

# Kurskatalog

– Cygate kundutbildningar

## INNEHÅLL

Fastighetsnätutbildning .....	1
Optical Networking Essentials .....	2
TCP/IP grundkurs .....	3
TCP/IP, fortsättningskurs .....	4
IP Routing & Cisco Routers .....	5
Cisco Switch Essentials .....	6
Advanced OSPF Configuration .....	7
MPLS Essentials.....	8
MPLS L3 VPN.....	9
Advanced MPLS .....	10
Advanced L3 MPLS VPN .....	12
BGP Essentials .....	13
BGP Advanced .....	14
IP QoS .....	15
IPv6 Routing .....	16
IP Multicast Essentials .....	17
Advanced Cisco Switch Configuration .....	18
Hands-on ATM Networking.....	19
Cisco Device Troubleshooting .....	19
Alteon, produktutbildning .....	21
Trådlösa nätverk (WLAN) .....	22
Säkerhet i trådlösa nätverk (WLAN).....	23
Check Point Security Administration NGX I .....	24
Check Point Security Administration NGX II .....	25
Check Point Accelerated CCSE NGX .....	27
Nokia IPSO för FW-1-administratörer .....	28
Linux Red Hat Security Administration.....	29
Cisco PIX Essentials.....	30
Security with Cisco Routers .....	31
Building Secure VPN Networks.....	32
Secure Wireless Networking.....	33
Cisco Info Center / Micromuse Netcool.....	34
Cisco Works 2000.....	35
Symantec LiveState Delivery, Administration .....	37
Symantec LiveState Delivery, Scripting .....	39
Spectrum Administration .....	39
Concord eHealth, rapporttolkning .....	43
Concord eHealth, administration.....	44



## **Fastighetsnätutbildning**

Kurskod: TJ-EDU-01

**Längd: 1 dag**

Inga särskilda förkunskaper krävs för att medverka på denna kurs.

Kursinnehåll:

- Introduktion
- Historik
- Aktuella standarder
- Produkttyper koppar
- Produkttyper fiber
- Olika testmetoder
- Att dokumentera ett fastighetsnät
- Saker att tänka på vid en upphandling



## Optical Networking Essentials

Kurskod: TJ-EDU-02

**Length: 1 day**

Optical networking has revolutionized the way how data networks are built. Different techniques have been around for the past ten years but until recently, optical networking has been an art for just a handful of experts. This is changing all the time since more and more operators, enterprises and smaller companies deploy optical technologies in their networks.

This course is intended for all persons that do need basic knowledge of optical networks in their daily business. This includes network design and operating personnel.

Course pre-requisites

- Some networking knowledge is recommended

Course content

- Optical revolution – history and status
- Optical networking basics
- Fibers
- Operator networks
- Metro networks
- Corporate usage
- Future of optical networking



## TCP/IP grundkurs

Kurskod: TJ-EDU-03

**Längd: 2 dagar**

Kursen vänder sig till de som behöver en grundläggande introduktion till TCP/IP.

Moment som ingår i kursen är:

- Introduktion till LAN
- Olika standarder för LAN
- Adressering på LAN
- TCP/IP-arkitektur
- IP-adressering, adresstilldelning (DHCP) och namnuppslag (DNS)
- Användning av några vanliga TCP/IP applikationer

Förkunskaper

Är deltagarna på ungefär samma nivå kanske ett "uppsamlingsheat" räcker i början av kursen. Är inte alla på samma nivå kan kursdeltagarna delas upp i olika grupper beroende på förkunskaperna. Vi stämmer alltid av detta med kunden.

Exempel på delmoment

- Introduktion
- Teori
- Övningar
- Felsökning



## TCP/IP, fortsättningskurs

Kurskod: TJ-EDU-04

### Längd: 2 dagar

- TCP/IP arkitektur
- Enklare routing (RIP, statiska rötter)
- Avancerad routing (OSPF, RIP-2, EIGRP, BGP)
- Felsökning och protokollanalys
- Loopar i routade nätverk
- Användning av några avancerad TCP/IP applikationer

### Förkunskaper

Är deltagarna på ungefär samma nivå kanske ett "uppsamlingsheat" räcker i början av kursen. Är inte alla på samma nivå kan kursdeltagarna delas upp i olika grupper beroende på förkunskaperna.

### Exempel på delmoment

#### Introduktion

- Teori
- Övningar
- Felsökning



## IP Routing & Cisco Routers

Kurskod: TJ-EDU-05

### Length: 2 Days

This basic IP routing course, which also introduces the participants to Cisco router configuration essentials, is intended for personnel who have to deal with IP routing and in particular with Cisco routers. Everyone who needs to understand IP routing works is included in target audience.

The need to understand the basic concepts of IP networking and IP routing is increasing as more and more companies utilize TCP/IP-based systems. In order to successfully engage system suppliers and operators one needs to have at least grasped the basic concepts of TCP/IP.

Theory is balanced with exercises which create a fully functional IP network.

### Course pre-requisites

- Knowledge of basic data networking
- Basic IPv4 understanding

### Recommended courses before this one

- TCP/IP theoretical studies

### Course content

- Understanding IP subnetting
- Router internals; how the packet is forwarded
- Cisco router basics
  - different model families
  - what is IOS?
  - essential configuration steps
  - essential router handling issues
- Configuring interfaces
- Configuring static routing
- Configuring dynamic routing
  - different routing protocol families
  - Introduction to OSPF



## Cisco Switch Essentials

Kurskod: TJ-EDU-06

### Length: 3 Days

Ethernet is nowadays everywhere. In company LANs, operator metro networks, and most recently even in WAN networks. Although Ethernet technology itself is not overly complex its dominant position in the market means that Ethernet switches are used in many different situations and in many ways. Therefore good knowledge of the issues surrounding Ethernet switching is a must.

