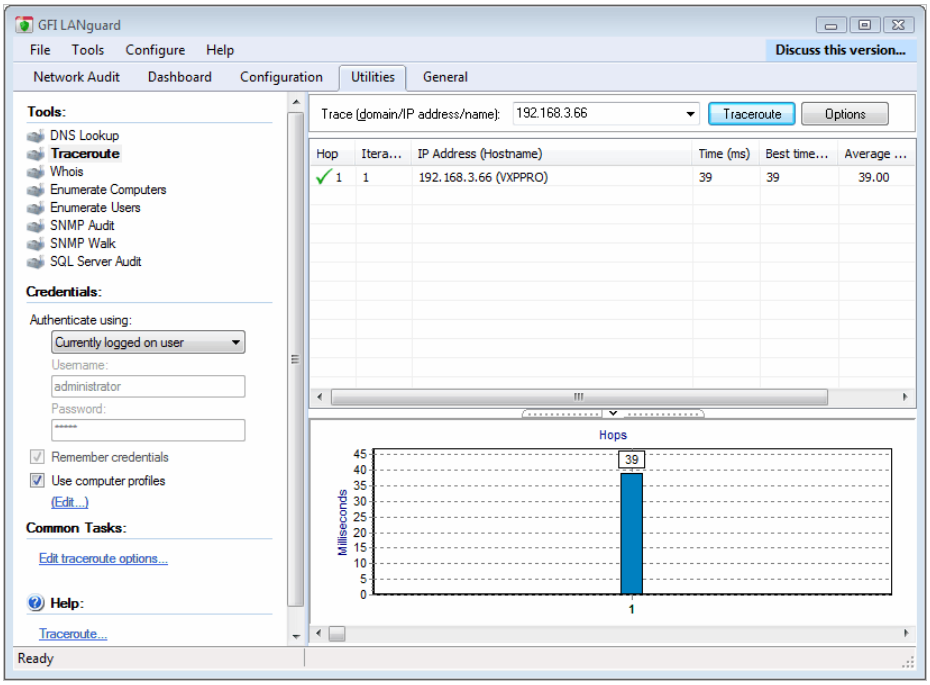
- **Basic Information** – Select this option to retrieve the host name and the relative IP address.
- **Host Information** – Select this option to retrieve HINFO details. The host information (known as HINFO) generally includes target computer information such as hardware specifications and OS details.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

8.3 Traceroute

Traceroute identifies the path that GFI LANguard followed to reach a target computer.



Screenshot 101 - Trace route tool

To use this tool:

1. Click on the **Utilities** tab and select **Traceroute** in the left pane under **Tools**.

2. In the **Trace (domain/IP/name)** dropdown, specify the name/IP or domain to reach.

3. Under **Common Tasks** in the left pane, click on **Edit Traceroute options…** or **Options** button on the right pane to change the default options.

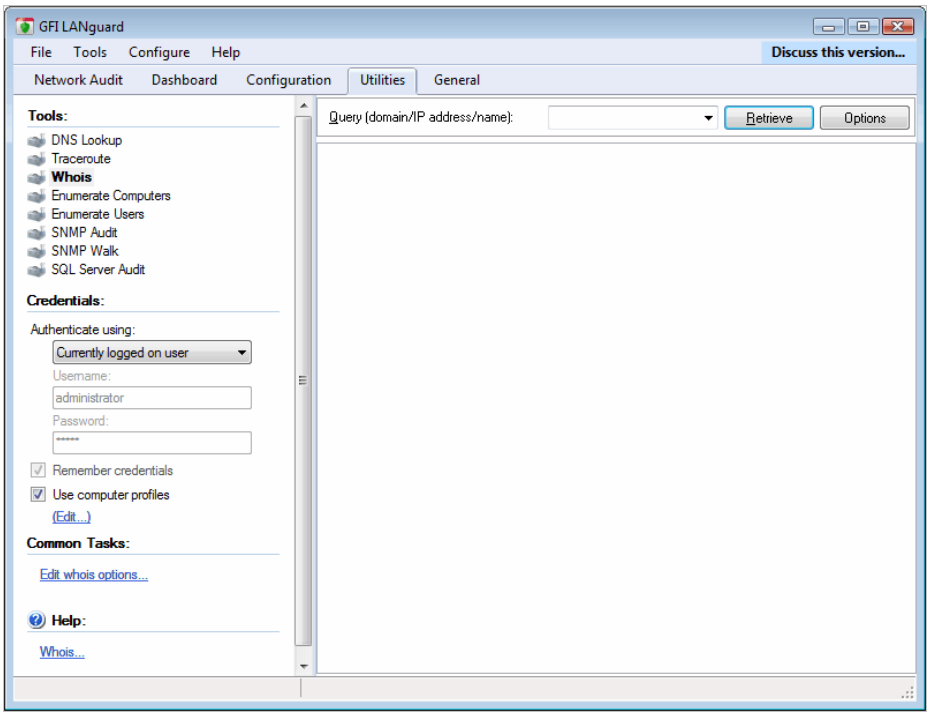
4. Click on the **Traceroute** button to start the tracing process.

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).

8.4 Whois

Whois looks up information on a particular domain or IP address.



Screenshot 102 - Whois tool

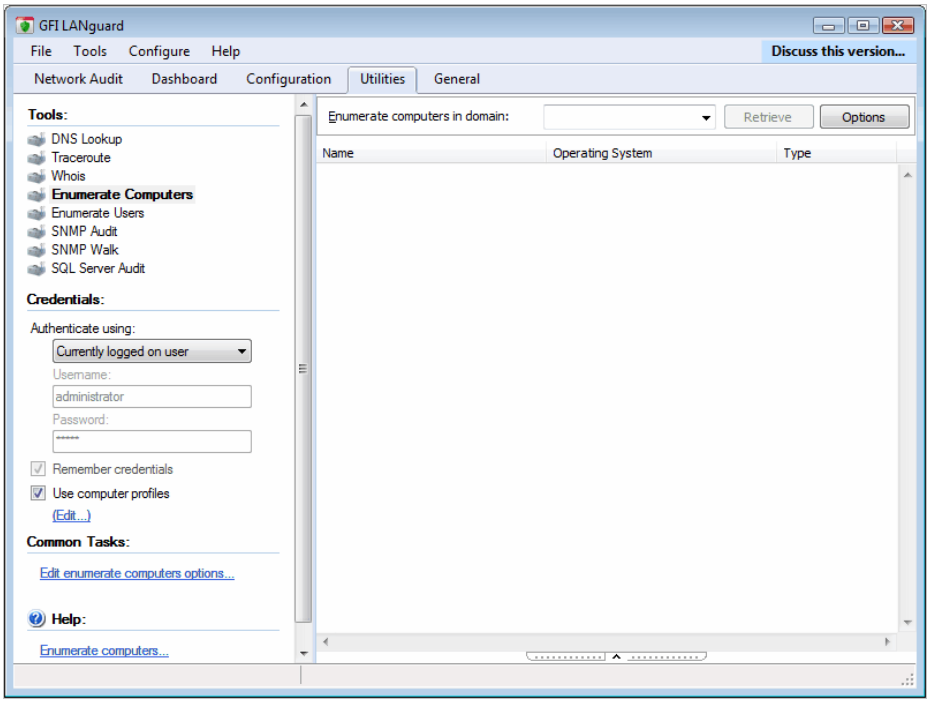
1. Click on the **Utilities** tab and select **Whois** in the left pane under **Tools**.

2. In the **Query (domain/IP/name)** dropdown, specify the name/IP or domain to reach.

3. Under **Common Tasks** in the left pane, click on **Edit Whois options…** or **Options** button on the right pane to change the default options.

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

8.5 Enumerate computers



Screenshot 103 - Enumerate Computers tool

The enumerate computers utility identifies 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 operating system installed on the discovered computers.
- 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 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.

To enumerate computers:

1. Click on the **Utilities** tab and select **Enumerate Computers** in the left pane under **Tools**.

2. In the **Enumerate computers in domain** dropdown, select the desired domain.

3. Under **Common Tasks** in the left pane, click on **Edit Enumerate Computers options…** to change the default options or **Options** button on the right pane.

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

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

8.5.1 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**.

8.5.2 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**.

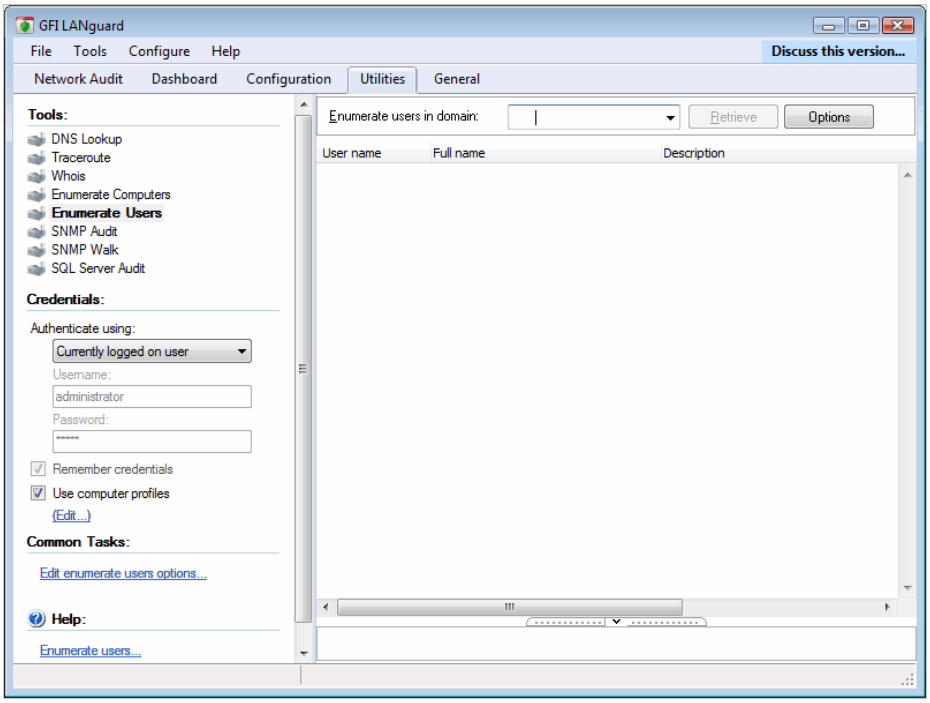
8.5.3 Enabling auditing policies

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** that will guide you through the configuration process.

