

Chapter

Installing and Upgrading VPN-1

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This chapter shows how to upgrade VPN-1 NG with Application Intelligence to VPN-1 NGX R65. Upgrades are used to save Check Point product configurations, Security Policies, and objects, so that Security Administrators do not need to recreate Gateway and SmartCenter Server configurations. This chapter lists guidelines for deciding when to upgrade, versus install, later versions of VPN-1.

Objectives:

- Determine which VPN-1 upgrade strategy is appropriate, given a variety of scenarios.
- Determine VPN-1 license requirements, based on upgrade strategy.

Key Terms:

- Distributed installation
- Client/server model
- Backward compatibility
- Software Subscription services
- Contract Verification
- Trial license
- Pre-Upgrade Verification
- Safe Upgrade

Preinstallation Configuration

Before installing VPN-1 NGX R65, you should ensure that a number of preconditions exist:

1. Review the services running on the VPN-1 machine. Remove any services not running that might be considered a security risk, such as NetBEUI, FTP, HTTP servers, and so on.
2. Ensure your network and Gateway are properly configured, with special emphasis on routing. Ensure that each of the internal networks and the machine to be the Security Gateway can see each other.



Be sure routing tables are correctly defined!

3. Log in to each of the hosts, and Ping the other hosts in the internal networks and any intranets.
4. Enable IP routing/forwarding, so that VPN-1 can continue to work on Windows and SecurePlatform.



During installation on Windows Server 2003 and SecurePlatform, variables are set automatically by the installation wrapper.

5. Confirm that DNS is working properly. Can you start a Web browser on the internal network, and view a Web page outside the network?
6. Note the names and IP addresses of the Gateway's interfaces.
7. Confirm that the Gateway's name, as shown in the hosts files, corresponds to the IP address of the Gateway's external interface.
8. Isolate the computers on which you will be installing VPN-1 components from the network, so they are not accessible from other computers.

9. Verify you have the correct version of software for your OS and platform, for all VPN-1 components.

Distributed Installation

When configured in a **distributed installation**, VPN-1 implements the **client/server model**: A SmartConsole on a Windows machine runs SmartMap (in the SmartDashboard), and communicates with the SmartCenter Server running on a Windows or SecurePlatform configured machine. The configured machine controls the Gateway running on Windows or SecurePlatform, as shown below:

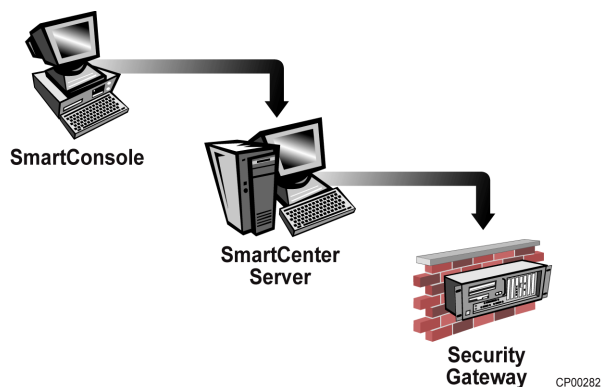


Figure 2-1: VPN-1 Client/Server Configuration

The functionality of VPN-1, as shown in the figure above, is distributed among three Check Point components. A Security Administrator working on the SmartConsole maintains the VPN-1 Security Policy and database, which reside on the SmartCenter Server. The SmartCenter Server installs the Policy on the Gateway, which secures the network.

Upgrading to VPN-1 NGX R65

VPN-1 NGX R65 upgrade tools can be found in the following locations:

- `$FWDIR/bin/upgrade_tools` directory
- <http://www.checkpoint.com/downloads/quicklinks/utilities/nginx/utilities.html>

Upgrading to NGX R65 is supported on these versions:

- VPN-1/FireWall-1 NG, including NG FP1, FP2, and FP3
- VPN-1 NG with Application Intelligence (AI), including NG with AI R54, R55, and R55W.



You cannot upgrade from FireWall-1 4.x to NGX R65 directly. To upgrade FireWall-1 versions 4.0-4.1, upgrade the installed version to NG with AI R55. Once the NG with AI R55 upgrade is complete, upgrade to NGX R65

Upgrade Guidelines

The following guidelines will help you decide whether to upgrade to or install NGX R65:

- When you want to keep your Check Point configuration, upgrade to NGX R65.
- Understand your Policy. If your Policy includes rules and objects whose purpose you do not know, install NGX R65. In this case, do not upgrade to NGX R65 from a previous version of VPN-1 or FireWall-1.

