

NCP Virtual Secure Enterprise VPN Server

Release Notes



Service Release: 12.16 r48658

Date: April 2021

Prerequisites

Virtualization Platforms

The following virtualization platforms are supported with this release:

- VMware vSphere Hypervisor (ESXi) 6.7.0
- VMware Workstation Version 15.5
- Microsoft Hyper-V for Windows Server 2019
- Debian KVM version 10.6

Central Management

- Secure Enterprise Management Server version 5.30 or higher
- Management Console version 5.30 or higher
- Management Plug-in Server Configuration Version 12.13 or higher
- Management Plug-in License Management Version 12.01 or higher

1. New Features and Enhancements

As of this release, SSL VPN can no longer be used

As of this release, SSL VPN, i.e. the web proxy, thin client and fat client functionalities contained therein, can no longer be executed or used. In the next major release 13.0, the SSL VPN configuration will be removed from the configuration.

2. Improvements / Problems Resolved

Crash of the NCP Secure Enterprise VPN Server

If special data packets were sent to the HTTPS port of the NCP Secure Enterprise VPN Server, this led to a crash of the integrated web server in the area of the SSL VPN functionality and thus to the termination of all other services that were running. This problem was solved by deactivating the integrated web server and thus SSL VPN.

Problem with registering client IP addresses in the DNS system

If the NCP Secure Enterprise VPN Server is operated in NAT mode, the PTR record in the DNS system is

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not set correctly. This problem has been resolved.

Bugfix in OpenSSL library regarding [CVE-2020-1971]

The OpenSSL library used was vulnerable to the security hole [CVE-2020-1971]. This occurred in the area of certificate checking via CRL. However, both the certificate and the CRL had to be compromised for this. This problem has been resolved.

Crash after changing the IP address of the virtual adapter

Under certain circumstances the NCP Secure Enterprise VPN Server crashed after changing the IP address of the virtual adapter. This problem has been resolved.

Troubleshooting in the area of SNMP

The SNMP query of link profiles or RADIUS links was incorrect. This problem has been resolved.

3. Known Issues

Web Interface and Microsoft Edge

When using the Microsoft Edge web browser, at least EdgeHTML 18.17763 is required.

System update fails

During a system update, new kernel versions of the underlying operating system may be downloaded and installed on the boot volume. Older kernel versions are retained in `/boot/`. If the storage space of the boot volume is too small for a new kernel version, the following message is output:
An error occurred. Consider looking at the Operating System Log.

The following message can be found in the operating system log:

```
vsesh-sentinel[626]: E: Sub-process /usr/bin/dpkg returned an error code (1)
vsesh-sentinel[626]: E: Unresolved dependencies. Please try "apt-get -f install" without packages (or provide solution).
ncpsrvmgmd[1108]: SYSTEM_CFG: gRPC: Error when executing command
```

In this case, older kernel versions must be removed from `/boot/` with the command `sudo apt-get purge linux-image-4.12.0-12-generic`. Please ensure that you keep the latest / current kernel version and its previous version on the system.

Now run `apt --fix-broken install` and start the update process again.

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Service Release: 12.15 r48389

Date: October 2020

Prerequisites

Virtualization Platforms

The following virtualization platforms are supported with this release:

- VMware vSphere Hypervisor (ESXi) 7.0
- VMware Workstation Version 15.5
- Microsoft Hyper-V for Windows Server 2019
- Debian KVM version 10.6

Central Management

- Secure Enterprise Management Server version 5.30 or higher
- Management Console version 5.30 or higher
- Management Plug-in Server Configuration Version 12.13 or higher
- Management Plug-in License Management Version 12.01 or higher

1. New Features and Enhancements

None.

2. Improvements / Problems Resolved

Linux security patches

The Linux kernel used in the base operating system has been upgraded to version 4.9.210-1 + deb9u1.