This course focuses on theory and hands-on practices. First, the student will learn the fundamental issues of Ethernet, switching, and the building of LAN networks. Secondly, that knowledge will be utilized in exercises which demonstrate how Cisco switches should be administered.

### Course pre-requisites

- Basic understanding of data networking
- Understanding basic IPv4 issues

### Recommended courses before this one

- General networking theory
- TCP/IP theoretical studies

### Course content

- What is Ethernet?
- LAN and Campus network topologies
- Cisco switch models and architecture
- Switch management
  - IOS or CatOS
  - management VLANs
  - syslog
  - access restrictions
  - software upgrade
  - handling configuration files
- Spanning tree – avoiding looping in switched networks
  - utilizing new configuration options
- Virtual LANs
  - definitions
  - limitations
  - VTP protocol
  - restricting VLANs
- Link aggregation techniques



## Advanced OSPF Configuration

Kurskod: TJ-EDU-07

### Course Length: 2 Days

Configuring OSPF is intended for those requiring a solid understanding of the OSPF routing protocol. These are persons working for companies and operators whose networks run this most used routing protocol. All relevant topics are covered – beginning with internals of the protocol, flowing through small configurable issues and ending with OSPF network design issues. Theory is balanced by numerous practical hands-on exercises with one router per student.

### Course prerequisites

- Basic knowledge of Cisco router configuration
- Basic knowledge of TCP/IP including IP addressing and some familiarity with multicasting
- Basic knowledge of routing (e.g. static routing)

### Recommended courses before this one

- TCP/IP theoretical studies
- IP Routing and Cisco routers

### Course content

- Introduction to OSPF
- Protocol messages and router interaction
- OSPF router roles
- Network topology and OSPF configuration
- Single and multiple area configuration
- Additional configuration options
- OSPF authentication
- OSPF network design guidelines
- Troubleshooting OSPF networks
- Undocumented OSPF commands



## MPLS Essentials

Kurskod: TJ-EDU-08

### Course Length: 2 Days

Multiprotocol Label Switching is a new technology used to enhance operator networks by building value-added services on top of them. Since its introduction, MPLS has been welcomed by vendors and operators alike - it is seen as a logical step towards more sophisticated networks.

The course is intended for operator support and installation personnel as well as for MPLS product developers. The course covers the development of MPLS, how and where MPLS can be implemented, and the various services that can be run on top of MPLS. In addition to theory the course includes a well-selected lab exercise in which students build a basic MPLS network on top of different data-link layer technologies.

#### Course prerequisites

- Advanced knowledge of Cisco router configuration
- Basic knowledge of IGP and EGP routing protocols
- Ability to configure various data-link layer technologies (e.g. ATM, Frame Relay)

#### Recommended courses before this one

- IP routing and Cisco routers

#### Course content

- Background to MPLS
- The driving force behind MPLS
- Standardization update
- How MPLS works
- Exchanging label information
- MPLS-enabled services
- Troubleshooting MPLS networks



## MPLS L3 VPN

Kurskod: TJ-EDU-09

### Course Length: 3 Days

This course is intended for operator support and installation personnel. It examines the basic ideas behind MPLS VPNs and how and where MPLS VPNs can be implemented. Routing inside VPNs, and within operator networks, is given special attention due to its importance within MPLS VPNs. In addition to theory the course includes a well-selected lab exercise in which students build different MPLS VPN topologies using various routing protocols.

### Course prerequisites

- Advanced knowledge of Cisco router configuration
- Advanced knowledge of IGP and EGP routing protocols (e.g. OSPF, RIP, BGP-4)

### Recommended courses before this one

- Advanced OSPF Configuration
- BGP Essentials
- BGP Advanced
- MPLS Essentials

### Course content

- Methods used to create VPNs
- MPLS VPN basic architecture
- Traffic flows inside VPNs
- Creating VPNs
- Routing between operator and customer sites
- Routing of VPN information inside an operator cloud
- Management strategies for VPNs
- Inserting Internet routing into a VPN
- Various complex topologies
- Troubleshooting



## Advanced MPLS

Kurskod: TJ-EDU-10

### Course Length: 4 days

The Advanced MPLS course builds on top of Cisco's MPLS training. It touches topics that are not discussed on the basic course, therefore enlarging student's knowledge of MPLS network design, installation, operation and troubleshooting. The topics included represent state-of-the-art features that can be done with Cisco devices. Throughout the course, extensive labs will help the participants to understand advanced MPLS technologies.

The course is build for personell that do MPLS network design, installation, operation and troubleshooting. Significant Cisco hands-on and MPLS experience is a must to get the best of this training.