8.6 Enumerate users



Screenshot 104 - The Enumerate Users tool dialog

To scan the Active Directory and retrieve the list of all users and contacts included in this database:

1. Click on the **Utilities** tab and select **Enumerate Users** in the left pane under **Tools**.

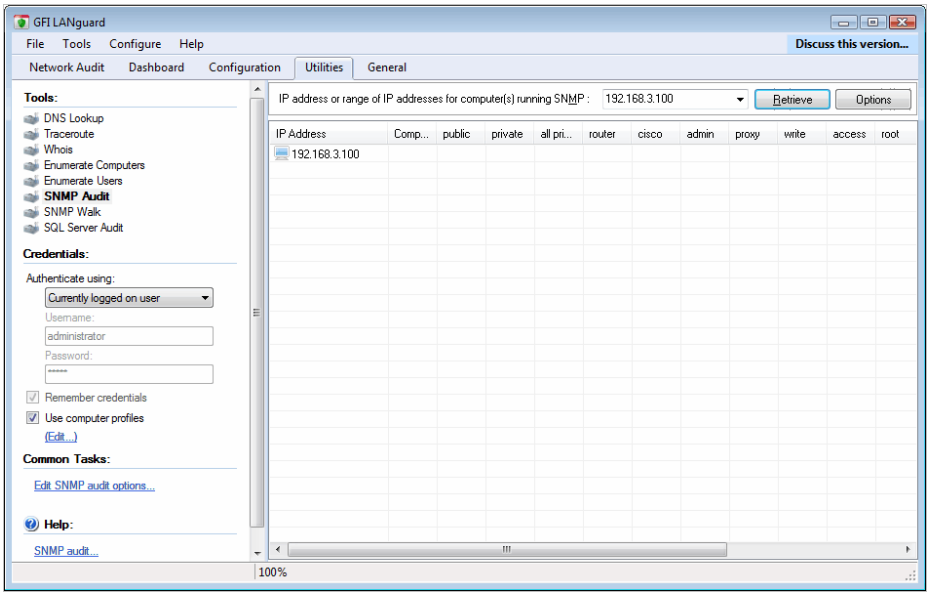
2. In the **Enumerate users in domain** dropdown, select the desired domain.

3. Under **Common Tasks** in the left pane, click on **Edit Enumerate Users options…** or **Options** button on the right pane to 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.

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

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.

8.7 SNMP Auditing



Screenshot 105 - SNMP Audit tool

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 management console.

To perform SNMP audits on network targets and identify weak community strings:

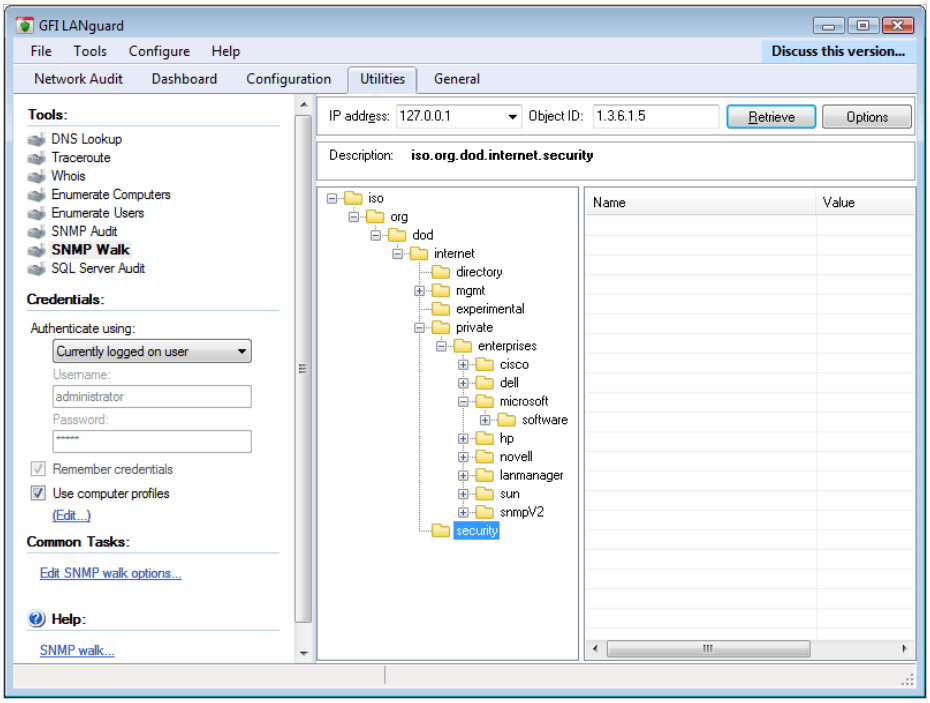
1. Click on the **Utilities** tab and select **SNMP Audit** in the left pane under **Tools**.

2. In the **IP of computer running SNMP** dropdown, specify the IP to reach.

3. Under **Common Tasks** in the left pane, click on **Edit SNMP Audit options…** or **Options** button on the right pane to edit the default options.

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

8.8 SNMP Walk



Screenshot 106 - SNMP Walk

To probe your network nodes and retrieve SNMP information (for example, OID's):

1. Click on the **Utilities** tab and select **SNMP Walk** in the left pane under **Tools**.

2. In the **IP address** dropdown, specify the IP address of the computer that you wish to scan for SNMP information.

3. Under **Common Tasks** in the left pane, click on **Edit SNMP Walk options…** or **Options** button on the right pane to edit the default options such as providing alternative community strings.

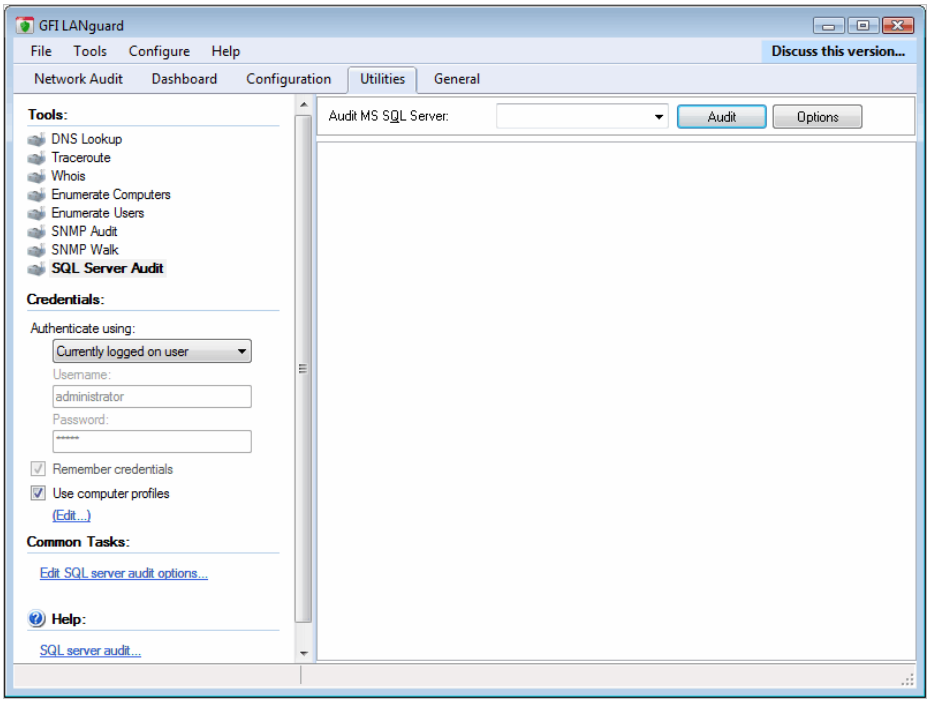
4. Click on the **Retrieve** button to start the process.
NOTE: SNMP activity is often blocked at the router/firewall so that Internet users cannot SNMP scan your network. The information enumerated through SNMP can be used by malicious users to attack your system. Unless this service is required, it is highly recommended to turn off SNMP.

8.9 SQL Server Audit

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 a security audit on a particular Microsoft SQL server installation:

1. Click on the **Utilities** tab and select **SQL Server Audit** in the left pane under **Tools**.



Screenshot 107 -SQL Server Audit

2. In the **Audit MS SQL Server** dropdown, specify the IP address of the SQL Server that you wish to audit.

3. Under **Common Tasks** in the left pane, click on **Edit SQL Server Audit options…** or **Options** button on the right pane to edit the default options such as performing dictionary attacks on all the other SQL user accounts.

4. Click on the **Audit** button to start the process.

9. Using GFI LANguard from the command line

9.1 Introduction

In this chapter you will discover how to use the three command line tools bundled with GFI LANguard; 'lnsscmd.exe', 'deploycmd.exe' and 'impex.exe' These command line tools allow you to launch network vulnerability scans and patch deployment sessions as well as importing and exporting profiles and vulnerabilities without loading up the GFI LANguard management console.

Configured through a set of command line switches, the complete list of supported switches together with a description of the respective function is provided below.

9.2 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=username /password=password] [/UseComputerProfiles] [/email=emailAddress] [/DontShowStatus] [/?]

Switches:

Switch	Description
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 will be used. **NOTE**: In the management console, 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 management console).
/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 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:

Supported variable	Description
%INSTALLDIR%	During scanning, this variable will be replaced with the path to the GFI LANguard 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 '**lanss@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"

9.3 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:

Switch	Description
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 that 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 management console.
/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 '**TMJohnDoe**'.
3. Reboot the target computer after successful deployment of the file.