This contains the following security patches:

CVE-2019-2182, CVE-2019-5108, CVE-2019-19319, CVE-2019-19462
CVE-2019-19768, CVE-2019-20806, CVE-2019-20811, CVE-2020-0543
CVE-2020-2732, CVE-2020-8428, CVE-2020-8647, CVE-2020-8648
CVE-2020-8649, CVE-2020-9383, CVE-2020-10711, CVE-2020-10732
CVE-2020-10751, CVE-2020-10757, CVE-2020-10942, CVE-2020-11494
CVE-2020-11565, CVE-2020-11608, CVE-2020-11609, CVE-2020-11668
CVE-2020-12114, CVE-2020-12464, CVE-2020-12652, CVE-2020-12653

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CVE-2020-12654, CVE-2020-12770, CVE-2020-13143, CVE-2020-3810

Compatibility with macmon NAC

A problem in RADIUS communication with macmon NAC has been fixed.

Routing Information Protocol (RIP) advertisements

A problem has been fixed that, under certain conditions, incorrect RIP advertisements were sent out for VLAN forwarding.

Gateway - gateway communication

In the case of VPN connections to gateways from other manufacturers, connection interruptions have occurred sporadically. This bug has been fixed.

3. Known Issues

Web Interface and Microsoft Edge

When using the Microsoft Edge web browser, at least EdgeHTML 18.17763 is required.

System update fails

During a system update, new kernel versions of the underlying operating system may be downloaded and installed on the boot volume. Older kernel versions are retained in `/boot/`. If the storage space of the boot volume is too small for a new kernel version, the following message is output:

An error occurred. Consider looking at the Operating System Log.

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```
vsesh-sentinel[626]: E: Sub-process /usr/bin/dpkg returned an error code (1)
```

```
vsesh-sentinel[626]: E: Unresolved dependencies. Please try "apt-get -f install" without packages (or provide solution).
```

```
ncpsrvmgmd[1108]: SYSTEM_CFG: gRPC: Error when executing command
```

In this case, older kernel versions must be removed from `/boot/` with the command `sudo apt-get purge linux-image-4.12.0-12-generic`. Please ensure that you keep the latest / current

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kernel version and its previous version on the system.

Now run `apt --fix-broken install` and start the update process again.

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Service Release: 12.13 r47679

Date: June 2020

Prerequisites

Virtualization Platforms

The following virtualization platforms are supported with this release:

- VMware vSphere Hypervisor (ESXi) 7.0
- VMware Workstation Version 15.5
- Microsoft Hyper-V for Windows Server 2016 and 2019
- Debian KVM version 10.3

Central Management

- Secure Enterprise Management Server version 5.30 or higher
- Management Console version 5.30 or higher
- Management Plug-in Server Configuration Version 12.13 or higher
- Management Plug-in License Management Version 12.01

1. New Features and Enhancements

Compatibility with macmon NAC

With the transmission of the client's local MAC address via the RADIUS attribute "NAS port type", this can be evaluated in macmon NAC.

4. Improvements / Problems Resolved

NCP Package Update

The update feature contained in the NCP Virtual Secure Enterprise VPN Server includes updates for the operating system and the NCP software. Both are updated from a repository hosted by NCP. From May 4, 2020, the NCP software could no longer be updated due to an expired certificate. Security patches for the operating system were not affected. This issue has been resolved.

To reactivate updates for the older versions of NCP software up to 12.12, it is sufficient to execute the following command from a root shell:

