

# Cisco Nexus Switching I

## Configuration with the NX-OS

The Nexus switches and the NX-OS operating system are established high-speed switches in core structures and data centers, whereby the NX-OS is based on a Linux kernel and offers many new options. Participants will be familiarized with these special features of the NX-OS compared to the classic IOS and typical protocols such as virtual port channel (vPC) and the connection of fabric extenders (FEX) will be presented in a practical way. An optimal network design and the optimization of the protocols used play a major role here in order to be able to implement highly available structures with low downtime. Typical administration tasks such as updates during operation or system recovery are also carried out.

### Course Contents

- Architecture of the Nexus product families 9000, 7000, 5000 and 2000
- Network design with Nexus switches (data center, LAN/WAN)
- NX-OS software architecture and NX-OS compared to IOS
- Virtual Device Context (VDC), management and monitoring
- Ethernet switching and routing (FHRPs, EIGRP, OSPF)
- Connection of the Fabric Extender (FEX) and Config Sync
- Virtual Port Channel (vPC) and the design of vPC solutions
- Fabric concepts at a glance
- Troubleshooting and hardware-related system commands in NX-OS
- In-service software upgrade (ISSU) and disaster recovery
- Network management with GOLD and EEM
- System and network high availability
- Security features and access protection

**E-Book** The detailed digital documentation package, consisting of an e-book and PDF, is included in the price of the course.

### Target Group

The training is particularly suitable for network planners and administrators who use Cisco Nexus products. A course participant learns all the important features of a state-of-the-art network with Nexus switches.

### Prerequisites

Participants should have a very good knowledge of Ethernet routing and switching.

### This Course in the Web



You can find the up-to-date information and options for ordering under the following link:  
[www.expereteach-training.com/go/NEX1](http://www.expereteach-training.com/go/NEX1)

### Reservation

On our Website, you can reserve a course seat for 7 days free of charge and in an non-committal manner. This can also be done by phone under +49 6074/4868-0.

### Guaranteed Course Dates

To ensure reliable planning, we are continuously offering a wide range of guaranteed course dates.

### Your Tailor-Made Course!

We can precisely customize this course to your project and the corresponding requirements.

Training		Prices, excl. of V.A.T.	
Classes in Germany	5 Days	€ 3,195	
Online Training	5 Days	€ 3,195	
Date/course venue	Course language German		
19/05-23/05/25	ON	Online	13/10-17/10/25
25/08-29/08/25	HY	Frankfurt	24/11-28/11/25
25/08-29/08/25	HY	Online	24/11-28/11/25
13/10-17/10/25	HY	Frankfurt	HY Online