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

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

9.4 Using 'impex.exe' - the command line import and export tool

The Impex tool is a command line tool which can be used to Import and Export profiles and vulnerabilities from GFI LANguard Network Security Scanner. The parameters supported by this tool are the following:

impex [[/H] | [/?]] | [/XML:xmlfile [/DB:dbfile]

[[/EX] [/MERGE]] | [/IM [/ONLYNEWER]]

[/PROFILES | /VULNS | /PORTS | /PROFILE:name |

/VULNCAT:cat [/VULN:name]

/PORTTYPE:type [/PORT:number]]

[/SKIP | /OVERWRITE | /RENAME:value]]

Options:

Option	Description
H, /?, running without parameters	Displays help information.

/XML:<xmlfile>	This parameter specifies the name of the imported or exported XML file. <xmlfile> needs to be replaced with the name of the file the profile is being exported to. NOTE: This parameter is mandatory to import or export alerts.
/DB:<dbfile>	Where <dbfile> is the database file to be used during the import/export operation. If this is not specified the default "operationsprofiles.mdb" file will be used.
/EX	Exports data from database to XML file (Default option)
/MERGE	If this is specified when the target XML for export already exists, the file will be opened and data will be merged; otherwise the XML file is first deleted.
/IM	Imports data from XML file to database
/ONLYNEWER	When specified only vulnerabilities newer than the newest vulnerability in the database will be imported.
/PROFILES	Exports/Imports all scanning profiles.
/VULNS	Exports/Imports all vulnerabilities.
/PORTS	Exports/Imports all ports
/PROFILE:<name>	Exports/Imports the specified scanning profile.
/VULNCAT:<category>	Exports/Imports all vulnerabilities of the specified category.
/VULN:<name>	Exports/Imports the specified vulnerability (/VULNCAT must be specified).
/PORTTYPE:<type>	Exports/Imports all ports of the specified type.
/PORT:<number>	Exports/Imports the specified port (/PORTTYPE must be specified).
/SKIP	If an item already exists in the target XML/database, that item will be skipped
/OVERWRITE	If an item already exists in the target XML/database, that item will be overwritten.
/RENAME:<value>	If an item already exists in the target XML/database, that item will be renamed to <value>. If /PROFILE or /VULN was specified, port information merged with that item is a port or renamed by prefixing its name with <value> in any other case.

Example: To export a specific alert:

impex /xml:regcheck.xml /vuln:"Blaster Worm" /vulncat:"Registry Vulnerabilities"

Example: To import a whole XML file:

impex /xml:regcheck.xml /im

NOTE 1: The Impex executable can be located in the GFI LANguard 9.0 installation folder.

NOTE 2: It is highly recommended not to use the Impex tool if GFI LANguard application (languard.exe) or LANguard scanning profiles (scanprofiles.exe) are running.

NOTE 3: If the specified <xmlfile>, <dbfile>, <name>, <category> or <value> contain any space character, the whole value must be placed between double quotes.

Example: /VULN:"Apache: Apache doc directory"

NOTE 4: It is recommended that if the vulnerabilities are imported into another installation, the other installation have the same build number as where the vulnerabilities database has been exported.

10. Adding vulnerability checks via custom conditions or scripts

10.1 Introduction

Scripts that identify custom vulnerabilities can be created using any VBScript compatible scripting language. By default, GFI LANguard ships with a script editor that you can use to create your custom scripts.

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

GFI LANguard also supports Python scripting. For more information on GFI LANguard Python scripting refer to the section in this manual.

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.

10.2 GFI LANguard VBscript language

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

Security auditing scripts can be developed using the script editor that ships with GFI LANguard. This built-in script editor includes syntax highlighting capabilities as well as debugging features that support you during script development. Open the script editor from **Start ► Programs ► GFI LANguard 9.0 ► LANguard 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 9.0 ► LANguard 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 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 users.

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

To create new vulnerability checks that use custom VBscripts:

- 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 9.0 ► LANguard 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
```

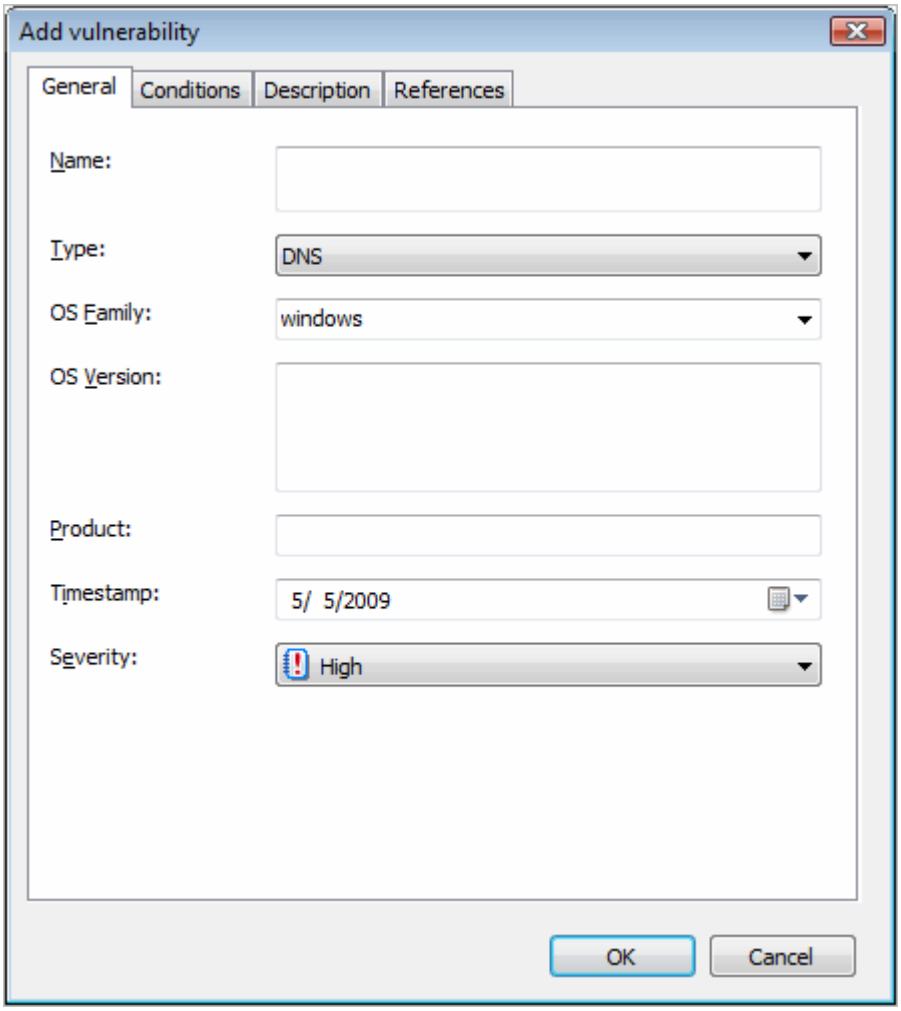
4. Save the script in '<LANguard 9.0 installation folder path> \Data\Scripts\myscript.vbs'.

Step 2: Add the new vulnerability check

1. Open the GFI LANguard management console.

2. Click on the **Configuration** tab, and select scanning profiles management,

3. Click on the **Vulnerability Assessment** sub-node and from the middle pane, select the category in which the new vulnerability check will be included (for example, High Security Vulnerabilities).

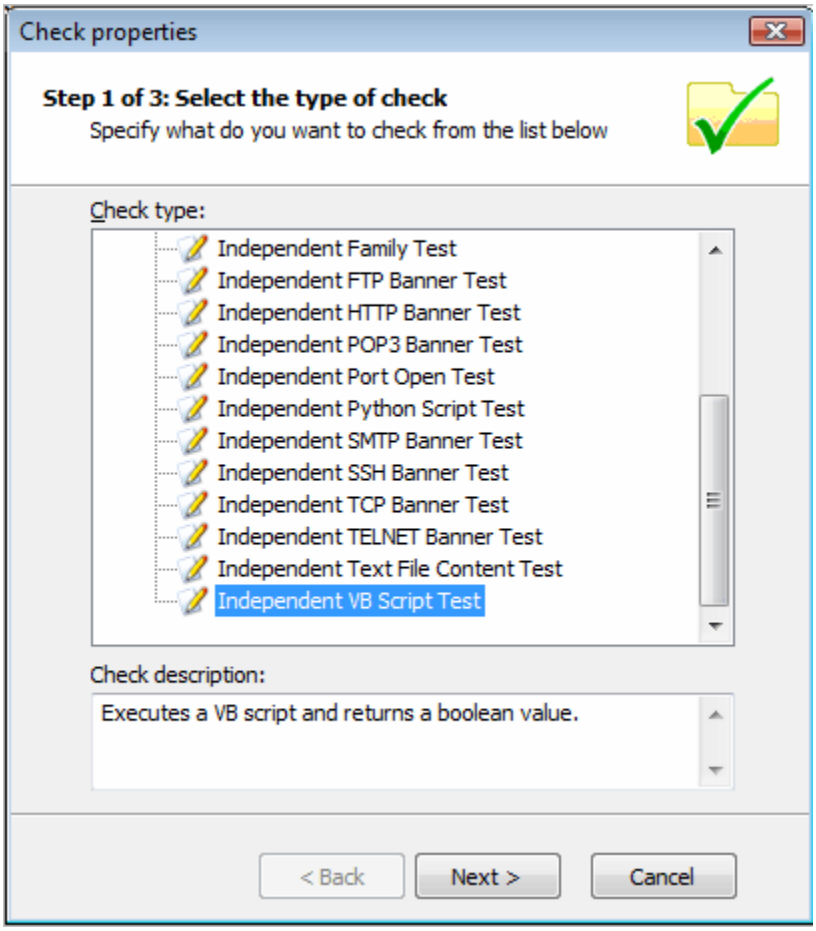


Screenshot 108 - The new vulnerability check dialog

4. In the new window, add a new vulnerability by clicking **Add...** in the middle pane.

5. Go through the **General**, **Description** and **References** tabs while specifying the basic details such as the vulnerability name, short description, security level and OVAL ID (if applicable).

6. Click the **Conditions** tab and click on the **Add…** button. This will bring up the check properties wizard.



Screenshot 109 - The check triggering conditions dialog

7. Select **Independent checks ► VBScript** node and click on **Next** button to continue setup.

8. Click on the **Choose file** button and select the custom VBscript file that will be executed by this check (For this example select 'myscript.vbs'). Click on **Next** to proceed.

9. Select the relative condition setup in the wizard to finalize script selection. Click on **Finish** to exit wizard.

10. Click on **OK** to save new vulnerability check.

Testing the vulnerability check/script used in example

Scan your local host computer using the scanning profile where the new check was added.

In **Network Audit ► Scan Results**, a vulnerability warning will be shown in the **Vulnerability Assessment** node of the scan results.

10.3 GFI LANguard SSH Module

GFI LANguard 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.

10.3.1 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. 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 that adds results to the vulnerability check report (i.e. scan results). These results are shown in the GFI LANguard management console 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.

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

10.3.2 Adding a vulnerability check that uses a custom shell script

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 ' <GFI LANguard 9.0 installation folder path> ..\Data\Scripts\myscript.sh"

Step 2: Add the new vulnerability check

1. Open the GFI LANguard management console.

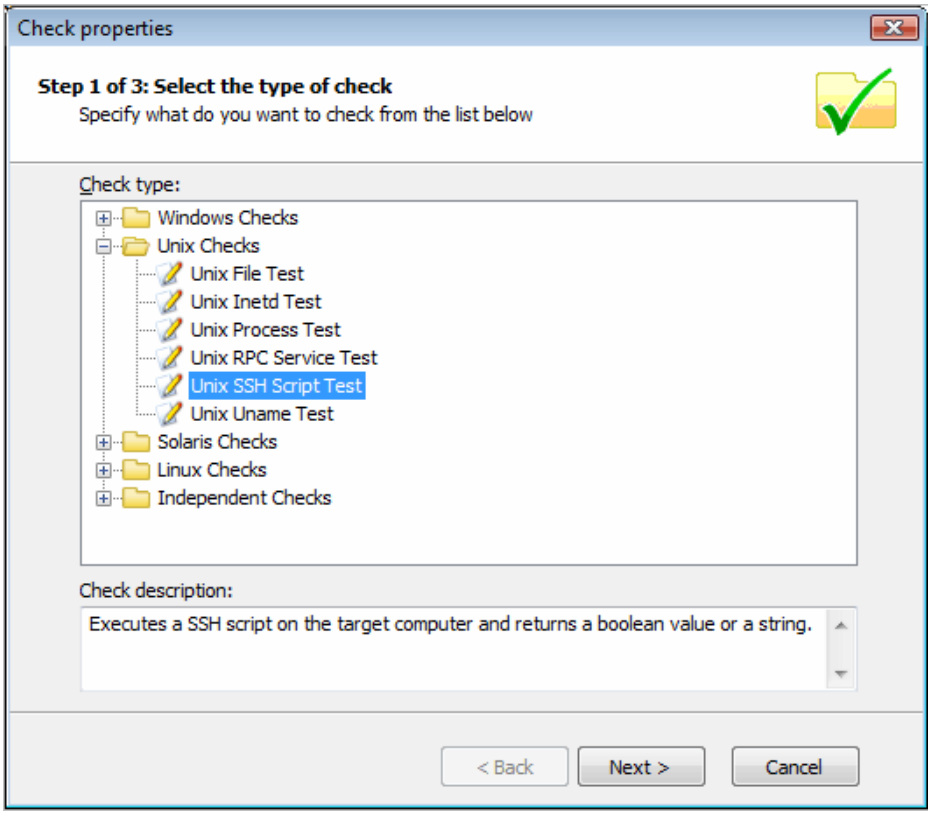
2. Click on the **Configuration** tab, expand the **Scanning Profiles** and click on the **Vulnerability Assessment** sub-node.

3. From the middle pane, select the category in which the new vulnerability check will be included (for example, High Security Vulnerabilities…).

4. In the new window, add a new vulnerability by clicking **Add...** in the middle pane.

5. Go through the General, Description and Reference tabs while specifying the basic details such as the vulnerability name, short description, security level and OVAL ID (if applicable).

6. Choose the **Conditions** tab and click on the **Add…** button. This will bring up the check properties wizard.



Screenshot 110 - The check triggering conditions dialog

7. Select **Unix checks ► SSH Script Test** node and click on Next button to continue setup.

8. Click on the **Choose file** button and select the custom SSH Script file that will be executed by this check (For this example select 'myscript.sh'). Click on **Next** to proceed.

9. Select the relative condition setup in the wizard to finalize script selection. Click on **Finish** to exit wizard.

10. Click on **OK** to save new vulnerability check.

Testing the vulnerability check/script used in our example

Scan your local host computer using the scanning profile where the new check was added.

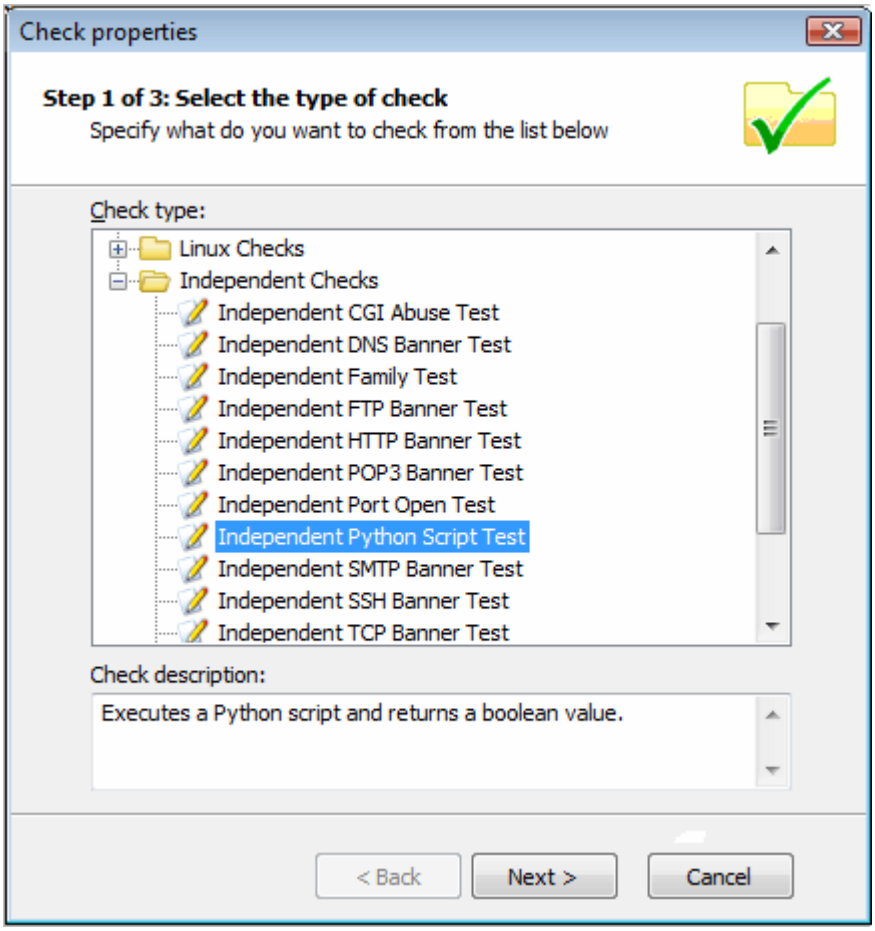
1. Log on to a Linux target computer and create a file called 'test.file'. This check will generate a vulnerability alert if a file called 'test.file' is found.