```
apt-key add /etc/apt/pubkeys/debupdates_2025.key.pub
```

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Licensed Tunnel Count not Transferred from Virtual HA Server

If the NCP Virtual Secure Enterprise VPN Server is operated with the setting "Use VPN Gateway in HA LB Mode", the licensed tunnel count in virtual HA Server was not transferred to the NCP Virtual Secure Enterprise VPN Server. The licensed tunnel count for NCP Virtual Secure Enterprise VPN Server was used instead. This issue has been resolved.

Licensed Tunnel Count Only Applies after the NCP Virtual Secure Enterprise VPN Server Restarts

Error Verifying License After Update

After updating from an older version 12.10 to 12.12, the installed license could no longer be checked and was therefore no longer valid. This issue has been resolved.

Error IPNAT – No Free Dynamic Ports

If NAT is activated, the virtual IP addresses of the VPN clients are converted to the IP address of the gateway. The previous limit of 10,000 dynamic ports for managing the connected VPN clients has been increased to 30,000 dynamic ports.

Stability improvements of the ncpwsupd service as well as in the area of VPN Path Finder

5. Known Issues

None.



Service Release: 12.12 r46805

Date: January 2020

Prerequisites

Virtualization Platforms

The following virtualization platforms are supported with this release:

- VMware vSphere Hypervisor (ESXi) 6.7
- VMware Workstation Version 15.1
- Microsoft Hyper-V for Windows Server 2016 and 2019
- Debian KVM version 9.9.0

Central Management

- Secure Enterprise Management Server version 5.20 or higher
- Management Console version 5.20 or higher
- Management Plug-in Server Configuration Version 12.10 or higher
- Management Plug-in License Management Version 11.30

1. New Features and Enhancements

None.

6. Improvements / Problems Resolved

Installing SNMPWalk after Initial Installation

SNMPWalk can be installed from the repository using the shell command `apt install snmp`.

Displaying the MAC address of a network adapter during the initial installation

For easier selection of the correct network adapter during the initial installation of NCP Virtual Secure Enterprise VPN Server, the MAC address of the available network adapters can now be displayed.

Deactivate Firewall via `vses-network-config`

If an error is made during the commissioning of the NCP Virtual Secure Enterprise VPN Server, it is possible that an administrator can accidentally block their own access to the NCP Virtual Secure Enterprise VPN Server or its configuration. If this should occur, administrators can now disable the firewall in the file `/opt/ncp/vses/bin/vses-network-config`.

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Security Updates

The following vulnerabilities can be resolved by installing security updates:

- CVE-2018-12207
- CVE-2019-0154
- CVE-2019-0155
- CVE-2019-11135
- CVE-2019-18408

Log Output on the Management Server During System Update

The log output on the NCP Secure Enterprise Management Server was incomplete during a system update of the NCP Virtual Secure Enterprise VPN Server. This issue has been resolved.

DNS Configuration

During reinstallation, incorrect entries were made in the file `/etc/resolv.conf`. Static DNS entries were also not included in the `resolv.conf` file.

Fixed issue with configured Routing tables and NAT

Configured static routes were not applied correctly.

This issue has been resolved.

Issue Resolved in Installation Routine

Restart of the NCP Secure Enterprise HA Server

If a restart command is sent to the NCP Secure High Availability Server via the NCP Secure Enterprise Management, this led to a shutdown of the NCP Secure High Availability Server. This issue has been resolved.

7. Known Issues

Update from Version 12.00 to 12.10 Not Possible

The update of version 12.00 of the NCP Virtual Secure Enterprise VPN Server to the current version 12.10 fails. Alternatively, this problem can also be solved as described below:

1. Log on to the console of the NCP Virtual Secure Enterprise VPN Server with the `root` user and your password.
2. Type `apt update && apt upgrade` on the command line.

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Service Release: 12.10 r44399

Date: June 2019

Prerequisites

Virtualization Platforms

The following virtualization platforms are supported with this release:

- VMware vSphere Hypervisor (ESXi) 6.7
- Microsoft Hyper-V for Windows Server 2016 and 2019
- Debian KVM version 9.9.0

Central Management

- Secure Enterprise Management Server version 5.20 or higher
- Management Console version 5.20 or higher
- Management Plug-in Server Configuration Version 12.10 or higher
- Management Plug-in License Management Version 11.30

1. New Features and Enhancements

Support of the NCP Secure Enterprise Management Server

The NCP Virtual Secure Enterprise VPN Server can be centrally managed with the NCP Secure Enterprise Management Server. Configurations and certificates can be distributed.

IPv4 / IPv6 Dual Stack Support

Both the IPv4 and IPv6 protocols are supported within the VPN tunnel.

Web Interface Notifications

Important information is highlighted in the web interface.

EAP Pass-Through

If a VPN client uses the EAP protocol to authenticate the user, this EAP data can be forwarded to another authentication service such as Microsoft Active Directory or FreeRADIUS.

