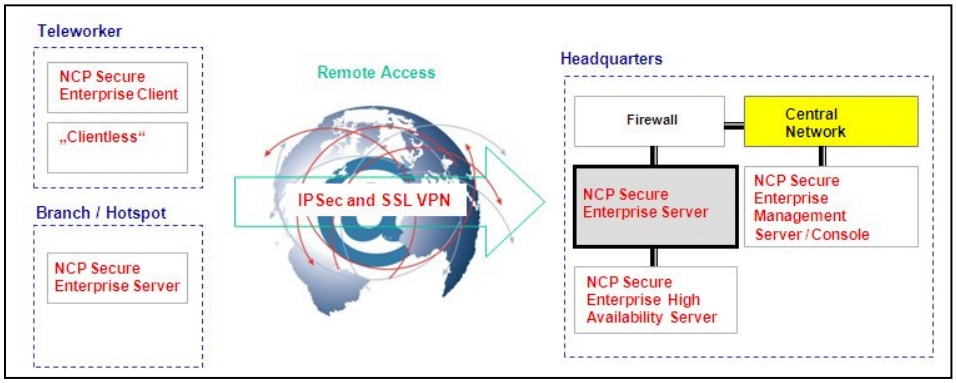
Data Sheet

NCP Secure Enterprise Server

Hybrid IPsec/SSL-VPN gateway software
Central component of a holistic Virtual Private Network (VPN)



- **Universal platform for IPsec VPNs and SSL VPNs**
- **Compatible with IPsec gateways from all major manufacturers**
- **Integrated IP routing and firewall functionalities**
- **Central and distributed installation**
- **Bandwidth management**
- **Network Access Control**
- **Multi company support (use by multiple companies)**

Universality

The NCP Secure Enterprise Server is the gateway component of the holistic NCP VPN Solution. As platform for universal highly secure access to the corporate network it satisfies all communication and security requirements for operation of a professional virtual private network.
Via the NCP Secure Enterprise Server secure data connections can be set up to the corporate network on the basis of an IPsec VPN and/or SSL VPN, as needed.
User management can be executed directly via the VPN gateway or back-end systems, such as RADIUS LDAP or MS Active Directory.
For increased availability it is possible to integrate one or multiple NCP Secure Enterprise Servers in a high availability environment with failsafe or load balancing servers.
In addition to the usual installation on a standard PC (Windows/Linux) behind a firewall in the DMZ (Demilitarized zone) the NCP Secure Enterprise Server can also be used directly on the public network (Wide Area Network).
Integrated IP routing and firewall functionalities ensure connectivity and security for networking a branch office for example. The server software is modular and highly scalable. It can be extended as desired to meet the respective demand for remote users and VPN tunnels. Installation of the NCP Secure Server software is possible on dedicated PCs (in larger VPN environments we recommend parallel use of multiple systems for availability reasons) or on an existing server (e.g. in smaller networks).
If multiple VPN systems will be used then the optional High Availability services ensure high availability and uniform capacity utilization of all NCP Secure Enterprise Servers.
Consistent implementation of standards enables universal implementation in existing IT infrastructures and compatibility with VPN gateways provided by other manufacturers in IPsec environments.

Security

The NCP Secure Enterprise Server supports all the security mechanisms that are required for confidential access to the corporate network. Access and transmission security are ensured through: IPsec and SSL tunneling, data encryption, firewalling, strong authentication, support of OTP (One-Time Password) tokens, and certificates in a PKI (Public Key Infrastructure).
Validity of certificates can be verified relative to the Certification Authority offline or online at each dial-in based on revocation lists. Within the framework of Endpoint Security* every external device is checked for specified, security relevant parameters prior to accessing the productive network. If there is deviation from target values then the

system can trigger various pre-defined activities. In an IPsec VPN the options are: Disconnect, continue in the quarantine zone, or starting external applications on the remote PC. For an SSP VPN access authorizations to certain applications will be granted on the basis of pre-defined security levels. After concluding a SSL session all data on the end device are deleted automatically.
Compliance with the security policies is mandatory and cannot be bypassed or manipulated by the remote user.
Protocols and extensive messages of the central VPN management system meets all compliance requirements and provide the requisite overview for network administrators - at any time.
New security technologies as well as supplemental features can be added at anytime through simple updates.