2. Launch a scan on the Linux target where you created the file.

3. Check you scan results.

10.4 Python scripting

GFI LANguard also supports a new type of vulnerability checks - Python Script Test. This type of check is available under the Independent Checks type.



Screenshot 111 - Independent checks: Python Script Test

For more information on Python scripting refer to the GFI LANguard scripting documentation located in **Start menu ► Programs ► GFI LANguard 9.0**.

11. Miscellaneous

11.1 Introduction

In this section you will find information on:

- How to enable NetBIOS on a network computer.
- Installing the Client for Microsoft Networks component on Windows 2000 or higher.
- Configuring Password Policy Settings in an Active Directory-Based Domain.
- Viewing the Password Policy Settings of an Active Directory-Based Domain.

11.2 Enabling NetBIOS on a network computer

1. Log on to the target computer with administrative rights

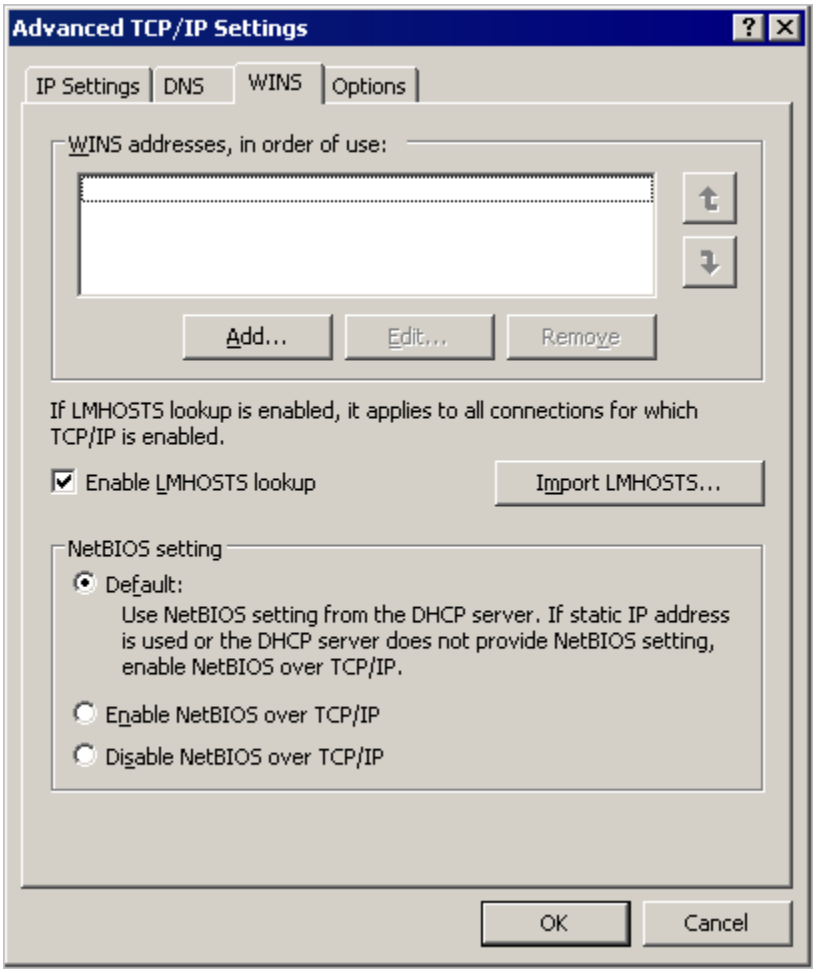
2. Navigate to **Control Panel** and access **Networking options** or **Network or Sharing Centre**.

3. Right click on **Local Area 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 112 - 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).

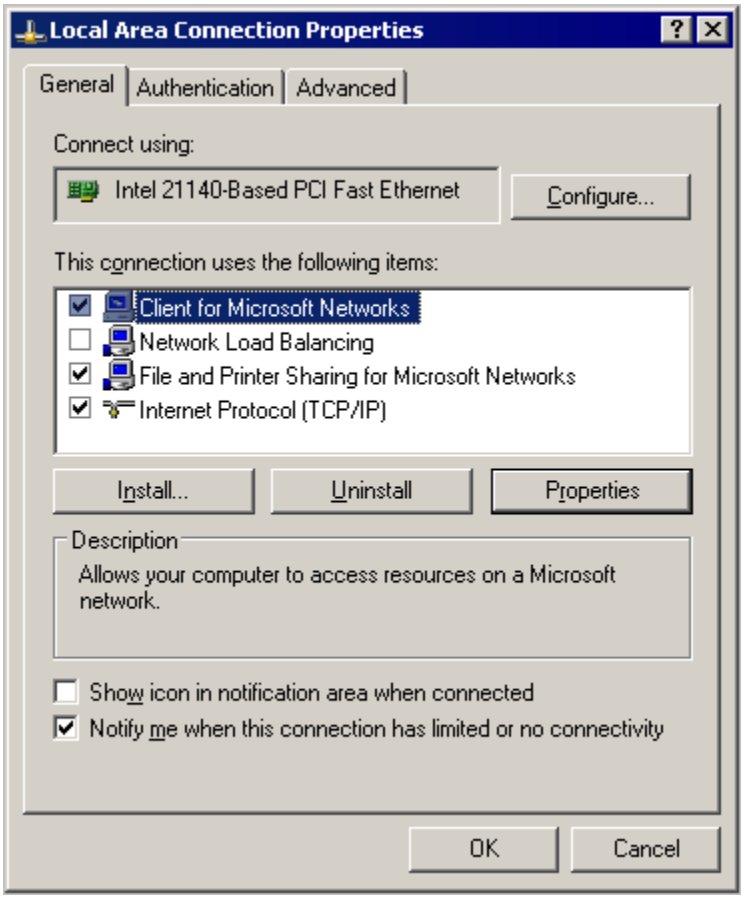
11.3 Installing the Client for Microsoft Networks component on Windows 2000 or higher

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 **Control Panel** and access **Networking options** or **Network or Sharing Centre**.

2. Right click on the **Local Area Connection** item and select **Properties**.

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 113 - Local Area Connection Properties dialog

3. From the **General** tab, 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 **OK** button to continue.

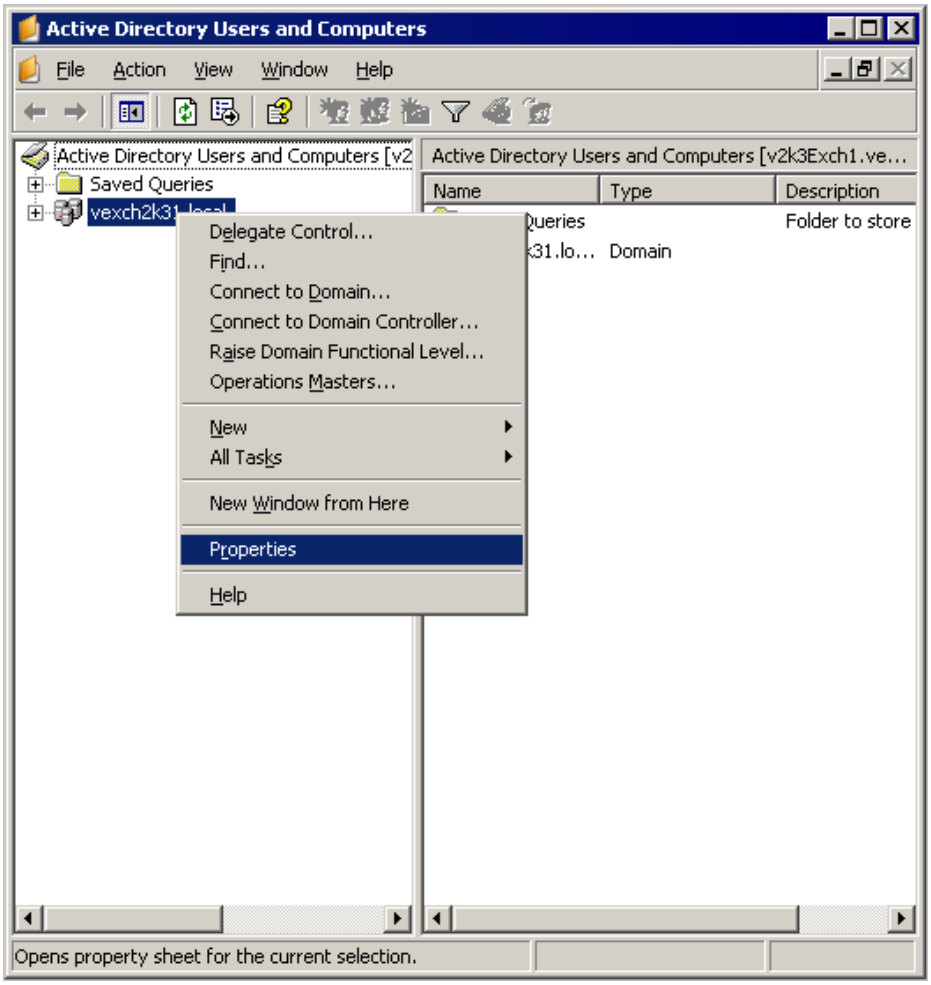
6. To finalize the installation, click on the **OK** button and reboot the computer. After the computer has restarted, **Client for Microsoft Windows** will be automatically installed.

11.4 Configuring Password Policy Settings in an Active Directory-Based Domain

NOTE: You must be logged on as a member of the Domain Admin group.

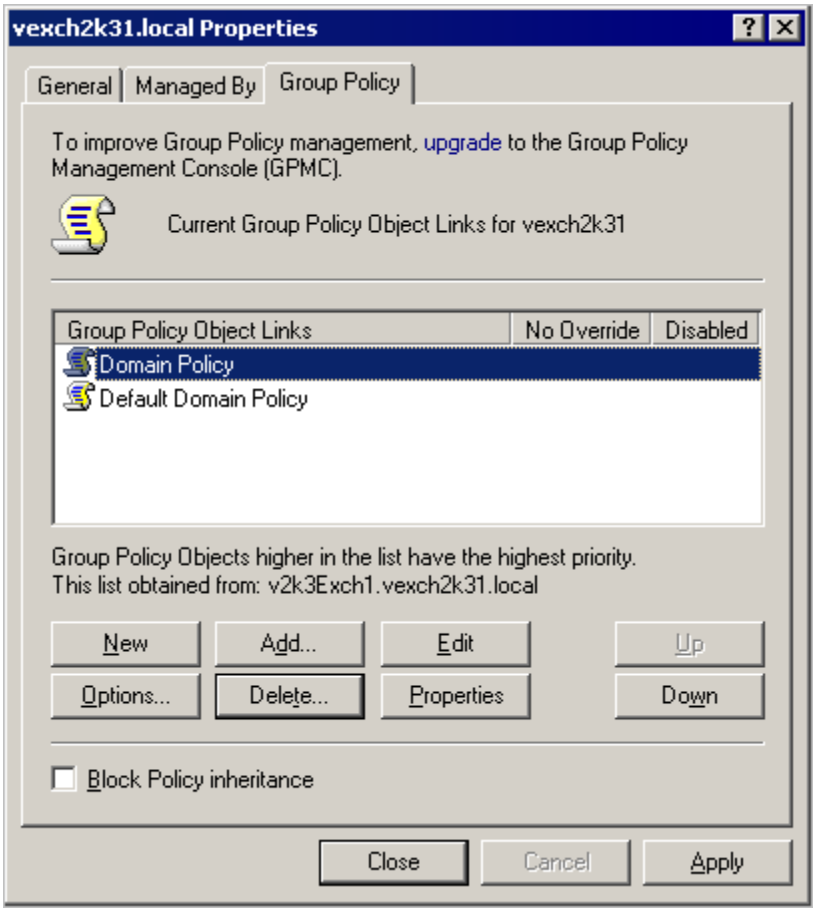
To implement password policies on network computers belonging to an Active Directory domain:

1. Navigate to the **Control Panel** and open the **Administrative Tools**.



Screenshot 114 - Active Directory Users and Computers configuration dialog

2. Open **Active Directory Users and Computers**. Right click on the root container of the domain and select **Properties**.



Screenshot 115 - 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.

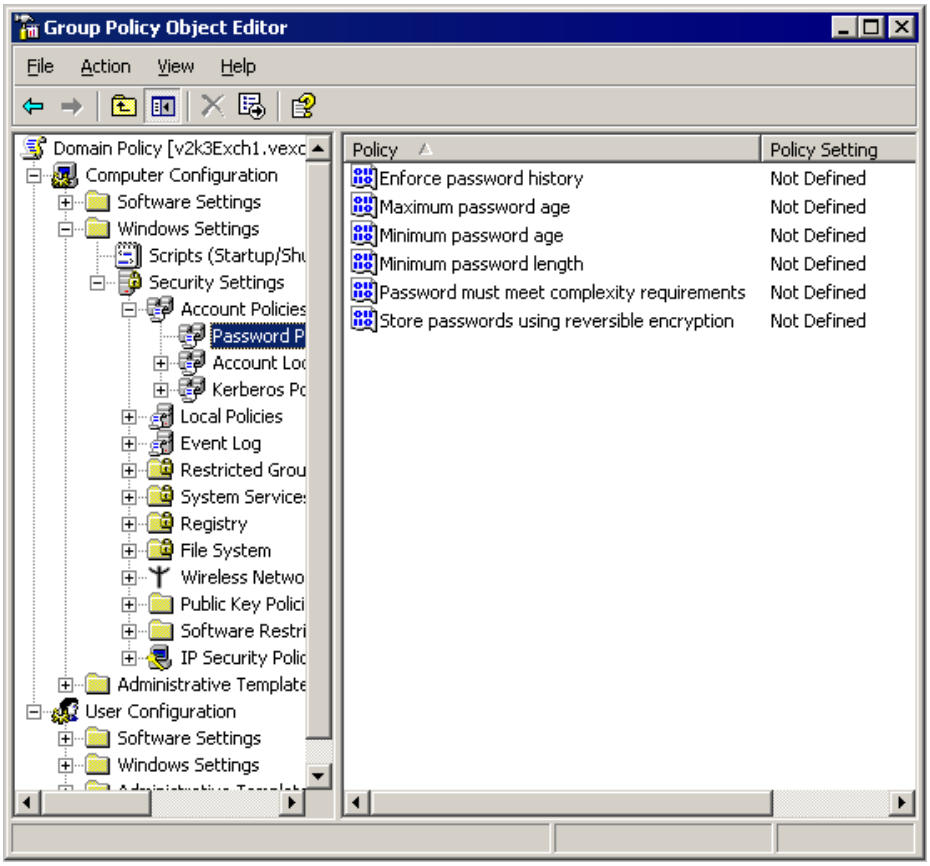
4. Specify the name of the new group policy (for example, 'Domain Policy') and then click on **Close**.

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 (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**.



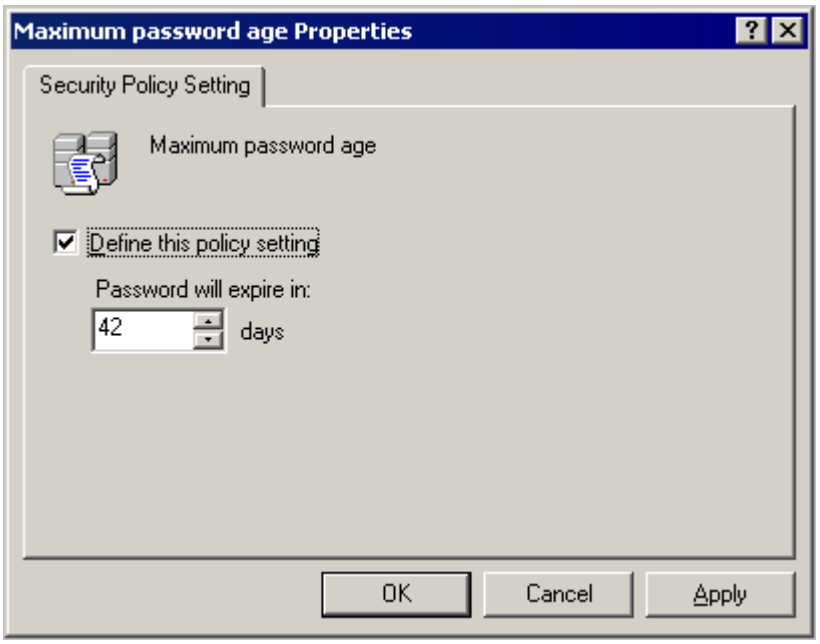
Screenshot 116 - The Group Policy Object Editor

8. Expand the **Computer Configuration** node and navigate to **Windows Settings ► Security Settings ► Account Policies ► Password Policy** folder.

Screenshot 117 - 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'.

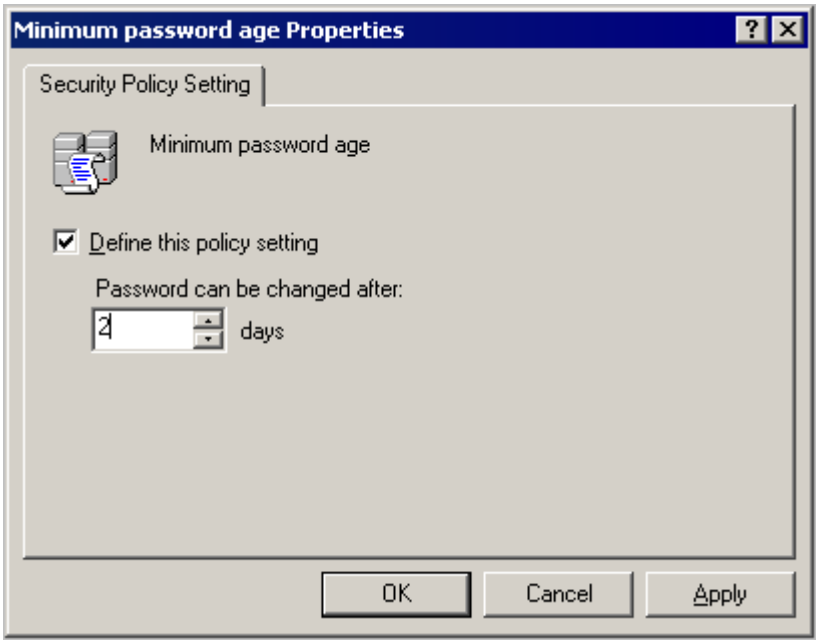
10. Click **OK** button to close the dialog.



Screenshot 118 - Configuring GPO password expiry

11. From the right pane, double-click on the **Maximum password age** policy. Select the **Define this policy setting** option and set the **Password will expire in** value to 42 days.

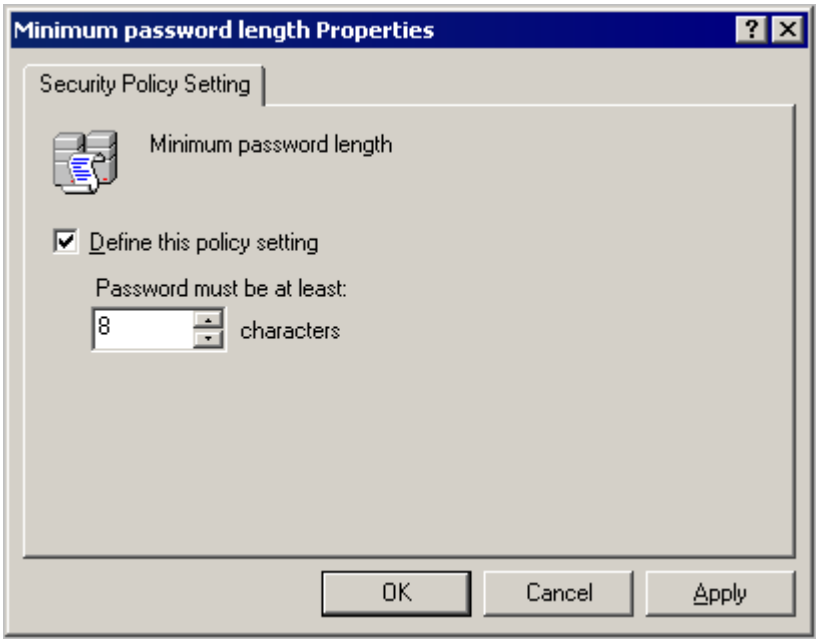
12. Click on **OK** to close the properties dialog.



Screenshot 119 - 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'.

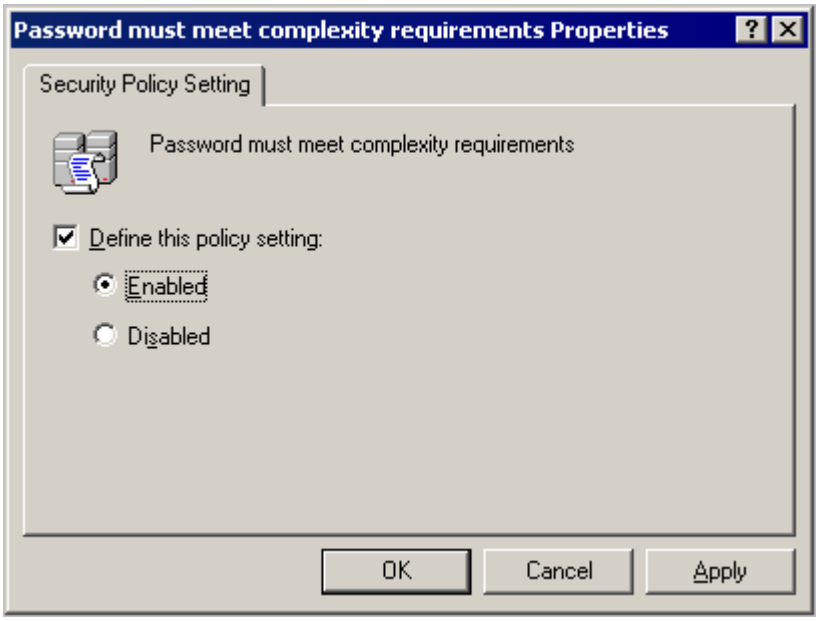
14. Click on the **OK** button to close the dialog.



Screenshot 120 - Configuring the minimum number of characters in a password

15. From the right pane, double-click on the **Minimum password length** policy. 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 121 - 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.

11.5 Viewing the Password Policy Settings of an Active Directory-Based Domain