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Configuration of an HTTP(S) Proxy

The NCP Virtual Secure Enterprise VPN Server requires access to `licensing.ncp-e.com` and `packages.ncp-e.com` via HTTP(S) for both subscription licensing and update functionality. If HTTP(S) proxy support is necessary for this communication, it can be configured in the console interface from this version on.

Policy Lifetime Configuration

Within a link profile it is now possible to configure the validity period of IPsec or IKE policies for outgoing connections.

8. Improvements / Problems Resolved

VMware Tools Included in Delivery

The open source variant of VMware tools recommended by VMware is included in the NCP Virtual Secure Enterprise VPN Server and is active when using the VMware virtualization environment.

Message in Console Interface

If there is no network interface configured in the virtual environment that is optimized for this purpose (`vmxnet3`, `virtio-net`), the console interface displays a message to this effect.

Message in the Web Interface

In the web interface of the NCP Virtual Secure Enterprise VPN Server, the existing network interfaces are configured as internal or external interfaces. To avoid misconfiguration, a message has been added here. Please note that the web interface can only be configured via the internal network.

Setting the Priority in the Operating System Log and Troubleshooting

The input of digits for the configuration of the priority has been replaced by a drop-down list. Furthermore, an internal error has been fixed.

Destination Address for Subscription Licensing

The destination address required for subscription licensing has been changed to `licensing.ncp-e.com`. The previously used destination address `actsrv1.ncp.de` is still valid.

NTP server Set in Default Configuration

Starting with this version, an NTP server is set within the initial configuration.



Troubleshooting Subscription Licensing via External Network Interface

If communication via a proxy server and a configured external interface took place for subscription licensing, a connection error was displayed. This issue has been resolved.

Error when Activating Deactivated Services

If a deactivated service was activated within the web interface, this failed. This issue has been resolved.

Automatic Deletion of Core Dumps

To prevent the space required on the storage medium by core dumps from becoming too large, core dumps are deleted from 20 or a maximum age of 30 days when a new core dump is created. Core dumps are also stored in compressed form.

Enhancement of System Information in Crash Reports

A list of installed packages has been added to the system information within the crash reports.

Improved Compatibility with Third-party Authentication Solutions

The content of the suffix field within the domain group configuration can be sent as a RADIUS NAS identifier to third-party authentication solutions.

Troubleshooting SNMP

9. Known Issues

Update from Version 12.00 to 12.10 Not Possible

The update of version 12.00 of the NCP Virtual Secure Enterprise VPN Server to the current version 12.10 fails. Alternatively, this problem can also be solved as described below:

3. Log on to the console of the NCP Virtual Secure Enterprise VPN Server with the `root` user and your password.
4. Type `apt update && apt upgrade` on the command line.

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Service Release: 12.02 r43975

Date: May 2019

Prerequisites

Virtual environments

The following virtualization platforms are supported with this release:

- VMware vSphere Hypervisor (ESXi)
- Microsoft Hyper-V for Windows Server 2017 and 2019 *
- KVM *

* Available from version 12.1x

1. New Features and Enhancements

None.

10. Improvements / Problems Resolved

Troubleshooting the Update Feature

The update feature contained in the NCP Virtual Secure Enterprise VPN Server includes updates for the operating system and the NCP components. In case of a kernel update for the operating system the update process didn't execute correctly. This problem has been resolved.

11. Known Issues

None.

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Service Release: 12.01 r43907

Date: May 2019

Prerequisites

Virtual environments

The following virtualization platforms are supported with this release:

- VMware vSphere Hypervisor (ESXi)
- Microsoft Hyper-V for Windows Server 2017 and 2019 *
- KVM *

* Available from version 12.1x

1. New Features and Enhancements

None.

12. Improvements / Problems Resolved

Troubleshooting the Update Feature

The update feature contained in the NCP Virtual Secure Enterprise VPN Server includes updates for the operating system and the NCP components. The update feature stopped working correctly following a certain period after installation. This problem has been resolved.

Alternatively, this problem can also be solved as described below, so that exporting the configuration, reinstalling the software and importing the existing configuration can be avoided.

1. Log on to the console of the NCP Virtual Secure Enterprise VPN Server with the `root` user and your password.
2. Open the configuration file `/etc/apt/apt.conf.d/00ncp` in a text editor.
3. Add the following line to the end of the file