- If naming conventions for objects, rules, etc., have changed over time, there may not be an easy way to determine what these names mean. In this case, do not upgrade to NGX R65 from a previous version of VPN-1 or FireWall-1. Begin with a fresh installation of NGX R65.
- If you see a better, more logical way to organize your Check Point configuration, including rules and objects, do not upgrade. Begin with a fresh installation of NGX R65.

Upgrade Order

SmartCenter Server

Upgrade the SmartCenter Server first. Due to backward-compatibility support of previous versions, an upgraded SmartCenter Server can enforce and manage Gateways from previous versions, even though some new features may not be available to Gateways from previous versions.

Security Gateway

There are two Security Gateway upgrade methods available, SmartUpdate Upgrade and Local Upgrade: SmartUpdate Upgrade automatically distributes software packages, and remotely performs upgrades of Gateways and various OPSEC products. SmartUpdate provides a centralized means to guarantee that the latest software versions are used throughout the enterprise network. Local Upgrade performs a local upgrade on the Gateway itself.

Upgrade Export/Import

Using the Upgrade Export/Import tool allows for an off-line upgrade, minimizing the risk of downtime, as well as providing an all-in-one upgrade path. The Administrator can use the `upgrade_export` tool to create an archive of the existing VPN-1 configuration, and then store the archive off-line. The Administrator can then configure new hardware, and use the `upgrade_import` tool in the VPN-1 installation wrapper to create a second SmartCenter Server, which can be used during a scheduled outage, or set aside as a “shelf spare”. This out-of-band

configuration can also be set up in a lab environment to test the new hardware's performance, or for any possible misconfigurations or conflicts.

Upgrading via SmartUpdate

SmartUpdate provides the easiest and most efficient method to upgrade across distributed installations. Once the SmartCenter Server has been upgraded to NGX R65, the Administrator can load the upgrade packages into SmartUpdate and install the upgrade on Gateways when needed. This centralized system also reduces the management burden of having an unskilled pair of eyes and ears at the site, thereby creating potential problems during the upgrade. The management burden is further reduced, because the Administrator can manage and perform all upgrades from the location where the SmartCenter Server is installed.

VPN-1 Backward Compatibility

VPN-1 **backward compatibility** allows for earlier versions to interoperate with current releases. The Check Point backward-compatibility package is automatically installed when first installing VPN-1 software on your system, so no further configuration is required.

The SmartCenter Server is the critical piece of an upgrade, since it is the location of the Rule Base and object databases, as well as the Certificate Authority. Once the Server has been successfully upgraded, the backward-compatibility package will enable the Server to manage Gateways still running earlier versions of VPN-1 and VPN-1/FireWall-1. The Administrator can plot a staggered upgrade, planning which Gateways are upgraded to NGX R65 first, while others continue to operate at their earlier version.



Check Point recommends maintaining the SmartConsole and SmartCenter Server at the same version. A SmartCenter Server cannot manage a Gateway at a later version than itself.

Supported Versions

Backward compatibility to NGX R65 is supported on the following Gateway versions:

Release	Version
NGX	VPN-1 Power/UTM NGX R62
	VPN-1 Pro/Express NGX R61
	VPN-1 Pro/Express NGX R60A
	VPN-1 Pro/Express NGX R60

Table 2-2: Supported Versions

Release	Version
NG	VPN-1 Pro NG with AI R55P VPN-1 Pro NG with AI R55W VPN-1 Pro/Express NG with AI R55 VPN-1 Pro/Express NG with AI R54 VPN-1 Pro/Express NG FP3
Express CI	R55
GX	2.5, NGX
VSX	VSX 2.0.1 VSX NG with AI VSX NG with AI Release 2 VSX NGX
InterSpect	NGX
Connectra	NGX R62

Table 2-2: Supported Versions



NGX R65 cannot manage Gateway versions NG, NG FP1, or NG FP2.

Licensing VPN-1

Check Point requires licenses for Gateways and SmartCenter Servers. SmartConsoles do not require licenses. Every Check Point product comes with a trial license that allows unrestricted use of the product for 15 days.

Obtaining Licenses

To upgrade to NGX R65, product versions prior to NGX R60 require a new NGX license. The new NGX license is available from version NGX R60 on.

The license-upgrade procedure can be performed if you have purchased any of the Enterprise **Software Subscription services**. License upgrades will fail for products and accounts for which you do not have a software subscription.