NOTE: You must be logged on as a member of the Domain Admin 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.

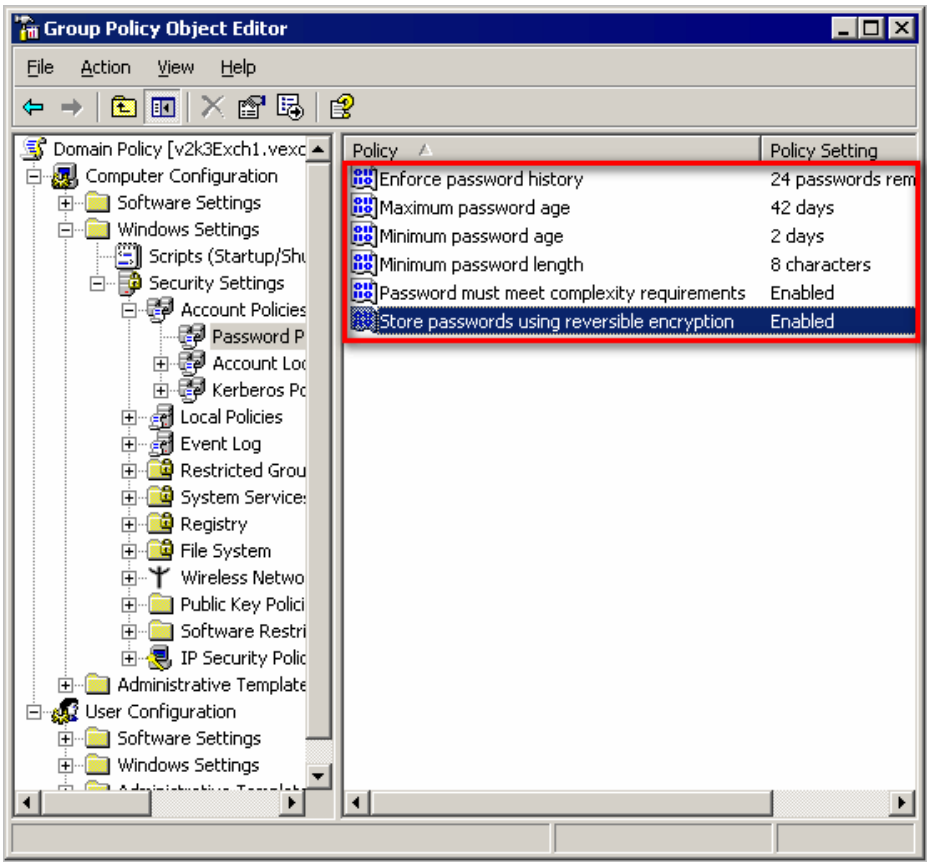
To verify password policy settings for an Active Directory domain

1. Navigate to the **Control Panel** and open the **Administrative Tools**.

2. Open **Active Directory Users and Computers**. Right click on the root container of the domain and select **Properties.**

3. Click on the **Group Policy** tab. 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 122 - Verifying the GPO settings

The password policy configuration settings, are displayed in the right pane of the GPO editor. The password policy of your GPO shall be set as follows:

- Enforce password history: 24 passwords remembered
- Maximum password age: 42 days
- Minimum password age: 2 days

- Minimum password length: 8 characters
- Password must meet complexity requirements: Enabled

12. GFI LANguard certifications

12.1 Introduction

GFI LANguard is OVAL and CVE certified.

12.2 About OVAL

Open Vulnerability and Assessment Language (OVAL™) is an international, information security, community standard to promote open and publicly available security content, and to standardize the transfer of this information across the entire spectrum of security tools and services. OVAL includes a language used to encode system details, and an assortment of content repositories held throughout the OVAL community. The language standardizes the three main steps of the assessment process:

- Representing configuration information of systems for testing
- Analyzing the system for the presence of the specified machine state (vulnerability, configuration, patch state, etc.)
- Reporting the results of this assessment.

The repositories are collections of publicly available and open content that utilize the language.

The OVAL community has developed three XML schemas to serve as the framework and vocabulary of the OVAL Language. These schemas correspond to the three steps of the assessment process:

- An OVAL System Characteristics schema for representing system information
- An OVAL Definition schema for expressing a specific machine state
- An OVAL Results schema for reporting the results of an assessment

Content written in OVAL Language is located in one of .the many repositories found within the community. One such repository, known as the OVAL Repository, is hosted by MITRE Corporation. It is the central meeting place for the OVAL Community to discuss, analyze, store, and disseminate OVAL Definitions. Each definition in the OVAL Repository determines whether a specified software vulnerability, configuration issue, program, or patch is present on a system.

The information security community contributes to the development of OVAL by participating in the creation of the OVAL Language on the OVAL Developers Forum and by writing definitions for the OVAL Repository through the OVAL Community Forum. An OVAL Board consisting of representatives from a broad spectrum of industry, academia, and government organizations from around the world oversees and approves the OVAL Language and monitors the posting of the definitions hosted on the OVAL Web site. This means that the

OVAL, which is funded by US-CERT at the U.S. Department of Homeland Security for the benefit of the community, reflects the insights and combined expertise of the broadest possible collection of security and system administration professionals worldwide.

12.2.1 GFI LANguard 9.0 OVAL Support

GFI LANguard 9.0 supports all checks defined in the XML file issued by OVAL, with the exception of HP-UX checks.

GFI LANguard 9.0 does not support HP-UX based machines and therefore it is beyond the scope of this product to include these checks within its check definition database.

12.2.2 About OVAL Compatibility

OVAL Compatibility is a program established to develop consistency within the security community regarding the use and implementation of OVAL. The main goal of the compatibility program is to create a set of guidelines that will help enforce a standard implementation. An offshoot of this is that users are able to distinguish between, and have confidence in, compatible products knowing that the implementation of OVAL coincides with the standard set forth.

