Cyber Security and Digital Forensics Training Platform
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Partially funded by EU DG Home – Prevention Of and Fight against Crime
DFET Project

• **Outline:** DFET creates new training methods/techniques to support judicial authorities, law enforcement agencies and associated stakeholders in the fight against cybercrime through the development of a virtual (cloud-based) cybercrime training environment to include real life simulation and scenario analysis.

• **Aim:** To improve crime detection rates by providing scenario-based training in line with the dynamic nature of cybercrime. Overall DFET aims to create a training infrastructure which can share cyber training across Europe, and allow access to hands-on environments, no matter the physical location of trainer.

• **Partial Funding:** DG Home – Prevention Of and Fight against Crime.

• **Partners:** Edinburgh Napier University, Joseph Stefan Institute (JSI), Stockholm University, Police Scotland, and Aconite Internet Solutions.

• **Dates:** Jan 2013 – Dec 2015.
DFET Project Contribution

• Creation of a Cloud-based training infrastructure for Law Enforcement, Industry and Academia.
• Real-life virtualized practical sessions, with on-line support.
• Uses real-life devices, tools and systems.
• Credit rating of training against academic framework.
• Coverage of a range of subjects, including cryptography, network forensics, digital forensics, malware analysis, and so on.

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Cyber Security and Digital Forensics Training Platform
Vision and Features
DFET Training

- Cloud - Infrastructure for training and sharing of material

Public Sector
- Evaluation of systems.
- Training.

Law Enforcement
- Triage systems
- Training

Government
- Define standards
- Evaluate products

Industry
- Training/sharing materials.
- Professional certification

Academia
- Training/sharing materials
- Virtualised environments

Software Vendors:
- Test environments.
- Promoting products.
- Providing floating licences

Existing Academic Clouds

Public clouds

Vision

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Features

• Full coverage of cyber security.
• MSc integration.
• Fully virtualised practical environments.
• On-line lectures/demonstrations.
• Integration with Professional Certification.
• Ever changing challenges.
• Integrated feedback.
• On-site or remote training.
Forthcoming Events

• Creation of **CyberFET.com** – On-line material with Cloud integration.

• Creation of **The Cyber Academy** (launch 6 May 2015). Supported by a wide range of organisations, including Scottish Government, Standard Life, Lloyds, and many others.

• Roll-out of training material from Sept 2015.
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Architecture

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DFET Architecture

Instructor

Artifact creation

Simulation agents

Evaluation metrics

Scenario Compilation

Evaluation Engine

[Artifact creation]

[Simulation agents]

[Evaluation metrics]

[Ontology abstraction]

[Ontology abstraction]

[Evaluation metrics]

DFET

DFET Translate Engine

Cloud Training Infrastructure

User interactions

Interface rendering

Ontology definition

Virtual machine calls

Creation of virtual hosts, networks, devices, and so on.

Robotic agents and attack traffic

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DFET EDUFORS Platform

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Phishing Scenario

**Note:** Use HD2 Disk in X-Ways.

**Description of attack:** An attacker tried to gain access to the web hosting server using bruteforce tool. Through ssh he gained access to the server, where he explored the environment (mysql, apache etc.) for possible useful information. Attacker uploaded website and left it running for a while and gained victims data. At the end he deleted his uploaded data. Find the correct answers below.

Choose correct attacker IP:
- 133.240.139.53
- 207.40.75.93
- 132.253.0.70

Choose correct date of attack:
- 2010-03-16 10:06:00
- 2009-11-24 04:46:00
- 2009-11-24 18:16:00

Choose stolen data:
- user passwords
- personal photos
- credit cards

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Cyber FET.com

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CyberFET.com

- **Subjects:** Network and Live Forensics; Security Fundamentals; Cryptography; Malware Analysis; Security Architectures; Data Loss Prevention; Open Source Investigations; Security Risk and Compliance; Cyber Crime; Host-based Forensics; Mobile Device Forensics; Penetration Testing; Incident Response; and Law and Ethics.

- 14 books released to support on-line material.

- Each subject has six teaching elements. 3 hr training elements. Each element with Lecture, Test and Practical Lab.

- Formal test taking with score fed back to student/instructor.

- Virtualised challenges with ever changing challenges.

- New courses being created: DDoS Investigation, Mac Forensics.

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The Cyber Academy
Aims

• Integrate Teaching, Professional Practice and Research into an advanced academic infrastructure.

• Provide international leadership in Cyber Security, especially related to education and professional development.

• Support the development of flexible training programmes, with academic credits.

• Support innovation in Cyber Security from the initial ideas, through funded PhD programs, and onto the end-product.

• Provide a platform for the debate and articulation of key issues in Cyber Security.

• Provide access to members to an advanced and virtualized training infrastructure for Cyber Security, for both evaluation and training.

• Provide integrated academic support for a range of roles from Apprentice Cyber Security professionals to Advanced Research-focused levels.

• Provide a mechanism for increased interaction between organisations and students.

• Integrate with the requirements of law enforcement, industry and the public sector.
How will it work?

• **Collaborative and inclusive model. The Cyber Academy** is a partnership between academia, law enforcement, industry and the public sector, and aims to collaborate with a wide range of organisations on delivering on the key aims for the benefit of its partners.

• **Membership.** It is free to join the Academy at Associate-level, and which will allow organisations to be part of the infrastructure with support for a strong working relationship. Other levels of membership, such as around research and innovation sponsorship, are available and can be discussed with the team.

• **Dissemination. The Cyber Academy** will support a wide range of Conferences, Symposia and Workshops, each focusing on key topics related to Cyber Security, with a special focus on Innovation, Professional Development and Education.

• **Professional Development. The Cyber Academy** integrates with a wide range of professional bodies, and aims to fully integrate academic structures with professional practice and training.
Cyber Security and Digital Forensics Training Platform
In Conclusion
In Conclusion

• 6 May 2015 launch of The Cyber Academy.
• DFET Project looking for partners within the Academy.
• Raid the Flag/EU Cyber Team of the Year On-line Challenge. June 2015.
• October 2015 Symposium of Cyber Security Education – Police College, Tulliallan, Scotland.
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