### Course Agenda

#### *Day 1*

##### MPLS Traffic Engineering

- TE philosophy
- TE components
- TE configuration and troubleshooting
- Advanced TE topics
- Fast Reroute and TE
- Multiple TE labs

#### *Day 2*

##### MPLS and Quality of Service

- QoS/CoS support in MPLS
- DiffServ refresher
- MPLS and DiffServ
- Configuring DiffServ in MPLS network
- Lab: MPLS and DiffServ

##### MPLS and L2 networking

- Why L2 on top of MPLS network?
- Comparison L2 or L3 over MPLS?
- Different L2 over MPLS proposals
- L2 over MPLS configuration guidelines

#### *Day 3*

Multiple ASes and MPLS L3 VPNs



- Inter-AS models
- Carrier supporting Carrier model
- Multiple labs on these models

#### *Day 4*

##### Multicast MPLS VPNs

- Multicast refresher
- mVPN model
- mVPN configuration
- Labs: Multicast on MPLS VPNs

##### Internet-as-a-VRF

- Model overview
- Needs for the model
- Model configuration
- Lab: Building Internet-as-a-VRF model



## **Advanced L3 MPLS VPN**

Kurskod: TJ-EDU-11

### **Length: 2 Days**

L3 VPN is the most favorite application that is used on top of MPLS network. Due to its popularity, there is an active developer community trying to generate new ways to get advantage of the technique. Therefore new features keep arriving to MPLS L3 VPNs creating a need to update also knowledge about it.

This course focuses on recent developments on MPLS L3 VPNs. It is targeted mainly to operator support and design personnel. Some of the issues are very complex and therefore it is recommended that the students meet the pre-requisites of the course.

#### Course pre-requisites

- Good knowledge MPLS and MPLS VPNs
- Good knowledge of BGP and multicasting

#### Recommended courses before this one

- MPLS L3 VPNs
- IP Multicast Essentials
- BGP Essentials
- BGP Advanced

#### Course content

- Inter-AS MPLS VPNs
- Multicast VPNs
- Advanced Internet routing through VRFs
- OSPF Sham Link support



## **BGP Essentials**

Kurskod: TJ-EDU-12

### **Course Length: 2 Days**

BGP is the most widely used routing protocol in the Internet. However, it is not just deployed by operators: the reality of multi-homed enterprise networks has broadened BGP use. This course is intended for those who design and configure BGP within their networks. The course covers when, where, why, and how BGP is deployed. Theory is balanced by numerous practical hands-on exercises with three routers per student pair.

#### Course prerequisites

- Basic knowledge of Cisco router configuration
- Basic knowledge of IP routing

#### Recommended courses before this one

- IP routing and Cisco routers

#### Course content

- BGP origins
- How BGP works
- Choosing the best path
- Neighbor events
- Configuring internal BGP
- Configuring external BGP
- Basic BGP route filtering
- Multihoming with BGP



## **BGP Advanced**

Kurskod: TJ-EDU-13

### **Course Length: 3 Days**

BGP is the most widely used internet routing protocol. However, it is not just deployed by operators: the reality of multi-homed enterprise networks has broadened BGP's use. This course is intended for those who design and configure BGP within their networks.

BGP Advanced builds upon what is learned in the BGP Essentials course. The detailed techniques are more demanding and require a good working knowledge of BGP.

#### Course prerequisites

- Advanced knowledge of Cisco router configuration
- Advanced knowledge of IP routing
- Basic knowledge of the BGP protocol

#### Recommended courses before this one

- BGP Essentials

#### Course content

- BGP structures
  - Route Reflectors
  - Confederations
- Route dampening
- Route-maps
- Communities
- Multiprotocol BGP basics



## IP QoS

Kurskod: TJ-EDU-14

### Course Length: 2 Days

Quality of Service in data networks is a hot topic within the IP world. Increased number of services implemented to run on top of IP means that QoS is now more important than ever before – among the services that impact QoS are multimedia applications and VoIP.

The IP QoS course provides the necessary theoretical background to QoS as well as ensuring real-world experience through numerous well-selected lab exercises.

#### Course pre-requisites

- Advanced knowledge of Cisco router configuration
- Understanding of the IP protocol

#### Recommended courses before this one

- IP routing and Cisco routers

#### Course content

- Why QoS/CoS?
- QoS architectures
  - DiffServ
  - IntServ
- Basic QoS/CoS mechanisms
  - shaping traffic
  - policing traffic
- Cisco modular QoS CLI
  - traffic class creation
  - traffic policy creation
- QoS on hardware; what does Cisco offer?



## IPv6 Routing

Kurskod: TJ-EDU-15

### Length: 2 Days

IPv6 has not yet achieved wide industry deployment, but that is about to change with the introduction of 3G cellular networks which depend upon IPv6 for routing. Although the IPv6 protocol is not overly complex it presents several new concepts and challenges. Among these are a new addressing scheme, mandatory security features, and the resulting changes to routing protocols.

This course will assume that the attendee has basic knowledge of IPv6 protocol suite. Course focuses on addressing, routing and transition issues. All relevant routing protocols including RIPng, BGP and OSPFv3 will be detailed and practised.

#### Course pre-requisites

- Knowledge of Cisco router configuration
- Understanding of IPv4
- Understanding of IPv6 protocol suite
- Basic knowledge of RIP, OSPF and BGP

#### Recommended courses before this one

- Advanced OSPF configuration
- BGP Essentials

#### Course content

- Addressing within IPv6 network
- Routing with IPv6
  - RIPng
  - OSPFv3
  - MBGP
- IPv6 transition
- IPv6 current deployment in the Internet



## IP Multicast Essentials

Kurskod: TJ-EDU-16

### Length: 2 Days

Although multicasting has been around for over ten years it has not gained the popularity it deserves. This is due to a general lack of understanding of multicasting as well as a lack of suitable multicast applications. With the advent of multiparty multimedia communications this is about to change – so there is no better time to take this course!