For a product or service to gain official OVAL Compatibility, it must adhere to the **Requirements and Recommendations for OVAL Compatibility** and complete the formal OVAL Compatibility Process.

OVAL Compatibility means that GFI LANguard incorporates OVAL in a pre-defined, standard way and uses OVAL for communicating details of vulnerabilities, patches, security configuration settings, and other machine states.

12.2.3 Submitting OVAL listing error reports

Any issues with the GFI LANguard or the listing of the OVAL checks included with GFI LANguard should be reported to GFI through its official support lines. Refer to the Troubleshooting section within this manual for more information regarding email, phone or web forum support channels.

GFI Software Ltd will endeavor to look into any issues reported and if any inconsistency or error is ascertained, it will issue updates to fix such issues. Vulnerability check updates are usually released on monthly basis.

12.3 About CVE

CVE (Common Vulnerabilities and Exposures) is a list of standardized names for vulnerabilities and other information security exposures. Its aim is to standardize the names for all publicly known vulnerabilities and security exposures.

CVE is a dictionary which aim is to facilitate data distribution across separate vulnerability databases and security tools. CVE makes searching for information in other databases easier and should not be considered as a vulnerability database by itself.

CVE is a maintained through a community-wide collaborative effort known as the CVE Editorial Board. The Editorial Board includes representatives from numerous security-related organizations such as security tool vendors, academic institutions, and governments as well as other prominent security experts. The MITRE Corporation maintains CVE and moderates editorial board discussions.

12.3.1 About CVE Compatibility

"CVE-compatible" means that a tool, Web site, database, or service uses CVE names in a way that allows it to cross-link with other repositories that use CVE names. CVE-compatible products and services must meet the four requirements:

- CVE Searchable: A user must be able to search for vulnerabilities and related information using the CVE name.
- CVE Output: Information provided must include the related CVE name(s).
- Mapping: The repository owner must provide a mapping relative to a specific version of CVE, and must make a good faith effort to ensure accuracy of that mapping.
- Documentation: The organization's standard documentation must include a description of CVE, CVE compatibility, and the details of how its customers can use the CVE-related functionality of its product or service.

NOTE: For an in-depth understanding of CVE compatibility refer to the complete list of CVE requirements available at:

http://cve.mitre.org/compatible/requirements.html.

12.3.2 About CVE and CAN

CVE names (also called "CVE numbers," "CVE-IDs," and "CVEs") are unique, common identifiers for publicly known information security vulnerabilities. CVE names have "entry" or "candidate" status. Entry status indicates that the CVE name has been accepted to the CVE List while candidate status (also called "candidates," "candidate numbers," or "CANs") indicates that the name is under review for inclusion in the list.

Each CVE name includes the following:

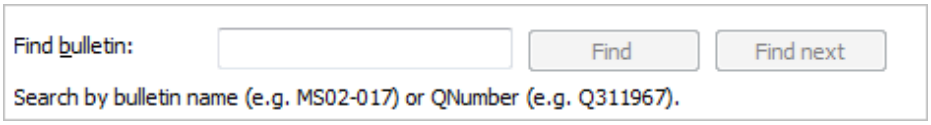
- CVE identifier number (i.e. "CVE-1999-0067").
- Indication of "entry" or "candidate" status.
- Brief description of the security vulnerability or exposure.
- Any pertinent references (i.e., vulnerability reports and advisories or OVAL-ID).

For an in-depth understanding of CVE names and CANs, refer to:

http://cve.mitre.org/cve/identifiers/index.html

12.3.3 Searching for CVE entries in GFI LANguard

CVE entries can be searched from the Scanning profiles node within the Configuration tab.



Screenshot 123 – Searching for CVE information

To search for a particular CVE bulletin:

1. Specify the bulletin name (for example, CVE-2005-2126) in the search tool entry box included at the bottom of the right pane.

