



ITU Centres of Excellence Network for Arab Region

Naif Arab University of Security Sciences (NAUSS)

Online Training Course on

**“Ransomware Analysis: File Encryption and Decryption Mechanism”
7-8 April 2021**

TRAINING COURSE OUTLINE

COURSE DESCRIPTION

Title	Ransomware Analysis: File Encryption and Decryption Mechanism
Objectives	The objective of this course is to understand Ransomware that is one of the most widely used by cyber attackers nowadays, and to understand encryption and decryption mechanism through analysis Ransomware operating process.
Dates	7- 8 April 2021
Duration	2 Days
Registration deadline	10 March 2021
Training fees	200 USD
Course code	21OI26550ARB-E

DESCRIPTION OF THE TRAINING COURSE

Ransomware is a major technique that is used by cyber attackers. Victims of Ransomware usually paid their money to attackers for decrypt their valuable files encrypted by Ransomware. This training will enable the participants to understand knowledge of types of Ransomware, encryption, and decryption mechanism of Ransomware. This course also provides hands-on practice with a virtual machine for encryption and decryption techniques used by Ransomware.

LEARNING OUTCOMES

By the end of this training, participants should be able to have:

- Knowledge of Ransomware definition and objective.
- Knowledge of types and trends of Ransomware.
- Knowledge of encryption and decryption mechanism used by Ransomware.
- Knowledge of Windows file format.
- Skills to conduct of encryption and decryption.
- Skills in compare between Ransom file and common file with hex view tool.
- Skills in using virtual machine.

TARGET POPULATION

This training is providing a great value for security managers, engineers, technical staff, telecom operators, administrators from government organizations, industry companies and academia, as well as individuals who are interested in Ransomware cyber-attacks.

ENTRY REQUIREMENTS

There is not mandatory prerequisite course to attend this course, but the following knowledge and skills preferred.

- Have a background of computer science and IT related experience.
- Basic level experience in Linux Operating System.

TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Prof. Kyounggon Kim	kkim@nauss.edu.sa

TRAINING COURSE CONTENTS

This course provides the following topics.

- Ransomware definition: Explain a definition and an objective of Ransomware.
- Ransomware history, types, and trends: Explain the Ransomware types and evolution of their techniques.
- Ransomware operating process: Explain the Ransomware process such as finding valuable file, encryption, and require digital money.

- Encryption and decryption: Explain the encryption and decryption mechanism of Ransomware and provides hands-on encryption and decryption such as AES and RSA used in Ransomware.

TRAINING SCHEDULE AND CONTENTS / AGENDA (Riyadh Time)

Day 1. Ransomware introduction		
Date for 1 st day	Time; Start time	Exercises and interactions
07/04/2021	09:00-13:00	Ransomware definition, types, and trends analysis

METHODOLOGY (Didactic approach)

Day 2: Encryption and Decryption		
Date for 2 nd day	Time; Start time	Exercises and interactions
08/04/2021	09:00-12:00	Analysis of Ransomware operating process. Exercise AES cipher and RSA cipher algorithms
	12:00-13:00	Final Exam

- This course provides Instructor-led presentations and provides hands-on practices. Some hands-on practices will provide pre-recorded files.

EVALUATION AND GRADING

- Evaluation for this course is conducted by final overall exam (100%): Participants should attend final exam at the end of this course. A passing mark of 70% is required to get the course completion.

TRAINING COORDINATION

<p>Training Coordinator:</p> <p>Dr. Abdulrazaq Al-Morjan Director of Centre of Excellence in Cyber Crimes and Digital Forensics NAUSS Mobile: +966 54 470 05 53 E-mail: t-aalmargan@nauss.edu.sa</p>	<p>ITU Coordinator:</p> <p>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</p>
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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/ransomware-analysis-file-encryption-and-decryption-mechanism>

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 200 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/ransomware-analysis-file-encryption-and-decryption-mechanism>

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.

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 International des Telecommunications
Account number:	240-C8108252.2 (USD)
Swift:	UBSWCHZH80A
IBAN	CH54 0024 0240 C810 8252 2
Amount:	200 USD
Payment Reference:	CoE-ARB 26550 – WBS No. P.40592.1.09

3. 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.