You can manage your accounts, licenses, and Enterprise Support program coverage from the **My Support Programs** link in the User Center at:

<http://usercenter.checkpoint.com>

A license upgrade is performed with an easy-to-use tool that automatically upgrades both locally and centrally managed licenses. Using the tool, you can upgrade all licenses in the entire managed system. License upgrades can also be performed manually, per license, in the User Center:

The automatic license-upgrade tool enables you to:

- View the status of the currently installed licenses. On a SmartCenter Server (or a CMA for Check Point Provider-1), you can also view the licenses in the SmartUpdate License Repository.
- Simulate the license-upgrade process.
- Perform the actual license-upgrade process.

The license-upgrade tool is available in the following locations:

- On the NGX product CD at `<Specific_platform>`
- On the Check Point download site at:
http://www.checkpoint.com/downloads/quicklinks/utilities/ngx/license_upgrade.html
- As part of the NGX R65 installation, at `$CPDIR/bin`

Before performing the license upgrade, Check Point recommends that you simulate the license upgrade. This enables you to find and solve potential problems in upgrading specific licenses. The simulation is an exact replica of the license-upgrade process. It sends existing licenses to the User Center Web site to verify that the upgrade is possible. However, no upgrade is performed and no new licenses are returned. Any upgrade error messages are displayed and available in a log file, for troubleshooting.

During the license upgrade, all eligible licenses are gathered and sent in SSL encrypted format to the User Center. Upgraded licenses are returned from the User Center, and automatically installed. The license upgrade process adds any NGX R65 licenses. Old and invalid licenses (e.g., evaluation licenses or licenses that pertain to IP addresses no longer in use) remain untouched.

When run on a SmartCenter Server (or CMA for Provider-1), the license-upgrade process also handles licenses in the SmartUpdate License Repository. After the software upgrade, SmartUpdate is used to attach the new NGX R65 licenses to the Gateways.

NGX R65 introduces an additional infrastructure that enables the use of management plug-ins. The new plug-in architecture introduces the ability to dynamically add new features and support for new products. When upgrading to NGX R65, for example, you are given the opportunity to install the Connectra NGX management plug-in, which enables the central management of Connectra NGX R62CM Gateways.

Supported Upgrade Paths

The following management versions can be upgraded to SmartCenter Server NGX R65:

Release	Version
NGX	VPN-1 Power/UTM NGX R62 VPN-1 Pro/Express NGX R61 VPN-1 Pro/Express NGX R60A VPN-1 Pro/Express NGX R60
NG	VPN-1 Pro NG with AI R55W VPN-1 Pro/Express NG with AI R55 VPN-1 Pro/Express NG with AI R54 VPN-1 Pro/Express NG FP3
Express CI	R57 (Advanced Upgrade only)
GX	2.5
VSX	VSX 2.0.1 VSX NG with AI VSX NG with AI Release 2 VSX NGX

Table 2-3: Supported Upgrade Paths

Contract Verification

Contract Verification is now an integral part of the Check Point licensing scheme. Before upgrading to the latest version, licensing agreements are verified through the User Center. Before upgrading a Gateway or SmartCenter Server to NGX R65, you need to have a valid support contract that includes software upgrades and major releases registered to your Check Point User Center account. The contract file is stored on the SmartCenter Server and downloaded to VPN-1/UTM Gateways during the upgrade process. By verifying your status with the User Center, the contract file enables you to easily remain compliant with current Check Point licensing standards.

If you have Internet access and a valid user account, you can download a contract file directly from the User Center. If the server being upgraded does not have Internet access, download the contract from a machine with Internet access, and then import the contract locally.

Performing License Upgrade

There are two methods for upgrading licenses to NGX R65 in a VPN-1 Power/UTM deployment. The method of choice depends on how you manage your licenses:

- Centrally, from the SmartCenter Server by means of SmartUpdate
- Locally at the Check Point machine

For both methods, the upgrade is performed using the `licence_upgrade` tool. If you use SmartUpdate to manage your licenses, you can update all licenses in your managed systems with a single procedure.

Check Point highly recommends you perform the license upgrade before performing any software upgrade. This ensures that the products continue to function after the software upgrade. However, if necessary, the software upgrade can be performed first.

License-Management Method	License Upgrade for ...	Licenses Upgraded
Centrally managed using SmartUpdate	Entire managed system (Run upgrade tool on SmartCenter Server.)	Local-machine licenses (for SmartCenter Server) License Repository (for Gateways)
Locally managed	Gateway	Local-machine licenses
Locally managed	SmartCenter Server	Local-machine licenses
Locally managed	Stand-alone Gateway deployment, containing both a SmartCenter Server and Gateway (that manages no remote Gateways)	Local-machine licenses (for SmartCenter Server and Gateway)

Table 2-4: License Management

Trial Licenses

Every Check Point product comes with a **trial license** that allows unrestricted use of the product for 15 days.