Performance and convenience

With the NCP Secure Communications solution the Intranet is extended with remote workstations. Mobile and stationary teleworkers become integrated participants in a cross company data network. The manner in which and the extent to which the remote users are allowed to access the central corporate network is specified from the central location or determined by the tunneling technology used.
In an IPsec VPN all network applications and functionalities are made available to the user transparently at his/her teleworkstation in the same way they are available in the office, on the basis of LAN emulation. This also applies for Voice over IP.
Using the SSL protocol central can defined which applications in the corporate network the user is allowed to success. The NCP Secure Enterprise Server provides all function modules required: Web Proxy (http-applications), Port Forwarding and PortableLAN (TCP/IP-applikations respectively network access).
In an IPsec VPN the same network address (IP address) can be assigned to the NCP Secure Client after each dial-in. This facilitates remote administration and central user support.
This is a private IP address from the enterprise's address pool. The remote participant can always be uniquely identified based on his IP address - regardless of the location from which he dials into the corporate network.

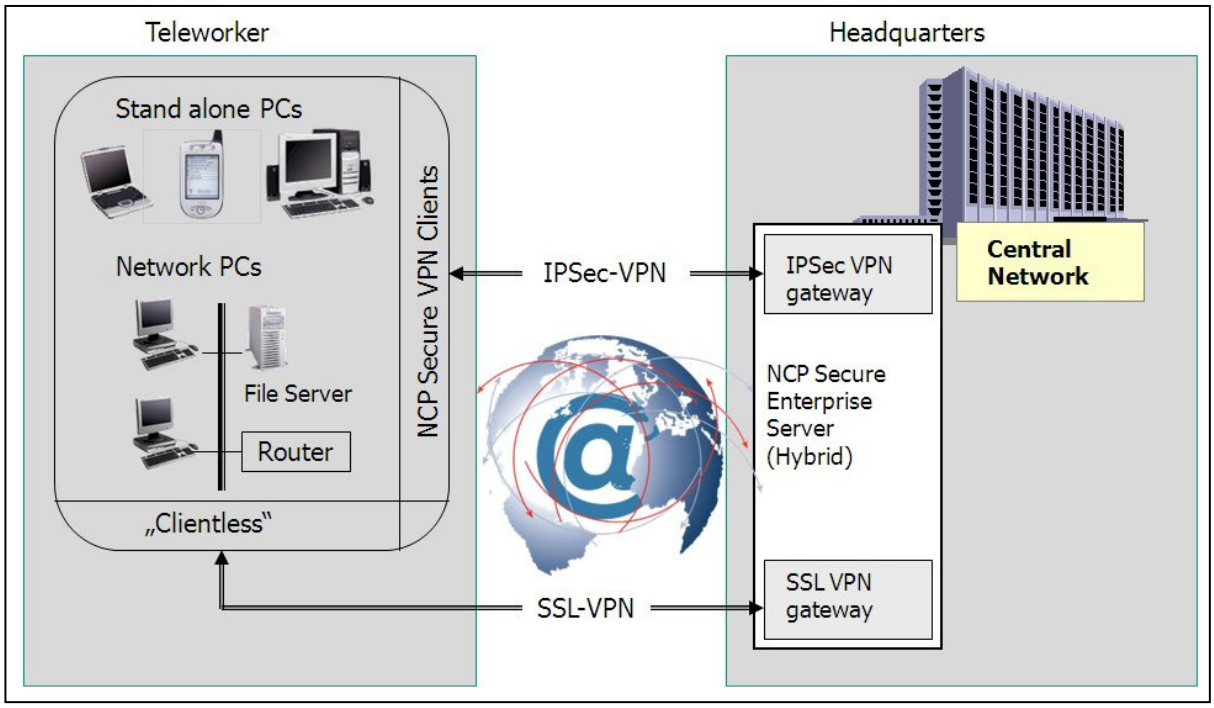
With dynamic assignment of an IP address from a pool the address can be reserved for a certain user within a defined period (lease time).
NCP Secure Enterprise Server is optimised for remote access, i.e. the support and management of a large number of teleworkers or VPN tunnels. Management functions are used to control and monitor all data connections between teleworkstations and corporate headquarters.
These integrated automation mechanisms ensure transparency, and optimize performance, security, and the profitability of the holistic VPN solution.
The NCP Secure Enterprise Server supports Dynamic DNS (DynDNS) for reachability of the VPN gateway. In an IPsec VPN the remote client (teleworker) is reachable from the central location over ISDN via "trigger call" (i.e. "D-channel knocking").
Multi Company Support enables concurrent utilization of a system by multiple companies (resource sharing). Convenient access management enables reliable administration of each company's respective NCP Secure Enterprise Clients through its own system administrators.
The modular software architecture of the NCP Secure Enterprise Server allows an extension of the system as needed.