Status 05/07/2025



ExperTeach



# Table of Contents

## Cisco Nexus Switching I – Configuration with the NX-OS

<b>1 Die Nexus-Produktfamilie</b>	<b>3.7.3 UniDirectional Link Detection (UDLD)</b>	<b>6.2.4 Generic Online Diagnostics GOLD</b>
<b>1.1 Die Nexus Switches</b>	<b>3.7.4 Loop Guard</b>	<b>6.2.5 Embedded Event Manager</b>
<b>1.1.1 Nexus 7000 Familie</b>	<b>3.7.5 Root Guard</b>	<b>6.3 Wichtige CLI-Kommandos</b>
<b>1.1.2 Redundanzkonzepte der Modularen Chassis</b>	<b>3.8 Port-Channel</b>	<b>6.3.1 Die CLI-Klassiker</b>
<b>1.1.3 Nexus 9500 Familie</b>	<b>3.8.1 Link Aggregation Protocol nach IEEE 802.3ad</b>	<b>6.3.2 Typische Troubleshooting-Befehle</b>
<b>1.1.4 Nexus 5000 Familie</b>	<b>3.9 virtual Port-Channel (vPC)</b>	<b>6.3.3 Consistency Checker und Virtual TAC Assistant</b>
<b>1.1.5 Nexus 9300 Familie</b>	<b>3.9.1 vPC-Konfiguration – Teil 1</b>	<b>6.3.4 Troubleshooting von Software-Image-Problemen</b>
<b>1.1.6 Nexus 3000 Familie</b>	<b>3.9.2 vPC-Administration</b>	<b>6.3.5 Debug Filter</b>
<b>1.1.7 Nexus 9200 Familie</b>	<b>3.9.3 vPC – Einfluss auf das Design</b>	<b>6.3.6 Interface Troubleshooting</b>
<b>1.1.8 Die Fabric Extender (FEX)</b>	<b>3.9.4 vPC – Optimierungen</b>	<b>6.4 SPAN und ERSPAN</b>
<b>1.1.9 Eigene Welt: Nexus 9000 mit ACI</b>	<b>3.9.5 Configuration Sync</b>	<b>6.5 NX-OS Ethanalyzer</b>
<b>1.2 Redundanzkonzepte in Supervisor und NX-OS</b>	<b>3.10 Fabric Konzepte: Fabric Path und Dynamic Fabric Automation (DFA)</b>	<b>7 Sicherheitsfunktionen im NX-OS</b>
<b>1.2.1 Stateful Switchover (SSO)</b>	<b>3.11 Fabric Konzepte: VXLAN und Cisco Programmable Fabric</b>	<b>7.1 Sicherheitsfunktionen im Überblick</b>
<b>1.2.2 Non-Stop Forwarding</b>	<b>3.12 Fabric Konzepte: Application Centric Infrastructure (ACI)</b>	<b>7.2 Role-based Access Control (RBAC)</b>
<b>1.3 Lizenzierung im NX-OS</b>	<b>4 Nexus 2000</b>	<b>7.2.1 AAA-Configuration</b>
<b>1.3.1 Lizenzen verwalten</b>	<b>4.1 FEX (Fabric Extender)</b>	<b>7.3 Schutz der Data Plane</b>
<b>1.3.2 Nexus Lizenzen</b>	<b>4.2 Anbindungsvarianten</b>	<b>7.3.1 Zugriffsschutz Access-Bereich</b>
<b>2 Inbetriebnahme und Management von Cisco Nexus und NX-OS</b>	<b>4.2.1 Konfiguration mit statischem Pinning</b>	<b>7.3.2 DHCP Snooping</b>
<b>2.1 Konfigurationsvarianten für Nexus Switches</b>	<b>4.2.2 Konfiguration mit Port-Channel</b>	<b>7.3.3 Dynamic ARP Inspection</b>
<b>2.1.1 Die serielle Konsole</b>	<b>4.2.3 Active-Active Konfiguration mit vPC</b>	<b>7.3.4 IP Source Guard</b>
<b>2.1.2 Das Command Line Interface</b>	<b>5 Routing mit den Nexus Switches</b>	<b>7.4 Access-Listen</b>
<b>2.1.3 SNMP, XML/NETCONF und NX-API</b>	<b>5.1 Inter-VLAN Routing</b>	<b>7.4.1 TCAM Carving</b>
<b>2.1.4 Cisco Data Center Network Manager–LAN (DCNM–LAN)</b>	<b>5.2 Routed Ports und Switched Virtual Interfaces (SVI)</b>	<b>7.5 Schutz der Control Plane</b>
<b>2.2 Das Cisco NX-OS Setup Utility</b>	<b>5.3 Path Virtualization im DC und LAN</b>	<b>A Übungen und Aufgaben zum Kurs</b>
<b>2.3 Virtual Device Contexts (VDC)</b>	<b>5.3.1 VRFs und deren Zusammenspiel</b>	<b>A.1 Zugriff auf den Terminal Server</b>
<b>2.4 Die Konfiguration im NX-OS</b>	<b>5.3.2 Virtual Network Perimeter</b>	<b>A.2 Übersicht: Lab Topologie - Grundkonfiguration</b>