IP Multicasting Essentials assumes a general knowledge of IP unicast routing as the course touches upon all the relevant issues of current multicasting networks. Extensive theory is balanced with multiple lab exercises.

#### Course pre-requisites

- Knowledge of Cisco router configuration
- Knowledge of unicast routing

#### Recommended courses before this one

- IP routing and Cisco routers

#### Course content

- Multicast basics
  - what is multicasting?
  - why multicasting?
  - multicast protocol families
- Internet Group Message Protocol (IGMP)
- Multicast routing mechanisms
  - routing protocols
  - DVMRP
  - PIM with different variants
- Testing multicasting on Cisco networks



## Advanced Cisco Switch Configuration

Kurskod: TJ-EDU-17

### Length: 3 Days

Cisco's switches have a lot of different features beside the basic ones. To get the best out of an investment, that might be hundred thousands of euros, one should really know what the box is capable of doing. This is usually also a demand from the business side – the more networks are used, the more secure and reliable they must be.

This course goes over the advanced features that can be configured on Cisco's switches. Main focus is on Catalyst 6500 family. Extensive theory is made more mnemonic with multiple labs. The target audience for the course is everyone that needs to configure Catalyst switches.

### Course pre-requisites

- Basic Cisco Switch configuration skills

### Recommended courses before this one

- Cisco Switch Essentials

### Course content

- Advanced STP issues
- VLANs
  - InterVLAN routing
  - VMPS
  - Private VLANs
  - GVRP
  - 802.1Q tunneling
- Multicasting within LAN
- Available QoS
- Configuring security
  - AAA issues
  - Port security
- Building redundancy into LAN networks



## Hands-on ATM Networking

Kurskod: TJ-EDU-18

### Length: 2 Days

Asynchronous Transfer Mode (ATM) has been around for several years. Nowadays it is mainly used in operator networks and it is generally seen to have a strong position there also in the future. One reason for this is the new services that are done on top of ATM. One of the most important ones is xDSL services, which are commonly terminated to ATM switch.

Due to customer demand, Cygate Academy has developed a course to improve ATM knowledge and configuration skills. Target audience is operator support and installation personnel. Main focus is on the basic issues surrounding ATM and they are clarified with theory and multiple labs.

#### Course pre-requisites

- Basic networking knowledge
- Basic Cisco configuration skills

#### Recommended courses before this one

- Networking theoretical studies
- IP Routing and Cisco routers

#### Course content

- Introduction
- Physical layer
- ATM layer
- ATM cell header
- Traffic classification
- Traffic contracts
- AAL categories
- Circuit types
- Tunneling
- Addressing
- Signaling
- ATM routing
- Traffic shaping
- ATM management

## Cisco Device Troubleshooting

Kurskod: TJ-EDU-19



### **Length: 1 Day**

Cisco devices have been all over the world. They are used in all kinds of networks forwarding different kinds of data traffic. One could say that many corporates trust their daily business on reliability of Cisco networking devices.

Even if the hardware and software are implemented to be as fault-proof as possible, occasionally one encounters problems. At that time the more one knows, the quicker the problem in hand is resolved and business can continue its flow.

This course teaches basic troubleshooting skills for Cisco devices. These are essentials in determining, e.g. is the problem in hardware or in software? Also issues like what kind of information is needed if a ticket must be opened and how this is obtained will be detailed. The course is suitable for everybody operating Cisco devices.

#### Course pre-requisites

- Cisco configuration experience

#### Recommended courses before this one

- IP Routing & Cisco routers

#### Course content

- Router and switch architectures
- How to get information from the faulty device
- Handling COMMON issues
- Using Cisco's web-based tools



## **Alteon, produktutbildning**

Kurskod: TJ-EDU-20

**Längd: 3 dagar**

Webswitching är både en kraftfull och komplicerad del av en webinfrastruktur. Att utbilda tekniker inom denna nya teknologi är värdefullt för att få en smidig drift av såväl hemsidor som tjänster.

Alteon uppfann webswitching och Cygate Måldata erbjuder en omfattande utbildning, som hjälper företag att framgångsrikt driftsätta och använda nya webswitching-produkter.

Utbildaren ger en noggrann och detaljerad utbildning, genom att förklara det komplexa på ett enkelt sätt. Denna utbildning ger en grundförståelse för den komplexa värld av weblösningar som finns för hög tillgänglighet - utöver Alteons produkter. Dessa koncept gör det möjligt för tekniker att bygga förstklassiga webstrukturer genom att nyttja en stor variation av produkter och teknologier - där alla delar måste bli jämt optimerade.

### **Kursinnehåll och utrustning**

I utbildningen ingår för lärarledda presentationer, dokumentation samt konkreta övningar vid labb-stationer. Instruktör och deltagare utbyter tidigare erfarenheter för att förstå de praktiska funktionerna som webswitchingprodukter ger.

Labb-stationer används för demonstrationer av hur webcachar dirigerar om datatrafiken, lastbalansering för såväl servrar som brandväggar samt redundans. Deltagarna får göra realistiska konfigurationsövningar och kontrollera resultatet utifrån både klient- och administratörsperspektiv.