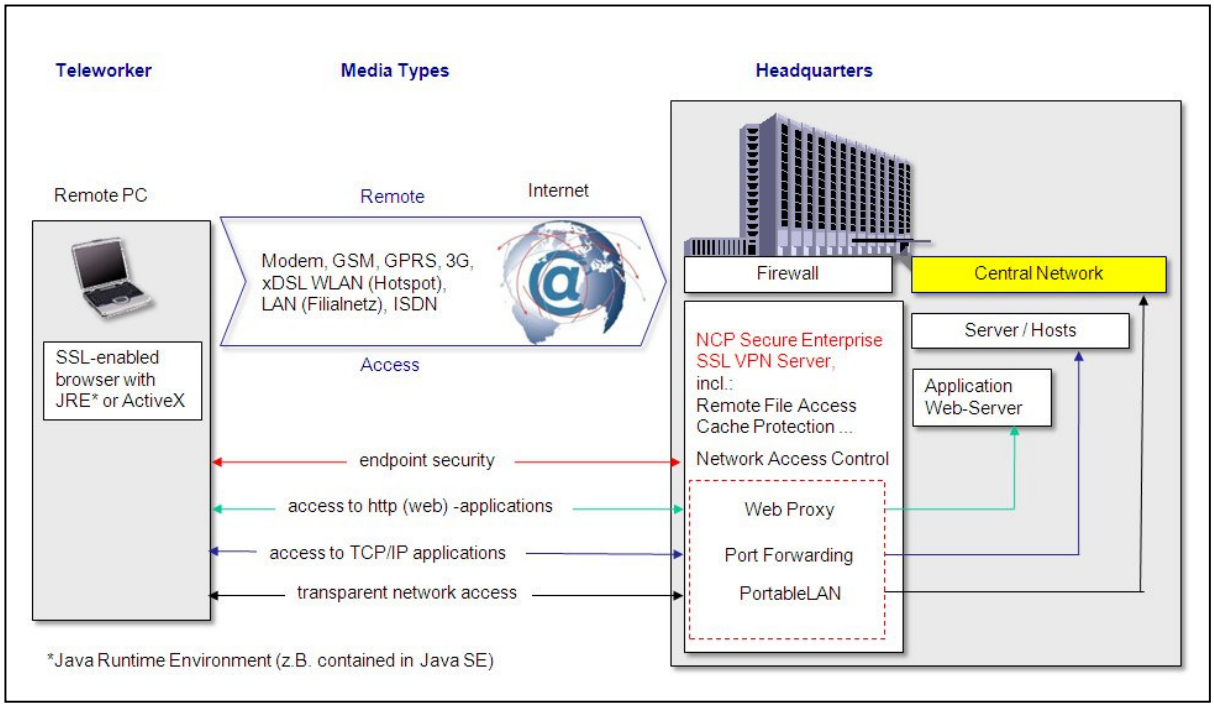
Management

The NCP Secure Enterprise Server is configured and managed via the Server Manager on the basis of SNMP or SNMP over SSL, or via a web interface. All data are encrypted for transmission. Multiple administrators can be created with different rights.

*) Network Access Control is an integrated part of the NCP SSL VPN Gateway. In case of an IPsec VPN, the NCP Secure Enterprise Management is optional needed

Function and configuration overviews





Technical data

IPsec VPN and SSL VPN - general

Operating systems	32-bit: Windows 2000, Windows XP Prof., Windows 2003 Server, Windows Server 2008 (Beta) Linux Kernel 2.4 as of version 2.4.10; Kernel 2.6 as of 2.6.12 (distributions on request). 64-bit: Windows Server 2008
Management	Server Manager, local and remote administration via SNMP over SSL or SNMP; access management (multiple administrators); connection tests; traces; configuration, web interface
Network Access Control (Endpoint Security)	Endpoint Policy Enforcement for incoming data connections. Verification of predefined, security-relevant client parameters in this regard. Measures in the event of target/actual deviations: - IPsec VPN: Disconnect or continue in the quarantine zone with instructions for action (Messagebox) or start of external applications (e.g. virus scanner update), logging in Logfiles (see the Secure Enterprise Management data sheet for more information). - SSL VPN: Access authorization to certain applications in accordance with defined security levels.
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 (prerequisite: The VPN client must support DNS resolution - as do NCP Secure Clients)
DDNS	Extension of the Domain Name Server (DNS), reachability of the VPN client under a (permanent) name in spite of changing IP address
Network protocols	IP
Multi Company Support	Group capability, support of max. 256 domain groups (i.e. configuration of: authentication, forwarding, filter groups, IP pools, bandwidth limitation, etc.)
User administration	Local user administration (up to 750 users), OPT server, RADIUS, LDP, Novell NDS, MS Active Directory Services
Statistics and logging	Detailed statistics, logging functionality, sending SYSLOG messages
Client/user authentication processes	OTP token, certificates (X.509 v.3): User and hardware certificates (IPsec), user name and password
Certificates (X.509 v.3)	
Server certificates	Certificates can be used that are provided via the following interfaces: PKCS#11 interface for encryption tokens (USB and smart cards); integrated support of smart cards via PC/SC, CT-API (cards on request); 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 downloads of revocation lists from the CA at certain intervals; Online check: Checking certificates via OCSP or OCSP relative to the CA over http

