



ITU Centres of Excellence Network for Arab Region

Smart Tunisian Technoparks (S2T)

Online Training Course on

Domain Name System Security Extensions (DNSSEC)

08-14 March 2021

TRAINING COURSE OUTLINE

COURSE DESCRIPTION

Title	Domain Name System Security Extensions (DNSSEC)
Objectives	This training aims at providing all participants with extensive insights on Domain Name System Security Extensions (DNSSEC).
Dates	08-14 March 2021
Duration	7 Days
Registration deadline	28 February 2021
Training fees	150 USD
Course code	21OI26421ARB-E

DESCRIPTION OF THE TRAINING COURSE

This training will focus on the understanding of the basic concepts of DNSSEC.

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.

LEARNING OUTCOMES

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

By the end of this training, participants should 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.

ENTRY REQUIREMENTS

Cyber security fundamentals.

TUTORS/INSTRUCTORS

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

TRAINING COURSE CONTENTS

DNS Security review.
Fortifying a DNS service.
DNSSEC.
DNSSEC validation.
DNSSEC Troubleshooting.
Transaction Signature (TSIG).

TRAINING COURSE SCHEDULE (Tunis Time)

Week / Session	Time; Start time	Topic	Exercises and interactions
Day 1 8 March 2021	09:00 - 12:00	Introduction to DNS -DNS transactions -Introduction to cryptography -Hash functions, signature, etc.	A forum will be activated in order to interact with the participants (16:00 -17:00)
Day 2 9 March 2021	09:00 - 12:00	NS Security review -Vulnerabilities -DNS attacks vector	A forum will be activated in order to interact with the participants (16:00 -17:00)
Day 3 10 March 2021	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	A forum will be activated in order to interact with the participants (16:00 -17:00)

Day 4 11 March 2021	09:00 - 12:00	DNSSEC -How DNSSEC works -Zone signing keys -Chain of trust	A forum will be activated in order to interact with the participants (16:00 -17:00)
Day 5 12 March 2021	09:00 - 12:00	DNSSEC validation -Validating DNSSEC in the Internet -DNSSEC validation in Web-Browsers	A forum will be activated in order to interact with the participants (16:00 -17:00)
Day 6 13 March 2021	09:00 - 12:00	Transaction Signature (TSIG) -TSIG principles -DNS Security future trends map	A forum will be activated in order to interact with the participants (16:00 -17:00)
Day 7 14 March 2021	Open the whole day	Evaluation	Final evaluation

METHODOLOGY (Didactic approach)

Course materials: Each module will be available for the course material on the website.
 Online Discussion Forums: Participants are expected to participate actively in discussion forums on selected topics throughout the week.

EVALUATION AND GRADING

Evaluation will be based on quizzes every day and a final exam.
 Grading will take into consideration attendance (30%) and a final overall exam (70%).

IMPORTANT: a passing mark of 60% is required for obtaining a completion certificate

TRAINING COURSE COORDINATION

Course 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 address: houda.jarraya@s2t.tn houda.jarraya@gmail.com	ITU coordinator: Eng. Mustafa Al Mahdi Programme Officer Arab Regional Office-ITU Tel: +202 3537 1777 Mobile: +20114 117 75 73 Fax : +202 3537 1888 Email address: mustafa-ahmed.al-mahdi@itu.int
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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 course 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-1>

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. Payment 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-1>

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

Should you wish to pay for more than one participant using bank transfer and need one invoice for all of them, create an account as **Institutional Contact**. **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 26421 - WBS No. P.40592.1.03

4. Other method of payment

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