```
Acquire::Check-Valid-Until 0;
```

and save the file.



13. Known Issues

None.

14. Getting Help for the NCP Virtual Secure Enterprise VPN Server

To ensure that you always have the latest information about NCP's products, always check the NCP website at:

<https://www.ncp-e.com/en/products/centrally-managed-vpn-solution/gateway/>

15. Features of the NCP Virtual Secure Enterprise VPN Server

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General

Virtual Appliance	Virtual appliance with hardened operating system; available as an ISO image for installation within a virtual environment e.g. VMware vSphere Hypervisor (ESXi) (Microsoft Hyper-V for Windows Server 2017/2019 and KVM are under development)
Management	The NCP Secure Enterprise Management VPN Server Plug-in or the web interface are used to configure and manage the server (available with version 12.1x or newer).
HA Server	Operation of several NCP Virtual Secure Enterprise VPN Servers in a load balancing or failsafe network
Endpoint Security* (Network Access Control)	Endpoint policy enforcement for incoming connections Verification of predefined, security-relevant client parameters. Measures in the event of target/actual deviations in IPsec VPN: <ul style="list-style-type: none">• Disconnect or continue in the quarantine zone with instructions for action (message box) or start of external applications (e.g. virus scanner update), recording events in log files. (Please refer to the Secure Enterprise Management data sheet for more information.)
Dynamic DNS (DynDNS)	Connection set up via Internet with dynamic IP addresses. Registration of each current IP address with an external Dynamic DNS provider. In this case the VPN tunnel is established via name assignment. (The VPN client must support DNS resolution; this is supported by NCP Secure Clients.)
DDNS	Connected VPN clients are registered with the domain name server via Dynamic DNS (DDNS), meaning that VPN clients with dynamic IPs can be reached via a (permanent) name.
Network Protocols	IP, VLAN support
Multi-Tenancy*	Group capability; support of max. 256 domain groups (i.e. configuration of: authentication, forwarding, filter groups, IP pools, bandwidth management) Multiple Server Certificates <ul style="list-style-type: none">• Alternative default certificates can be configured for other domain groups.• The Virtual Secure Enterprise VPN Server can select the most suitable certificate based on the client's request (for example the certificate with the longest validity period)
User Administration	Local user administration; OTP server; RADIUS; LDAP, Novell NDS, MS Active Directory Services
Statistics and Logging	Detailed statistics, logging functionality, sending SYSLOG messages

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FIPS Inside

The IPsec client integrates cryptographic algorithms based on the FIPS standard. The embedded cryptographic module, containing the corresponding algorithms has been validated as conformant to FIPS 140-2 (Certificate #1747).

FIPS conformance will always be maintained when the following algorithms are used for set up and encryption of a VPN connection:

- Diffie Hellman-Group: Group 2 or higher (DH starting from a length of 1024 bits)
- Hash algorithms: SHA1, SHA 256, SHA 384 or SHA 512 bits
- Encryption algorithms: AES 128, 192 and 256 bits or Triple DES

Client/User Authentication Processes

OTP token, certificates (X.509 v.3): User and hardware certificates (IPsec), user name and password (XAUTH)

Certificates (X.509 v.3)

Server Certificates