## Trådlösa nätverk (WLAN)

Kurskod: TJ-EDW-01

**Längd: 2 dagar**

Syftet är att ge deltagarna en detaljerad teoretisk och praktiskt förståelse hur säkra trådlösa nätverk byggs med dagens tillgängliga tekniker och produkter på marknaden, främst från Cisco Systems. Kursen bygger till stor del på praktiska övningar och deltagarna kommer att sätta upp en komplett trådlös miljö.

### ***Innehåll***

#### **Introduktion**

- Introduktion till trådlösa nätverk av idag.
- Historik, framtid, utmaningar.
- 802.11 a, 802.11 b, 802.11 g.

#### **Grundläggande radioteknik**

- RF, täckningsplanering, "Site Surveys", kanalindelningar, bandbredder.

#### **Säkerhet på trådlösa nätverk**

- Attacker och säkerhetshot.
- Autenticering och kryptering, standarder, WEP, WPA, RSN.
- Dagens metoder för trådlös säkerhet, EAP, LEAP, 802.1X, EAP-FAST.

#### **Ciscos trådlösa nätverk**

- Produkter, tillämpningar. Aironet, ACS, WLSE, WCS, BBSM, 2700 Location Appliance
- Avancerad konfiguration.
- Design och utrullning av stora trådlösa miljöer.
- Managementverktyg.
- "Hot Spots", IP-telefoni, VPN.



## Säkerhet i trådlösa nätverk (WLAN)

Kurskod: TJ-EDW-02

**Längd: 2 dagar**

Syftet är att ge deltagarna en detaljerad teoretisk och praktiskt förståelse hur säkra trådlösa nätverk byggs med dagens tillgängliga tekniker och produkter enligt standardiserade metoder. Kursen bygger till stor del på praktiska övningar och deltagarna kommer att sätta upp en komplett trådlös miljö.

### Innehåll

#### Introduktion

- Introduktion till trådlösa nätverk av idag.
- Historik, framtid, utmaningar.
- 802.11 a, 802.11 b, 802.11 g.

#### Säkerhetsshot

- Denial of Service, Dictionary Attacks, Fysisk Säkerhet

#### Säkerhet på trådlösa nätverk

- Attacker och säkerhetsshot.
- Autenticering och kryptering, standarder, WEP, WPA, RSN/WPA2/802.11i.
- Dagens metoder för trådlös säkerhet, EAP, LEAP, 802.1X, EAP-FAST.

#### Att bygga säkra trådlösa nätverk

- Produkter, tillämpningar. Aironet, ACS, BBSM,
- Avancerad konfiguration.
- Design och utrullning av stora trådlösa miljöer.
- Managementverktyg.
- "Hot Spots", IP-telefoni, VPN.



## Check Point Security Administration NGX I

Kurskod: TJ-EDU-21

**Length: 2 days**

Prerequisites: Basic networking knowledge, knowledge of Windows Server and/or UNIX, and experience with TCP/IP and the Internet

Take this class if:

- You are a systems administrator, security manager, or network engineer who manages VPN-1/FireWall-1 gateway deployments
- Want to earn Check Point Certified Security Administrator (CCSA NGX) NGX certification

More details:

- Table of Contents
- Sample Chapter
- Course Objectives

Check Point Security Administration NGX I is a foundation course for Check Point's flagship product, VPN-1/FireWall-1. This course covers configuring VPN-1/FireWall-1, and provides hands-on training managing a VPN-1/FireWall-1 installation.

You will learn:

- VPN-1/FireWall-1 architecture
- VPN-1/FireWall-1 component deployment
- How to define a Security Policy using SmartDashboard
- How to deploy and manage distributed gateways, using Check Point's SmartUpdate and Secure Internal Communications
- How to administer and troubleshoot VPN-1/FireWall-1 Security Policies
- How to enable SmartDefense global protection mechanisms
- How to set up User Authentication in a VPN-1/FireWall-1 environment
- How to implement Network Address Translation
- How to protect your network with backups
- How to upgrade VPN-1/FireWall-1
- How to license VPN-1/FireWall-1

Exercises:

- Defining VPN-1/FireWall-1 rules, objects, and users
- Establishing basic VPN-1/FireWall-1 Security Policies
- Setting up User Authentication
- Configuring SmartDefense
- Configuring Network Address Translation
- Using SmartUpdate for VPN-1/FireWall-1 installation



## Check Point Security Administration NGX II

Kurskod: TJ-EDU-22

**Length: 3 days**

Prerequisites: Check Point Security Administration NGX I, or equivalent knowledge and experience

Take this class if:

- You are a systems administrator, security manager, or network engineer implementing VPN-1/FireWall-1 for VPN deployments
- Want to earn Check Point Certified Security Expert (CCSE NGX) NGX certification

More details

- Table of Contents
- Sample Chapter
- Course Objectives

Check Point Security Administration NGX II offers advanced training on VPN-1/FireWall-1, and delivers in-depth information on VPN and encryption technologies. This course is designed for Security Administrators and resellers, who require in-depth knowledge of VPN-1/FireWall-1 that goes beyond basic installation, setup, and methodologies.