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

12.3.4 Obtaining CVE names

CVE entry names can be obtained through the GFI LANguard user interface from within the Scanning profiles node within the Configuration tab. By default, the CVE ID is displayed for all the vulnerabilities that have a CVE ID.

12.3.5 Importing and exporting CVE Data

CVE data can be exported through the impex command line tool. For more information on the impex command line tool refer to the Using 'impex.exe' – the command line import and export tool section within this manual

13. Troubleshooting

13.1 Introduction

The troubleshooting chapter explains how you should go about resolving any software issues that you might encounter. It explains the use of the GFI LANguard troubleshooting wizard. The main sources of information available to users are:

- The manual – most issues can be solved by reading this manual.
- The GFI Knowledge Base – http://kbase.gfi.com
- The GFI technical support site – http://support.gfi.com
- The GFI Web forum - http://forums.gfi.com/
- Contacting the GFI technical support team by email at support@gfi.com
- Contacting the GFI technical support team using our live support service at http://support.gfi.com/livesupport.asp
- Contacting our technical support team by telephone.

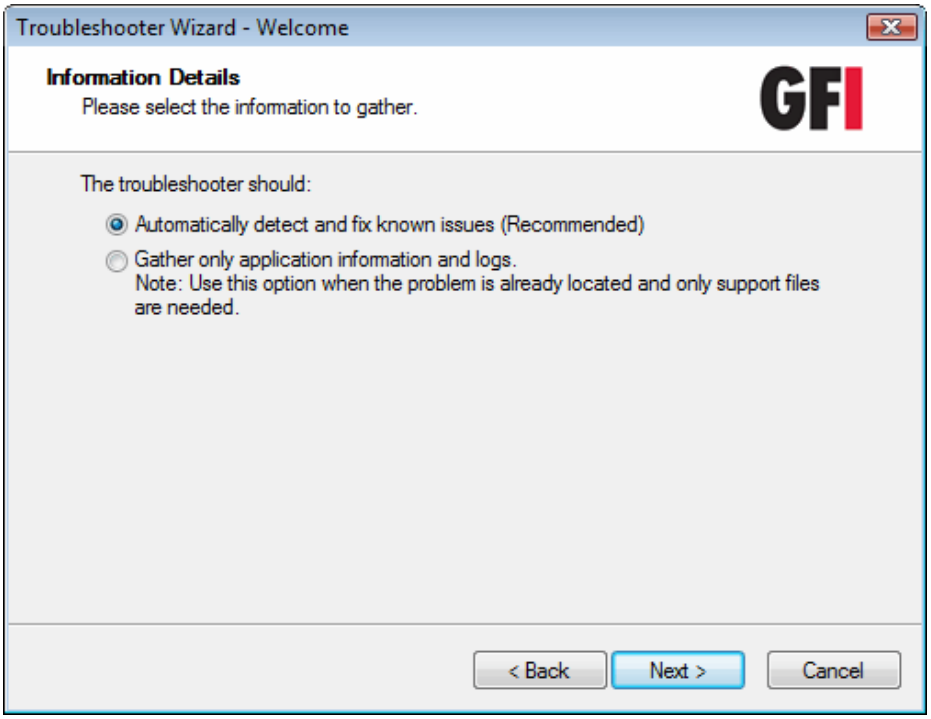
13.2 The Troubleshooting wizard

The GFI LANguard troubleshooting wizard is a tool designed to assist you when encountering technical issues related to GFI LANguard's use.

To use the GFI LANguard troubleshooting wizard:

1. Launch the troubleshooting wizard from the **Start ► Programs ► GFI LANguard 9.0 ► GFI LANguard Troubleshooter**.

2. Click **Next** in the introduction page.



Screenshot 124 - Troubleshooter wizard - Information details

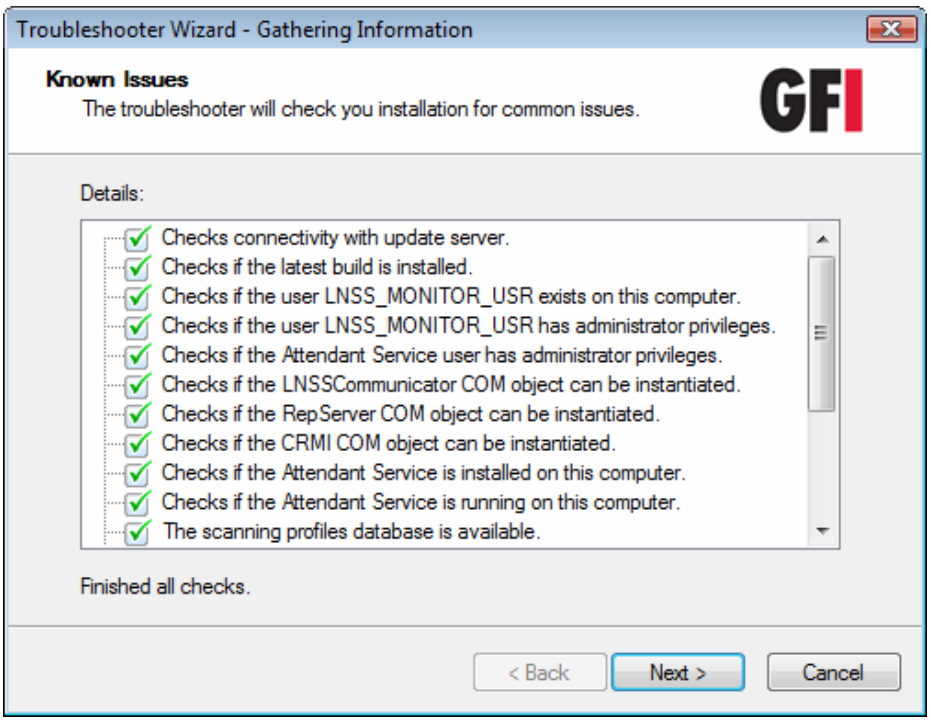
3. In the Information details page select one of the following options:

- **Automatically detect and fix known issues** – Use this option to automatically have the troubleshooting wizard detect and fix issues, which already have been notified and fixed by GFI support.

NOTE: This is the recommended option.

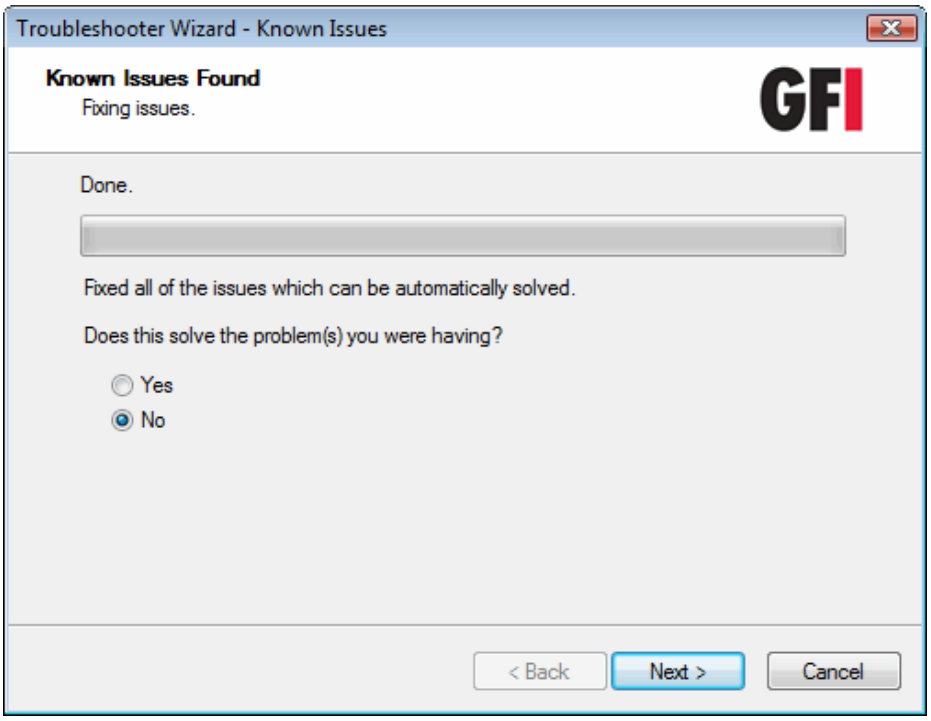
- **Gather only application information and logs** – Use this option to gather logs to send to GFI support.

4. Click **Next** to continue.



Screenshot 125 - Troubleshooter wizard - Gathering information about known issues

4. The troubleshooter wizard will retrieve all the information required to solve common issues. Click **Next** to continue.



Screenshot 126 - Troubleshooter fixed known issues

5. The troubleshooter will fix any known issues that it encounters. Select **Yes** if your problem was fixed or **No** if your problem is not solved to search the GFI Knowledge base for information.

13.3 Knowledge Base

GFI maintains a Knowledge Base, which includes answers to the most common problems. The Knowledge Base always has the most up-to-date listing of technical support questions and patches. To access the Knowledge Base, visit http://kbase.gfi.com/.

13.4 Web Forum

User to user technical support is available via the web forum. The forum can be found at: http://forums.gfi.com/.

13.5 Request technical support

If you have referred to this manual and our Knowledge Base articles, and you still cannot solve issues with the software, contact the GFI Technical Support team by filling in an online support request form or by phone.

- **Online:** Fill out the support request form on: http://support.gfi.com/supportrequestform.asp. Follow the instructions on the page to submit your support request.
- **Phone:** To obtain the correct technical support phone number for your region visit: http://www.gfi.com/company/contact.htm. We will answer your query within 24 hours or less depending on your time zone.

NOTE: Before you contact our Technical Support team ensure that you have your Customer ID available. Your Customer ID is the online

account number that is assigned to you when you first register your license keys in our Customer Area at: http://customers.gfi.com.

13.6 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, visit:

http://www.gfi.com/pages/productmailing.htm

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