High-Touch Delivery Learning Services

Implementing Cisco Service Provider Mobility CDMA Networks

The Implementing Cisco® CDMA Packet Core Networks (SPCDMA) Version 1.0 is an instructor-led course that is presented by Cisco training partners to customers who use products that are part of the Code Division Multiple Access (CDMA) packet core. This five-day course is designed to help network professionals improve their skills and knowledge in implementing CDMA packet core architecture fundamentals.

The major part of the course includes detailed information on 3rd Generation Partnership Project 2 (3GPP2) standardized technologies that are implemented on the PDSN/HA Packet Data Serving Node (PDSN) and Home Agent (HA). The PDSN and HA interaction with authentication, charging, and billing components on the network are also discussed. This course includes configuration details of how the PDSN and HA components are implemented on the Cisco ASR 5000 Series system.

A portion of the course is dedicated to explaining how a CDMA access network can interwork with a 4G packet core. The role of the High Rate Packet Data (HRPD) Serving Gateway (HSGW) is discussed as well as configuration details.

Duration

Five days.

Target Audience

The primary audience for this course is as follows:

- Network administrators
- Network engineers
- Network managers
The secondary audience for this course is as follows:

- All individuals preparing for the Cisco Service Provider Mobility CDMA to LTE Specialist Certification

**Course Objectives**

After completing this course, the learner will be able to meet these overall objectives:

- Describe and understand 3GPP2 CDMA architecture fundamentals.
- Implement a Cisco PDSN/HA solution and configure Cisco PDSN features for simple IP services.
- Implement a Cisco PDSN solution and Cisco HA solution for mobile IP services.
- Implement the Cisco HSGW solution and configure Cisco HSGW features for 4G interworking service.
- Describe and configure tunneling features available on Cisco PDSN/HA.
- Describe and configure Cisco ASR 5000 Series inline services.
- Know the basics of configuring the Cisco ASR 5000 Series system.
- Know the organizations that are developing technologies used in the mobile packet core such as the Internet Engineering Task Force (IETF) and 3GPP2.

**Course Prerequisites**

The knowledge and skills that a learner must have before attending this course are as follows:

- Good knowledge of routing and switching
- Basic knowledge of radio network functions
- Basic knowledge of packet core supporting functions for Authentication, Authorization, and Accounting (AAA)
- Basic knowledge of tunneling protocols Generic Routing Encapsulation (GRE), Layer 2 Tunneling Protocol (L2TP), and Internet Protocol Security (IPsec)
- Familiarity with and basic knowledge of configuring the Cisco ASR 5000 Series system
- Understanding of organizations that develop technologies used in the mobile packet core such as the Internet Engineering Task Force (IETF) and the 3rd Generation Partnership Project2 (3GPP2)

**Participant Material Requirements**

Participants are required to bring the following materials to this training course:

- Laptop or notebook computer with
  - Terminal emulation program (such as PuTTY available at [http://www.chiark.greenend.org.uk/~sgtatham/putty/](http://www.chiark.greenend.org.uk/~sgtatham/putty/)) capable of Telnet and SSH.
  - IEEE 802.11 (A, B, G, N) Wi-Fi interface.

Participants are responsible for all travel and expenses.
Course Outline

The course outline is as follows:

- **Module 1: CDMA Packet Core Fundamentals**
  - Lesson 1: Introduction to the CDMA Packet Core
  - Lesson 2: Introduction to Simple IP Services
  - Lesson 3: Introduction to Mobile IP Services
  - Lesson 4: Introduction to evolved High-Rate Packet Data (eHRPD) Services
  - Lesson 5: Role of Layer 2 Tunneling Protocol (L2TP) Services
  - Lesson 6: Introduction to DIAMETER

- **Module 2: Implementation of Simple IP on the Cisco PDSN**
  - Lesson 1: Introduction to the Cisco PDSN and Simple IP
  - Lesson 2: Introduction to Cisco ASR 5000 Configuration Terminology
  - Lesson 3: Configuring Simple IP Service
  - Lab 2-1: Configuring PDSN Connectivity
  - Lab 2-2: Configuring PDSN Simple IP Service
  - Lesson 4: Implementing Cisco PDSN Procedures and Policies

- **Module 3: Implementing Mobile IP on the Cisco Home Agent**
  - Lesson 1: Implementing Cisco Mobile IP
  - Lesson 2: Configuring Cisco Mobile IP Service
  - Lab 3-1: Configuring the Foreign Agent
  - Lab 3-2: Configuring Cisco HA Connectivity
  - Lab 3-3: Configuring Cisco HA Mobile IP Service
  - Lesson 3: Cisco HASignaling Procedures
  - Lab 3-4: Configuring Proxy Mobile IP

- **Module 4: Charging in a 3G CDMA Network**
  - Lesson 1: 3G Charging Procedures and Policies
  - Lab 4-1: Configuring the Diameter Credit Control Application (DCCA) on a Cisco HA

- **Module 5: Implementing the HSGW**
  - Lesson 1: The Role of the HSGW in 4G Networks
  - Lesson 2: Configuring Cisco HSGW Service
  - Lab 5-1: Configuring HSGW Connectivity
  - Lab 5-2: Configuring Cisco HSGW Services
  - Lesson 3: Policy and Charging on HSGW
  - Lab 5-3: Configuring a Cisco HSGW RF Interface
• Module 6: Tunneling Protocols
  • Lesson 1: Tunneling Protocols in CDMA Networks
  • Lesson 2: L2TP Tunnels on a Cisco PDSN
  • Lab 6-1: Configuring L2TP on a Cisco PDSN
  • Lab 6-2: Configuring L2TP on a Cisco HA
  • Lesson 3: Integrating a Cisco HA with an Multiprotocol Label Switching (MPLS) Network
  • Lesson 4: Configuring Internet Protocol Security (IPsec) on a Cisco PDSN/HA
• Module 7: Cisco Enhanced Charging Service (ECS) Inline Services
  • Lesson 1: Configuring Advanced Cisco ECS Features

Registration Email
For more information about schedules and registration for this course, contact aeskt_registration@cisco.com.

Website Addresses for More Information
For more information about Cisco High-Touch Delivery Learning Services for Cisco classic products and technologies, see http://www.cisco.com/go/ase.
For information about Cisco TelePresence® training, see http://www.cisco.com/go/telepresencetraining/.
For information about broadband video training for service providers, see http://www.cisco.com/go/spvtraining.