You will learn:

- Use NGX tools to install NGX on Windows Server 2003 and SecurePlatform
- Use NGX tools to upgrade to NGX, from VPN-1/FireWall-1 NG or VPN-1 NG with Application Intelligence
- Use advanced NGX features to minimize the information-security management burden, when working with objects and rules
- Determine whether Database Revision Control or Policy Package Management is the appropriate solution, given a variety of scenarios
- Identify the features and limitations of Management High Availability
- Use fw monitor to capture and view packets
- Use fw ctl pstat to verify the health of the NGX Security Gateway and SmartCenter Server
- Review VPN-1 debugging and troubleshooting commands, including cpinfo
- Given a variety of Check Point QoS configurations, determine how bandwidth will be allocated
- Identify situations where Low Latency Queueing and Differentiated Services are an appropriate part of a QoS solution



- Configure NGX to allow VoIP traffic to pass through a corporate Security Gateway
- Identify different modes in ClusterXL configuration, and configure ClusterXL VPN
- Configure a Policy Server and SecureClient Rule Base
- Configure route-based VPN and dynamic VPN routing

Exercises:

- Installing VPN-1/FireWall-1
- Setting up SecuRemote and SecureClient for remote-access VPNs
- Configuring logical servers for load balancing
- Using content security to enable Java blocking, URL filtering and anti-virus checking
- Configuring two-gateway IKE encryption



## Check Point Accelerated CCSE NGX

Kurskod: TJ-EDU-23

**Length: 2 days**

Prerequisites: Check Point CCSE NG, or CCSE NG with Application Intelligence certification

Take this class if:

- You are a Check Point CCSE NG, or CCSE NG with Application Intelligence professional
- Want to earn Check Point Certified Security Expert (CCSE NGX) NGX certification

More details

- Table of Contents
- Sample Chapter
- Course Objectives

Check Point Accelerated CCSE NGX offers advanced training on VPN-1/FireWall-1, and delivers in-depth information on VPN and encryption technologies. This course is designed for Security Administrators and resellers, who require in-depth knowledge of VPN-1/FireWall-1 that goes beyond basic installation, setup, and methodologies.

You will learn:

- How to install and configure VPN-1/FireWall-1 for enterprise VPN deployment
- How to configure and deploy SecuRemote and SecureClient
- How to set up VPN desktop policies for SecureClient
- How to use the SecureClient Packaging Tool, for easy software configuration and deployment
- General VPN-1/FireWall-1 security functions
- Content-security options, including URL filtering

Exercises:

- Installing VPN-1/FireWall-1
- Setting up SecuRemote and SecureClient for remote-access VPNs
- Configuring logical servers for load balancing
- Using content security to enable Java blocking, URL filtering and anti-virus checking
- Configuring two-gateway IKE encryption

## **Nokia IPSO för FW-1-administratörer**

Kurskod: TJ-EDU-24

**Längd: 2 dagar**

Denna utbildning är en introduktion till operativsystemet IPSO och innehåller allt en FireWall-1 administratör behöver veta om IPSO. Moment såsom att installera, uppgradera och konfigurera operativsystemet och dess mjukvarupaket ingår i kursen.

### **Förkunskapskrav**

Det är önskvärt att deltagaren har kunskaper om TCP/IP och Unix. Det är också en klar fördel om deltagaren har gått utbildningarna VPN-1 / FireWall-1 Management NG I eller motsvarande.

### **Kursinnehåll**

- Uppgradera IPSO.
- Installera och uppgradera mjukvarupaket (exempelvis Check Point FireWall-1).
- Konfigurera IP addresses, static routes etc. samt hur man använder Voyager Web-GUI
- Hur du administrerar IPSO säkert via HTTPS eller SSH.
- Att hantera multipla IPSO konfigurationer.
- Backup och återställning av backup
- Konfigurera, testa och felsöka VRRP.
- Hur man använder clish för att konfigurera IPSO via kommandoprompten



## Linux Red Hat Security Administration

Kurskod: TJ-EDU-25

### Length: 2 days

The goal of this course is to teach Linux users the techniques and methods used to secure and administer a Linux System. The course also includes the installation and basic configuration of some common services, such as web, DNS, DHCP and mail.

### Prerequisites

This course is intended for Linux or UNIX users, who understand Linux basics. The participants are therefore requested to have this experience.

### Course outline

- File system Management
- System Initialization and Services
- Network Configuration
  - Network Device Recognition
  - Network Interfaces
  - Address Resolution Protocol
  - Interface Configuration Files
  - Binding Multiple IP Addresses
  - Using iptables and ipchains
- General System Security
- Pluggable Authentication Modules (PAM)
- General System Optimization
- Kernel Security and Optimization
- System Hardening and Benchmarking Tools
  - Bastille
  - CIS
  - Sudo
- Cryptography and Authentication
  - OpenSSH
  - OpenSSL
  - GnuPG
- Monitoring and System Integrity
  - Logcheck
  - Tripwire
- Installation and Configuration of the Qmail Mail Transfer Agent
- Installation and Configuration of the Apache Web Server
- Installation and Configuration of a DHCP Server
- Installation and Configuration of a DNS Server (Bind)



## Cisco PIX Essentials

Kurskod: TJ-EDU-26

### Length: 2 Days

Network security is one of the most important issues in modern networks. The need for secure networks arises from the fact that more and more companies have multiple connections to and through the public, and therefore unregulated, Internet.

This course introduces the student to the world of the Cisco PIX firewall. Theory, which covers general security issues, firewall fundamentals and Cisco PIX architectures are put in context by the practice of multiple lab exercises.

#### Course pre-requisites

- Solid understanding of IP networking
- Understanding of IP routing

#### Recommended courses before this one

- TCP/IP theoretical studies
- IP Routing and Cisco routers

#### Course content

- Security in IP networks
- Cisco PIX firewall
- Firewall as a network component
- Basic PIX configuration
- Address translations
- Access control configuration



## Security with Cisco Routers

Kurskod: TJ-EDU-27

### Course Length: 3 Days

Securing the routing infrastructure is one of the most important issues facing network administrators besides securing the networks themselves. The need for router security is increasing all the time - for example CERT has announced that attacks on the Internet infrastructure will become more common.