<b>2.4.1 Hilfsfunktionen</b>	<b>5.3.3 VRF Lite auf dem Access Switch</b>	<b>A.2.1 Übersicht: Allgemeine Layer-3-Struktur</b>
<b>2.4.2 Die Konfigurationsfiles</b>	<b>5.4 First-Hop Redundanz durch HSRP, VRRP und GLBP</b>	<b>A.3 Initiales Setup</b>
<b>2.4.3 File-Handling</b>	<b>5.4.1 Hot Standby Router Protocol (HSRP)</b>	<b>A.3.1 Die Dienste im Netz</b>
<b>2.4.4 Die Systemzeit</b>	<b>5.4.2 Virtual Router Redundancy Protocol (VRRP)</b>	<b>A.3.2 Einrichten von VDCs</b>
<b>2.4.5 Cisco Discovery Protocol (CDP)</b>	<b>5.4.3 Gateway Load Balancing Protocol (GLBP)</b>	<b>A.4 Layer-2-Struktur mit Access und Trunk Ports, VLANs, SVIs</b>
<b>2.4.6 Link Layer Discovery Protocol (LLDP)</b>	<b>5.5 Statische Routen</b>	<b>A.4.1 Anbindung der Fabric Extender</b>
<b>2.4.7 Domain Name System (DNS)</b>	<b>5.6 OSPF – Open Shortest Path First</b>	<b>A.4.2 Rapid-PVST+ und Optimierung</b>
<b>2.4.8 Dynamic Host Configuration Protocol (DHCP)</b>	<b>5.6.1 Vorstellung der theoretischen Grundlagen</b>	<b>A.4.3 MSTP und Optimierung</b>
<b>3 Ethernet Switching</b>	<b>5.6.2 OSPF-Konfiguration im NX-OS</b>	<b>A.4.4 vPC</b>
<b>3.1 Port-Konfiguration (NX-OS)</b>	<b>5.7 EIGRP-Konfiguration</b>	<b>A.4.5 Active/Active-Anbindung der Fabric Extender</b>
<b>3.1.1 Die MAC-Address-Table</b>	<b>5.8 Bidirectional Forwarding Detection</b>	<b>A.5 Layer-3-Struktur und Routing</b>
<b>3.2 VLANs und Private VLANs</b>	<b>5.9 Policy-based Routing</b>	<b>A.5.1 HSRP, VRRP und GLBP</b>
<b>3.2.1 Anlegen von VLANs</b>	<b>5.10 Redistribution von Routen</b>	<b>A.5.2 Routing mit EIGRP im Layer 3 Core</b>
<b>3.2.2 Konfiguration von Access Ports</b>	<b>6 Maintenance und Troubleshooting</b>	<b>A.5.3 Routing mit OSPF im Layer 3 Core</b>
<b>3.3 VLAN-Trunks mit IEEE 802.1Q</b>	<b>6.1 Firmware- und Konfigurations-Management</b>	<b>A.5.4 Einrichten von VRFs (optional)</b>
<b>3.3.1 Das Trunk-Protokoll</b>	<b>6.1.1 Boot Sequence</b>	<b>A.5.5 Route Redistribution und PBR (optional)</b>
<b>3.4 VLAN Trunk Protocol (VTP)</b>	<b>6.1.2 In-Service Software Upgrade</b>	<b>A.5.6 Routing auf dem Nexus 5500/5600 (optional)</b>
<b>3.4.1 Private VLANs</b>	<b>6.1.3 ISSU mit Nexus 9000</b>	<b>A.6 Maintenance, Security und Troubleshooting</b>
<b>3.5 Rapid Spanning Tree</b>	<b>6.1.4 Service Maintenance Patches (SMU)</b>	<b>A.6.1 Netzwerkmanagement: Syslog, Debugging, SPAN ...</b>
<b>3.5.1 Die schleifenfreie Topologie</b>	<b>6.1.5 GIR/Maintenance Mode</b>	<b>A.6.2 Disaster Recovery, ISSU und Updates im laufenden Betrieb</b>
<b>3.5.2 Eigenschaften und Funktion</b>	<b>6.1.6 Password Recovery</b>	<b>A.6.3 DHCP Relay Agent</b>
<b>3.5.3 Per-VLAN Spanning Tree</b>	<b>6.1.7 Checkpoint/Rollback</b>	<b>A.6.4 Security: Zugriffsschutz, Control Plane</b>
<b>3.5.4 Die Wahl der Root Bridge</b>	<b>6.2 Netzwerkmanagement und Systemmeldungen</b>	<b>A.6.5 Security: Schutz der Data Plane</b>
<b>3.6 Multiple Spanning Tree</b>	<b>6.2.1 Syslog Logging</b>	<b>B Abkürzungsverzeichnis</b>
<b>3.7 Weitere wichtige STP-Features – Edge Port</b>	<b>6.2.2 On Board Failure Logging (OBFL)</b>	<b>C Befehle</b>
<b>3.7.1 Bridge Assurance Protocol</b>	<b>6.2.3 Smart Call Home</b>	
<b>3.7.2 BPDU Guard und Filtering</b>		

