Training course outline

ITU Regional office for Arab States and TPRA Sudan

Title	**Certified Network Engineer for IPv6 (CNE6) - Gold Level**
Modality	Face-to-face Khartoum-Sudan
Dates	**27-29 November 2022**
Duration	3 Days
Registration deadline	21 Nov
Training fees	Free
Description	The CNE6 Gold is an advanced level training program for IPv6 network engineering. This course is designed to provide in-depth knowledge on how to design, implement and operate IPv6 networks.
Code	22WS500137ARB-E-D

1. LEARNING OBJECTIVES

The Certified Network Engineer for IPv6 (CNE6) Gold Level (Level-2) training course is designed to provide the participants with advanced information on IPv6 technology and to expose the participants on the technical know-how to start the IPv6 deployment and implementation.

2. LEARNING OUTCOMES

By the end of these training courses, the participants will be able to learn:
- IPv6 fundamental refresher
- IPv6 routing
- Re-visit IPv6 transition mechanisms
- DHCPv6
- IPv6 Mobility

- IPSec
- IPv6 security considerations
- IPv6 deployment case studies
- hands-on Lab for IPv6 routing

3. TARGET POPULATION

This course is designed for network administrators, network support personnel, network designers, networking consultants, IP based networks specialist, IT managers and IT directors.

4. ENTRY REQUIREMENTS

Interested applicants/participants should have:
- CNE6 Silver certification or any equivalent certifications
- A good knowledge of general network security concepts
- Knowledge in IPv4 security

5. TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)
1. Eng. Hiba Alamin Email. Hiba.alamin@gmail.com 2. Eng. Intisar Elhaj Email: intisarus@gmail.com 3. Eng. Rawan Shreef Email: rawanshreef.rs@gmail.com 4. Eng. Sara Alamin Email: sara.alamin@protonmail.com

6. TRAINING COURSE CONTENTS

The following IPv6 topics will be covered during the course:
1. IPv6 fundamental refresher
2. IPv6 Routing
3. IPv6 transition strategies
4. DHCPV6
5. IPv6 mobility
6. IPv6 security consideration
7. IPv6 deployment
8. Hands-on lab

7. TRAINING COURSE SCHEDULE

Session	Topic	Exercises and interactions
Day 1: 27 Nov	● IPv6 fundamental refresher ● IPv6 Routing ● Lab 1	● Understand key protocol differences of IPv6 versions of RIP, OSPF, ISIS and BGP ● Describe routing protocols interactions in dual stack environments ● Examine packet captures and determine functioning of routing protocols
Day 2: 28 Nov	● IPv6 Routing ● Lab2 ● IPv6 transition strategies ● DHCPV6 ● Quiz1	● Examine packet captures to determine transition techniques and their functioning ● Describe how both stateless and stateful DHCPv6 works ● Recognize correct configuration of SLAAC and DHCPv6 on different platforms
Day 3: 29 Nov	● IPv6 mobility ● IPv6 security consideration ● IPv6 deployment ● Quiz 2	● Understand network security issues with IPv6 ● Ensure adequate filtering capabilities for IPv6 networks ● Understand the use of IPsec to authenticate and provide confidentiality to assets ● Understand how to implement security aspects of transition mechanisms ● Understand Managing and Monitoring of IPv6 Networks
Day 4: 30 Nov	CNE6 - Gold Exam	8:30 - 9:30

8. METHODOLOGY (Didactic approach)

▪ This class covers both theoretical and practical knowledge.
▪ The training would involve both theory and practical led by the instructor.
▪ The practical classes are conducted in a laboratory environment.
▪ The participants will have hands-on experience using the actual equipment.
▪ Quizzes will have conducted during the class to test the knowledge of participants about a particular sub topic
▪ Professional examination both theoretical and practical will be conducted to test the participant's knowledge towards end of the class

▪ Participants that passed the examination will be awarded a training certificate from ITU and TPRA and according to ITU training certificate.

9. EVALUATION AND GRADING

Participants' performance in this training will be determined using a combination of grades for the participation sessions discussions and self-assessment quizzes.
Where:
- Participation in the sessions will be awarded 10 percent.
- Self- Assessments quizzes will be worth 20 percent of the final grade of the training.
- Final examination for getting the professional certificate. and will be worth 70 percent of the final grade of the training.

Please note that a total score higher than 60% is required to obtain the ITU and TPRA-Sudan training certificate.

10. TRAINING COORDINATION

Host Coordinator:	ITU Coordinator:
Eng Ahmed Atyya Numbering Manager, at TPRA, Email: (ahmed.atyya@tpra.gov.sd)	**Eng. Mustafa Al Mahdi** Programme Officer ITU Arab Regional Office Email: mustafa.almahdi@itu.int

REGISTRATION

When you have an existing account or created a new account, you can register for the course online at the following link:

https://academy.itu.int/user/login?destination=/training-courses/full-catalogue/certified-network-engineer-ipv6-cne6-gold-level