This course will detail all the relevant Cisco router security features. Extended theory sessions will be followed by numerous well-selected lab exercises.

#### Course pre-requisites

- Knowledge of Cisco router configuration
- Understanding of IP protocol

#### Recommended courses before this one

- IP routing and Cisco routers

#### Course contents

- Securing router access
- AAA services
- Access control lists
- Advanced traffic filtering
- Filtering with routing
- Intrusion detection



## Building Secure VPN Networks

Kurskod: TJ-EDU-28

### Length: 2 Days

IP security architecture was originally developed for IPv6 but, due to its integration into IPv4, has already gained wide popularity. The most common usage of IPsec in modern networks is to create secure tunnels through untrusted networks. Normally this is achieved by creating IP tunnels between two LANs interconnected via the Internet. This technique has many applications including enabling employees to securely connect to corporate LANs from remote locations.

In common with other Cygate Academy courses the theory of IPsec is detailed extensively and supplemented by the hands-on skills of numerous lab practices where a VPN-based network is built.

#### Course pre-requisites

- Knowledge of Cisco router configuration
- Understanding basic IPv4 and routing issues

#### Recommended courses before this one

- IP routing and Cisco routers

#### Course content

- VPN – the need and the possibilities
- The components of IPsec architecture
- Where could we use IPsec
- Selection key exchanges
- Selection of authentication and encryption
- Using different key types in IPsec connection origination
- Using certificate authority for IPsec connection establishment



## Secure Wireless Networking

Kurskod: TJ-EDU-29

### Length: 2 Days

Wireless Networking is the hottest technology in the world of networking as it allows always-on access to the internet, email and other everyday business and leisure applications. In the last year alone the shipping of wireless LAN products has tripled and growth is expected to accelerate.

However, one of the main disadvantages often cited when it comes to any talk of WLANs is security – many administrators have been put off installing WLANs for fear of the security risks. At the same time administrators are coming under more and more pressure to establish secure and reliable WLANs within their business environment. With the careful use of VPN encryption, authentication and monitoring it has now become possible to have both – WLANs and security.

This exciting new course discusses the ins and outs of WLANs with large portions of the course devoted to hands-on labs which teach the necessary skills to install, configure, and troubleshoot secure wireless LAN hardware peripherals and protocols.

### Course prerequisites

- Good knowledge of TCP/IP
- Good knowledge of networking (e.g. CCNA, MCP, A+ standard)

### Recommended courses before this one

- TCP/IP theoretical studies
- IP Routing and Cisco routers

### Course content

- Radio frequency technologies
- Wlan technologies
- Wlan implementation and management
- Wlan security
- Wlan industry and standards



## **Cisco Info Center / Micromuse Netcool**

Kurskod: TJ-EDU-30

**Längd: 3 dagar**

Denna kurs omfattar alltifrån introduktionsmoment till administration och konfiguration av Cisco Info Center / Micromuse Netcool och vänder sig till driftpersonal, tekniker, systemadministratörer. Kursen består mestadels av praktiska övningar.

Förkunskaper

Deltagaren bör ha goda kunskaper om Unix och TCP/IP.

### **Kursinnehåll**

- Installation
- Introduktion till GUI och Webtop och dess användning
- Hur man skapar vyer och profiler
- Användaradministration
- Filtrering av larm
- Korrelering av larm, regelhantering
- Genomgång av olika prober och regelfiler
- Genomgång av gateways och dess funktionalitet
- Back-up och restore av system och databas
- Failover

## Cisco Works 2000

Kurskod: TJ-EDU-31

**Längd: 2 dagar**

Denna kurs omfattar alltifrån introduktionsmoment till administration och konfiguration av Cisco 2000. Den vänder sig till tekniker, nätverksadministratörer och driftpersonal. Kursen består mestadels av praktiska övningar och ett stor del utgörs av LMS.

### Kursinnehåll

- Installation
  - Hantering av patchar & uppdateringar
  - Start/stop av CW2000
  - Krav på konfigurationen på Cisco-enheterna
- Generell konfiguration
  - Discovery , SNMP-parametrar
  - Behörigheter
  - Backup
  - Synkronisering mellan ANI & RME databas
- Konfiguration per modul
  - CiscoView
    - populera master device list
    - schemalagd nedladdning av uppdaterat device support
  - Resource Manager Essentials
    - reachability monitor
    - inventering
    - konfigurationshantering
    - batchkörning av konfigurationsförändringar
    - syslog
  - Campus Manager
    - topology services , kartfunktion
    - path analysis
    - vlan manager
  - Device Fault Manager
    - uppsättning av övervakad utrustning
    - genomgång hur övervakningen fungerar och vad den klarar av
    - larmhantering



- Real Time Monitor
  - genomgång av funktioner
- Felsökning
  - Genomgång av processer och loggar



## **Symantec LiveState Delivery, Administration**

Kurskod: TJ-EDU-32

### **Length: 4 days**

This course is designed for people who will be responsible for installation, operation and administration of CCM in the company.

### **Goal**

After the course, the attendees should be able to implement CCM in their companies. This includes planning, installation, administration and problem determination.