IPsec VPN and SSL VPN - dial in

Transmission media	LAN; direct operation on the WAN: Support of max. 120 ISDN B-channels (So, S)
Line management	DPD with configurable time interval; Short Hold Mode; channel bundling (dynamic in ISDN) with freely configurable threshold value; timeout (controlled by time and charges)
Point-to-Point protocols	PPP over ISDN, PPP over GSM, PPP over PSTN, PPP over Ethernet; ☐ LCP, IPCP, MLP, CCP, PAP, CHAP, ECP
Pool address management	Reservation of an IP address from a pool within a defined period (lease time)
Trigger call	Direct dial of the distributed VPN gateway via ISDN, "knocking in the D-channel"

IPsec VPN

Virtual Private Networking	IPsec (Layer 3 tunneling), RFC-conformant; 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, HMAC-MD5-96, HMAC-SHA-1-96, ISAKMP/Oakley, IKE, XAUTH, IKECFG, DPD, NAT Traversal (NAT-T),UDP encapsulation, IPCOMP
Encryption	Symmetric processes: AES 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 hash algorithm: MD5, SHA1, SHA 256, SHA 384, SHA 512
Firewall	Stateful Packet Inspection; IP-NAT (Network Address Translation); port filtering; LAN adapter protection
Authentication processes	IKE (Aggressive and Main Mode), Quick Mode; XAUTH for extended user authentication; support of certificates in a PKI: Soft certificates, smart cards, and USB tokens:☐ Pre-shared secrets, 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 changing 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).
Data compression	IPCOMP (lzs), Deflate
Recommended system requirements	
Computer	CPU: Pentium III (or higher) 150 MHz or comparable x86 processor, 256 MB RAM (minimum), per 250 concurrently useable tunnels 64 MB RAM. Clock speed: Data throughput of app. 4,5 mbit/s can be realized for each 150 MHz with a Single Core CPU (including encryption), Data throughput of app. 9 mbit/s can be realized for each 150 MHz with a Dual/Quad Core CPU (including encryption).

SSL VPN

Protocols	SSLv1, SSLv2, TLSv1 (Application Layer Tunneling)
Web Proxy	Access to internal web applications and Microsoft network drives via a web interface. Prerequisites for the end device: SSL-capable web browser with Java Script functionality
Secure Remote File Access	Upload and download, creating and deleting directories, approximately corresponds to the functionalities of the File Explorer under Windows. Prerequisites for the end device: See Web Proxy
Port Forwarding	Access to client/server applications (TCP/IP), Prerequisites for the end device: SSL-capable web-browser with Java Script functionality, Java Runtime Environment (>= V5.0) or ActiveX, SSL Thin Client for Windows Vista (32/64-bit), Windows XP (32/64-bit)
PortableLAN	Transparency access to corporate network Prerequisites for the end device: SSL-capable web-browser with Java Script functionality, Java Runtime Environment (>= V5.0) or ActiveX control, PortableLAN Client for Windows Vista (32/64-bit), Windows XP (32/64-bit)
Cache protection	Required when using Internet Explorers. All transmitted data on the end device will be deleted automatically after the connection is disconnected. Prerequisites for the end device: SSL-capable web-browser with Java Script functionality, Java Runtime Environment (>= V5.0), SSL Thin Client Windows Vista (32/64-bit), Windows XP (32/64-bit)
Recommended system requirements*	
Number of concurrent users	**Computer**
10 concurrent users (CU)	CPU: Intel Pentium III 700 MHz or comparable x86 processor, 512 MB RAM
50 concurrent users	CPU: Intel Pentium III 1.5 MHz or comparable x86 processor, 512 MB RAM
100 concurrent users	CPU: Intel Dual Core 1.83 GHz or comparable x86 processor, 1024 MB RAM
200 concurrent users	CPU: Intel Dual Core 2.66 GHz or comparable x86 processor, 1024 MB RAM

*) The specified values are approximate values that are significantly influenced by user behavior or the applications. If you anticipate many concurrent file transfers (file upload and download) then we recommend increasing the memory value cited above by a factor of 1.5.