ITU Centres of Excellence Network for Arab Region

Smart Tunisian Technoparks (S2T)

Online Training Course on
"Domain Name System Security Extensions (DNSSEC)"
21 - 27 September 2020

COURSE OUTLINE

COURSE DESCRIPTION

Title	**Domain Name System Security Extensions (DNSSEC)**
Method of delivery	Online
Objectives	The Domain Name System (DNS) is a critical part of Internet infrastructure and the largest distributed Internet directory service. DNS translates names to IP addresses, a required process for web navigation, email delivery, and other Internet functions. However, the DNS infrastructure is not secure enough unless the security mechanisms such as Transaction Signatures (TSIG) and DNS Security Extensions (DNSSEC) are implemented. To guarantee the availability and the secure Internet services, it is important for networking professionals to understand DNS Security / DNSSEC concepts, configurations, and operations. The main objectives of this training are to understand the basic concepts of DNSSEC.
Dates	21 – 27 September 2020
Duration	7 Days
Registration deadline	11 September 2020
Training fees	150 USD
Course code	20OI24943ARB-E

LEARNING OUTCOMES

This training aims at providing all participants with extensive insights on "Domain Name System Security Extensions (DNSSEC)".

It is expected that upon completion of the training session, participants will be able to:

- ✓ Understand the basic concepts of DNS security.
- ✓ Know how to configure a DNSSEC-enabled resolver for your network.
- ✓ Know how to configure basic DNSSEC for your domains.
- ✓ Know how to configure reverse DNSSEC records for your networks.
- ✓ Be familiar with DNSSEC-related tools and procedures.
- ✓ Know how to troubleshoot basic DNSSEC problems.

TARGET POPULATION

This training targets engineers, systems and network administrators, and technical personnel in domain name registries and registrants. It also targets decision-makers, project managers, and strategists as well as consultants and security professionals who need a deeper understanding of how Domain Name System Security and its extensions (DNSSEC) works, as well as individuals interested in building their Cyber security capabilities.

TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Dr. Ryma Abassi is an Engineer, Assistant Professor at ISET'Com, and a Researcher at SUP'Com (Higher School of Communication of Tunis). She is delivering seminars in wide variety of subjects related to cybersecurity and IT networks at an international level with ITU (International Telecommunication Union).	ryma.abassi@edu.isetcom.tn

EVALUATION

I. Post Test.
II. Case Study.
III. Field work assignment.

TRAINING SCHEDULE AND CONTENTS / AGENDA

Date for 1st day	Time; Start time	Topics/Activities
21/09/2020	09:00 - 12:00	**Introductions** − Introduction to DNS − DNS transactions − Introduction to cryptography − Hash functions, signature, etc.

Date for 2nd day	Time; Start time	Topics/Activities
22/09/2020	09:00 - 12:00	**DNS Security review:** − Vulnerabilities − DNS attacks vector
Date for 3rd day	**Time; Start time**	**Topics/Activities**
23/09/2020	09:00 - 12:00	**Fortifying a DNS service** − Security of the basic system and software environment − Security measures in transactions − Security measures for protecting data
Date for 4th day	**Time; Start time**	**Topics/Activities**
24/09/2020	09:00 - 12:00	**DNSSEC:** − How DNSSEC works − Zone signing keys − Chain of trust
Date for 5th day	**Time; Start time**	**Topics/Activities**
25/09/2020	09:00 - 12:00	**DNSSEC validation:** − Validating DNSSEC in the Internet − DNSSEC validation in Web-Browsers
Date for 6th day	**Time; Start time**	**Topics/Activities**
26/09/2020	09:00 - 12:00	**DNSSEC Troubleshooting:** − Query Path − Logging − Common Problems
Date for 7th day	**Time; Start time**	**Topics/Activities**
27/09/2020	09:00 - 12:00	**Transaction Signature (TSIG):** − TSIG principles **DNS Security future trends map** **Test Evaluation**

METHODOLOGY

The on-line program will include Instructor-led presentations, Case Studies, Group Exercises, and Quizzes.

COURSE COORDINATION

Training Coordinator:	**ITU Coordinator:**
Mrs. Houda Jarraya Focal point at S2T Tel: + 216 71 856 073 Mobile: +216 97 879 228 / 28 300 878 Fax: +216 71 857 803 Email : houda.jarraya@s2t.tn houda.jarraya@gmail.com	**Eng. Mustafa Al Mahdi** Programme Officer ITU Arab Regional Office Tel: +202 3537 1777 Mobile: +20114 1177573 Fax: +202 3537 1888 Email: mustafa-ahmed.al-mahdi@itu.int

REGISTRATION AND PAYMENT

ITU Academy portal account

Registration and payment should be made online at the ITU Academy portal.

To be able to register for the course you MUST first create an account in the ITU Academy portal at the following address:

https://academy.itu.int/index.php/user/register

Training 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/index.php/training-courses/full-catalogue/domain-name-system-security-extensions-dnssec-0
You can also register by finding your desired course in our training catalogue https://academy.itu.int/index.php/training-courses/full-catalogue

Payment

1. On-line payment

A training fee of USD 150 per participant is applied for this training. Payments should be made via the online system using the link mentioned above for training registration at https://academy.itu.int/index.php/training-courses/full-catalogue/domain-name-system-security-extensions-dnssec-0

2. Payment by bank transfer

Where it is not possible to make payment via the online system, select the option for offline payment to generate an invoice using the same link as above. Download the invoice to make a bank transfer to the ITU bank account shown below. Then send the proof of payment/copy of bank transfer slip and the invoice copy to Hcbmail@itu.int and copy the course coordinator. All bank transaction fees must be borne by the payer.

Failure to submit the above documents may result in the applicant not being registered for the training.

3. Group payment

Institutional Contacts are users that represent an organization. Any student can request to be an institutional contact or to belong to any existing organization.

To do this, head to your profile page by clicking on the **"My account"** button in the user menu. At the bottom of this page you should see two buttons:

a. If you want to **become an institutional contact**, click on the "**Apply to be an Institutional Contact"** button. This will redirect you to a small form that will ask for the organization name. After you fill the name of the organization you want to represent, click on **"continue"** and a request will be created. An ITU Academy manager will manually review this request and accept or deny it accordingly.

b. If you want to **belong to an existing organization**, click on the **"Request to belong to an Institutional Contact"** button. This will redirect you to a small form that will ask you to select the organization you want to join from an organization list. After you select the correct organization, click on **"continue"**, a request will then be created. The Institutional Contact that represents that organization will manually accept or deny your request to join the organization.

ITU BANK ACCOUNT DETAILS:

Name and Address of Bank:	UBS Switzerland AG
	Case postale 2600
	CH 1211 Geneva 2
	Switzerland
Beneficiary:	Union Internationale des Télécommunications
Account number:	240-C8108252.2 (USD)
Swift:	UBSWCHZH80A
IBAN	CH54 0024 0240 C810 8252 2
Amount:	USD 150
Payment Reference:	CoE-ARB 24943 - WBS No. P.40592.1.03

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4. Other method of payment

If due to national regulations, there are restrictions that do not allow the payment to be made using options 1 & 2 above, please contact the ITU coordinator for further assistance.