### **Course content**

The course consists of theory and hands-on demonstrations, mixed by exercises and workshops. Each participant has access to a server and a client for the exercises.

For problem determination, errors are introduced by the teacher to be solved by the attendees.

The course discusses the following topics:

- Introduction of the concept, overview.
- Installation of a CCM server.
- Access routines for a server.
- Installation of the Administration console.
- Understanding the Administration console.
- Depot Manager - administration and modification of packages.
- Discussion of dependencies.
- Directory structure on server and client - important files.
- Preparation of clients.
- Client boot sequence.
- Generate boot floppy.
- Create and modify groups of clients.
- Clients in cooperative mode.
- Designing a CCM network.
- Network load, tuning.
- Techniques for problem determination, analyzing and tracking - practical experiences, hints and tips.
- Upgrading a CCM server.
- Installation and presentation of Remote – client take over.
- Orientation about scripting using Development Studio.
- Presentation and discussion of other products and utilities.

### **Prerequisites**



Good knowledge of Windows NT, Windows 2000 and TCP/IP network.  
Knowledge about CCM is not required.



## **Symantec LiveState Delivery, Scripting**

Kurskod: TJ-EDU-33

### **Length: 4 days**

This course is designed for people responsible for implementation and customization of CCM in the company.

### **Goal**

After the course, the attendees should be able to create the necessary CCM software packages and client modifications to fit their companies need.

### **Course content**

The course consists of theory and hands-on demonstrations, mixed by exercises and workshops. Each participant has access to a server and a client for the exercises.

The course discusses the following topics:

- Introduction of the scripting concept, overview.
- Windows, buttons, reboots
- The various steps
- Utilities
- Files involved, their contents and role
- The Itool utility
- Admin parameters
- Compiling and de-compiling
- How to create a package?
- Dependencies
- Reboot, multiple reboots
- Uninstall packages
- Debug mode, problem determination
- Hints and tips
- Registry modifications
- Windows settings, icons, etc.
- CCM Development Studio as a tool
- User Profile Manager
- Regdat3
- AWK Scripts

### **Prerequisite**

Symantec Live State Administration Course.

## **Spectrum Administration**

Kurskod: TJ-EDU-34



**Length: 2 days**

## **Installation and Migration**

### 1. Spectrum Installation

- Supported platforms
- Minimum requirements
- Optimization

### 2. Upgrading

- Considerations
- Migrating

### 3. Beginning with Installation

- NT platform
- Unix platform

## **Spectrum Architecture**

### 1. SpectroServer

- SSAPI, DCM
- SNMP
- Processd, SSDB
- Location Server
- SpectroServer Performance
- Landscapes
- Model type and Models
- Handles and relations

### 2. SpectroGRAPH

## **User Editor**

### 1. Create, Modify, Destroy users and user groups



## Views

### 1. Device Icon Hotspots

- Configuration View
- Device View
- DevTop View
- Application View
- Performance View

## Event Log

- Components

## Alarm Manager

- Roll ups
- Conditions
- Alarm Management
- Fault Management

## Manual Modeling

- Types of models
- How to
- Live Links

## Auto Discovery

- By range
- By Router
- By IP List

## Search Manager

- Predefined Criteria
- Search Results

## SpectroServer Database Management

- DDM
- On-Line Back-up
- Recovery



## **Web Operator**

- Model Browser
- Alarm Manager
- Alarm Ticker
- Model Search
- Reports
- Custom Collections

## **Fault Management**

- Fault isolation
- Roll-up & escalation

## **Watch Manager**

- Creating watches
- Manage watches

## **Integration to external action request systems**

- Escalation
- Problem solving solutions

## **Reports**

- Standard reports
- Formatter, Generator & Display
- Baselineing



## Concord eHealth, rapporttolkning

Kurskod: TJ-EDU-35

### Längd: 1 dag

Denna kurs är avsedd för alla med behov av att kunna läsa och tolka rapporter för att kunna planera kapacitet och prestanda i proaktivt syfte. De olika standardrapporterna går igenom och deltagaren kan efter avslutat kurs göra korrekta bedömningar utifrån genererade rapporter. Kursen vänder sig till nätverksadministratörer, tekniker, driftpersonal och projektledare, säljare m m. Inga särskilda förkunskapskrav utöver grundläggande kännedom om TCP/IP.

### Kursinnehåll

- Presentation av Network Health
- Olika rapporttyper i Network Health
- Analysen i Network Health (Healthindex, Exceptions, m.m.)
- Begrepp i Network Health (Availability, Reachability, m.m.)
- Genomgång av Trendrapporter
- Genomgång av At-a-Glance rapporter
- Genomgång av TopN rapporter
- Genomgång av Healthrapporter
- Genomgång av Service Level rapporter
- Att arbeta i webgränssnittet
- Avslutning och diskussion



## **Concord eHealth, administration**

Kurskod: TJ-EDU-36

### **Längd: 2 dagar**

Denna kurs är avsedd för tekniker och nätverksadministratörer som arbetar med administration och konfiguration av Concord eHealth. Deltagaren får lära sig att administrera och konfigurera produkten samt skapa anpassade rapporter.

### **Kursinnehåll**

1. Introduktion till eHealth
2. eHealth topologi – GUI och webbgränssnitt
3. Arbetsmetod
  - a. Discover
  - b. Modify Agents / Names
  - c. Grouping
  - d. Reports
  - e. Custom Reports
  - f. Set up Web Users
  - g. Scheduler / MyHealth