



ITU Training on
Certified IPv6 Network Engineering – Level 2 (CNE6 Level 2) for Arab LDCs
Khartoum-Sudan, 2-6 April 2017

TRAINING OUTLINE

COURSE DESCRIPTION

| | |
|-----------------------|--|
| Title | Certified IPv6 Network Engineering – Level 2 (CNE6 Level 2) |
| Objectives | <ul style="list-style-type: none">✓ Understand key protocol differences of IPv6 versions of RIP, OSPF and BGP✓ Describe routing protocols interactions in dual stack environments✓ Recognize the configuration of DHCPv6-PD on different platforms✓ Describe the key security vulnerabilities around NDP✓ Describe the key security vulnerabilities around IPv6 addressing structure |
| Dates | 2-6 April 2017 |
| Duration | 5 Days |
| Registration deadline | 20 March 2017 |

LEARNING OUTCOMES

- ✓ Plan and manage the migration of your network to IPv6
- ✓ Install and configure associated network services such as DHCP and routing protocols.
- ✓ Learn how to route and configure the routing protocols for the dualstack networks.

TARGET POPULATION

- ✓ Network Engineers and Applications Developers; who have been restricted with IPv4 limitations,
- ✓ Network Administrator; who are aware of the IPv4 exhaustion,
- ✓ IT manager; who want to convince the organization administrators to migrate to IPv6,
- ✓ CTO; who think about organization business continuity,
- ✓ Academic Staff; who believe that IPng is an essential part of the Future Networks,

Prerequisites

It is necessary the participants are:

- ✓ Have a strong knowledge of IPv6 or Certified Network Engineer (CNE6) Level 1 or equivalent to (CNE6) Level 1
- ✓ Have a good knowledge of general networking concepts and
- ✓ Have a good knowledge of Routing Protocols and router configuration skill

Teaching Language

Arabic

TUTORS/INSTRUCTORS

| NAME OF TUTOR(S)/INSTRUCTOR(S) | CONTACT DETAILS |
|---------------------------------|-----------------------------|
| Dr. Ahmed Abdalla Mohamed Ali | ahmedflaminko@yahoo.com |
| Eng. Sara Alamin Mohamed Hassan | sara.alamin90@gmail.com |
| Eng. Salih Shihab Eldin Mahmoud | salih.sahihab@sudren.edu.sd |

EVALUATION

Participants need to attend all sessions including the practical hands on session and perform the experiments. Besides, they have to pass the subjective and the objective exams at the end of the course.

TRAINING SCHEDULE AND CONTENTS / AGENDA

The CNE6 Level 2 courses required 30 hours in four days, (22 hours for presentations, 8 hours for hands-on Labs) and the 5th day for examination.

Course Contents

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| Day 1: |
| <ul style="list-style-type: none">• CNE6 Level 1 Refresh• Routing Concepts<ul style="list-style-type: none">○ General Overview○ Distance Vector Routing Protocol (RIP)○ Link State Routing Protocol (OSPF)○ Path Vector (BGP) |
| Day 2: |
| <ul style="list-style-type: none">• IPv6 Transition Mechanisms Revisited• Lab 1 - RIPng Configuration & OSPF Configuration• Lab 2- BGP Configuration• NAT64 Details |
| Day 3: |
| <ul style="list-style-type: none">• DHCPv6 Revisited<ul style="list-style-type: none">○ Understanding Stateless & Stateful Address Autoconfiguration○ Understanding DUID○ How DHCP6 Works• IPSec• Lab 3- IPsec Configuration |
| Day 4: |

- Security Consideration
- Campus Deployment

Day 5:

- CNE6 Level 2 -Exam

Daily Schedule

| Serial | Topic | Time |
|--------|--|---------------|
| 1. | Registration and Opening (1 st Day) | 09:00 – 10:00 |
| 2. | Session -1 | 09:00 – 11:00 |
| 3. | Coffee Break | 11:00 – 11:30 |
| 4. | Session -2 | 11:30 – 13:30 |
| 5. | Lunch | 13:30 – 14:30 |
| 6. | Session -3 | 14:30 – 15:30 |
| 7. | Coffee Break | 15:30 – 16:00 |
| 8. | Session -4 | 16:00 – 17:00 |

METHODOLOGY

CNE6 Level 2 is 2/3 theoretical session 1/3 practical session. Theoretical session will be in the form of Instructor-led presentations, case studies, assignments, and quizzes. A round of Q&A and discussion will be held after each session.

Hands-on sessions are facilitated with a Virtual Network Lab.

TRAINING COORDINATION

TRAINING COORDINATOR

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ITU COORDINATOR

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REGISTRATION

Please fill the registration form and return it back to Eng. Mustafa Al Mahdi, Associate Programme Officer of ITU-Arab Regional Office (mustafa-ahmed.al-mahdi@itu.int), and Eng. Akram Omer Hassanin, IT Manager, NTC-Sudan (akram@ntc.gov.sd)