Pre-Upgrade Considerations

Pre-Upgrade Verification Tool

Use of the Pre-Upgrade Verification Tool can reduce the risk of incompatibility with the deployment to NGX R65. It is used to test the current SmartCenter Server prior to upgrading to NGX R65. The Pre-Upgrade Verification Tool produces a detailed report indicating the appropriate actions that should be taken before performing an upgrade to NGX R65.

Web Intelligence License Enforcement

A Gateway or Gateway Cluster requires a Web Intelligence license, if it enforces one or more of the following protections:

- Malicious Code Protector
- LDAP Injection
- SQL Injection
- Command Injection
- Directory Listing
- Error Concealment
- ASCII Only Request
- Header Rejection
- HTTP Methods

The actual license required depends on the number of Web servers protected by the Gateway or gateway cluster. For NGX R60 and later versions, if the correct license is not installed, it will not be possible to install a Policy on any Gateway.

Upgrading on SecurePlatform

Upgrading to NGX R65 on a SecurePlatform operating system for versions prior to NGX R60 requires upgrading both the operating system and the installed software products. The upgrade of all installed components (operating system and software packages) occurs as a single process.

Upgrading SmartCenter Server

Upgrades can be performed incrementally so that you do not have to upgrade the SmartCenter Server and all Gateways at the same time. Once the SmartCenter Server is upgraded, you can still manage Gateways from the previous version, even though the Gateways may not support the new features. You can upgrade the Gateways at your convenience.

Use of the Pre-Upgrade Verification Tool can reduce the risk of incompatibility with the deployment to NGX R65. It is used to test the current SmartCenter Server prior to upgrading to NGX R65. The Pre-Upgrade Verification Tool produces a detailed report indicating the appropriate actions that should be taken before performing an upgrade to NGX R65.

There are two upgrade methods available for the SmartCenter Server:

- **Upgrade your Production SmartCenter Server** — Perform the upgrade process on the production SmartCenter Server.
- **Migrate and Upgrade to a New SmartCenter Server** — Perform a migration process of the currently installed version to a new Server, and upgrade the migrated system.

Using the Pre-Upgrade Verification Tool

Pre-Upgrade Verification runs automatically (or manually if desired) during the SmartCenter upgrade. Pre-Upgrade Verification performs a compatibility analysis of the currently installed SmartCenter Server and its current configuration. A detailed report is provided, indicating appropriate actions that should be taken before and after the upgrade process. The tool can also be used manually.

Pre-Upgrade Verification Tool usage:

```
pre_upgrade_verifier.exe -p SmartCenterPath -c CurrentVersion -t
TargetVersion [-f FileName] [-w]
```

or

```
pre_upgrade_verifier.exe -p SmartCenterPath -c CurrentVersion -i[-f
FileName][-w]
```

Parameters

-p	Path of the installed SmartCenter Server (FWDIR)
-c	Currently installed version
-t	Target version
-i	Checks originality of INSPECT files only
-f	Redirects standard output to a file
-w	Web format file

Where the target version is NGX R65, and the currently installed version is one of the following:

For Release	Version Is
NGX	NGX_R62 NGX_R61 NGX_R60A NGX_R60
NG	NG_R55 NG_R55P NG_R54 NG_FP3 NG
GX	GX_2.5

Table 2-5: Versions

For Release	Version Is
VSX	VSX_2.0.1 VSX_NG_AI VSX_NG_AI_Release_2

Table 2-5: Versions

Action items to be addressed as part of the preupgrade process:

- **Errors** — items that must be repaired before performing the upgrade; if you proceed with the upgrade while errors exist, the upgrade will fail.
- **Warnings** — items that you should consider repairing before performing the upgrade

Gateway Upgrade

There are two upgrade methods available:

- **SmartUpdate Upgrade** — allows you to centrally upgrade and manage Check Point software and licenses
- **Local Upgrade** — performs a local upgrade on the Gateway itself.

Gateway Upgrade with SmartUpdate

SmartUpdate is an optional component for VPN-1 that automatically distributes software packages and remotely performs upgrades of Gateways and various OPSEC products. It provides a centralized means to guarantee that the latest software versions are used throughout the enterprise network. SmartUpdate takes time-consuming tasks, which could otherwise be performed only by experts, and turns them into simple point-and-click operations.

The following products can be upgraded to NGX R65:

- VPN-1 Pro Gateways
- SecurePlatform
- Performance Pack
- SmartView Monitor (as part of the NGX R65 software package)
- Eventia Reporter
- UserAuthority Server
- Policy Server (as part of the NGX R65 software package)
- Check Point QoS (as part of the NGX R65 software package)
- Nokia OS
- UTM-1