It is possible to use certificates which are provided via the following interfaces: PKCS#11 interface for encryption tokens (USB and smart cards); PKCS#12 interface for private keys in soft certificates

Revocation Lists

Revocation: EPRL (End-entity Public-key Certificate Revocation List, formerly CRL), CARL (Certification Authority Revocation List, formerly ARL)

Online Check

Automatic download of revocation lists from the CA at predefined intervals; Online validation of certificates via OCSP or OCSP over http

Connection Management

Line Management

Dead Peer Detection (DPD) with configurable time interval;
Timeout (controlled by duration and charges)

Point-to-Point Protocols

LCP, IPCP, MLP, CCP, PAP, CHAP, ECP

Pool Address Management

Reservation of an IP address from a pool for a defined period of time (lease time)



IPsec VPN

Virtual Private Networking

IPsec (Layer 3 tunneling), RFC-conformant;
Automatic adjustment of MTU size, fragmentation and reassembly;
DPD;
NAT Traversal (NAT-T);
IPsec modes: Tunnel Mode, Transport Mode
Seamless Rekeying; PFS

Internet Society RFCs and Drafts

RFC 2401 –2409 (IPsec), RFC 3947 (NAT-T negotiations), RFC 3948 (UDP encapsulation),
IP Security Architecture, ESP, ISAKMP/Oakley, IKE, IKEv2 (incl. MOBIKE), IKEv2 Signature
Authentication, XAUTH, IKECFG, DPD, NAT Traversal (NAT-T), UDP encapsulation, IPCOMP,
IKEv2 authentication conformant to RFC 7427 (padding process)

Encryption

Symmetric processes: AES (CBC/CTR/GCM) 128, 192, 256 bits;
Blowfish 128, 448 bits; Triple-DES 112, 168 bits;
Dynamic processes for key exchange: RSA to 4096 bits;
Diffie-Hellman Groups 1, 2, 5, 14-21, 25-30;
Hash algorithms: SHA-1, SHA 256, SHA 384 or SHA 512

Firewall

Stateful packet inspection;
IP-NAT (Network Address Translation);
Port filtering; LAN adapter protection

VPN Path Finder

NCP Path Finder Technology: Fallback to HTTPS from IPsec (port 443) if neither port 500
nor UDP encapsulation are available

Seamless Roaming

With Seamless Roaming in the NCP Secure Client, the system can automatically transfer
the VPN tunnel to a different communication medium (LAN / Wi-Fi / 3G / 4G) without
changing the IP address to avoid interrupting communication via the VPN tunnel or
disconnecting application sessions.

Authentication Processes

IKEv1 (Aggressive and Main Mode), Quick Mode; XAUTH for extended user
authentication;
IKEv2, EAP-PAP / MD5 / MS-CHAP v2 / TLS
Support for certificates in a PKI: Soft certificates, certificates with ECC technology;
Pre-shared keys;
One-time passwords and challenge response systems; RSA SecurID ready

IP Address Allocation

DHCP (Dynamic Host Control Protocol) over IPsec;
DNS: Selection of the central gateway with dynamic public IP address by querying the IP
address via a DNS server;
IKE config mode for dynamic assignment of a virtual address to clients from the internal
address range (private IP)

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Data Compression

Different pool can be assigned depending on the connection medium. (Client VPN IP)

Installation requirements

IPCOMP (lzs), Deflate

Minimum requirements for installation within a virtual environment:

Virtual machine: Currently only available for VMware vSphere Hypervisor (ESXi);

Hyper V and KVM are available with the release of VSES 12.1)

- BIOS (not UEFI)
 - Approximately 5 GB storage
 - Minimum 2GB RAM
 - Multiple processors for production systems
 - Select "Debian 9" when creating the VM
-

Recommended VPN Clients /

NCP Secure Entry Clients

NCP Secure Enterprise Clients

Windows 32/64, macOS, Android

Windows 32/64, macOS, iOS, Android, Linux



NCPATH FINDER

16.

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