

# Class Capture The Flag Contest

Silvio Biagioni <sup>1</sup>

<sup>1</sup>Department of Information Engineering and Computer Science,  
University of Trento

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# Outline

Who am I?

DETERLab

Class Capture The Flag

Network Topology

Rounds

Goal

Operational Details

Bank Server Access

Forming Groups

Class Capture The  
Flag  
Contest

Silvio Biagioni

Who am I?

DETERLab

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# Who am I

- ▶ PhD Student

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Who am I?

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# Who am I

- ▶ PhD Student
- ▶ Security Risk Assessment for Attack Surfaceces



# Who am I

- ▶ PhD Student
- ▶ Security Risk Assessment for Attack Surfaceces



For you Opportunity to apply your skills

# Who am I

- ▶ PhD Student
- ▶ Security Risk Assessment for Attack Surfaceces



For you Opportunity to apply your skills

For me Improve my research 😊

# Who am I

- ▶ PhD Student
- ▶ Security Risk Assessment for Attack Surfaceces



For you Opportunity to apply your skills

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# Who am I

- ▶ PhD Student
- ▶ Security Risk Assessment for Attack Surfaces



For you Opportunity to apply your skills

For me Improve my research 😊



# Who am I

- ▶ PhD Student
- ▶ Security Risk Assessment for At



All Needed Information

▶ [Link](#) Link to the student's wiki (TBD)

For you Opportunity to apply your skills

For me Improve my research 😊

# cyber DEFense Technology Experimental Research (DETERLab)



Information Science  
Institute (ISI)

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# cyber DEFense Technology Experimental Research (DETERLab)



- ▶ Information Science Institute (ISI)
- ▶ DETERLab



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- ▶ Information Science Institute (ISI)
- ▶ DETERLab

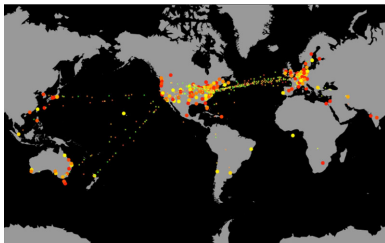
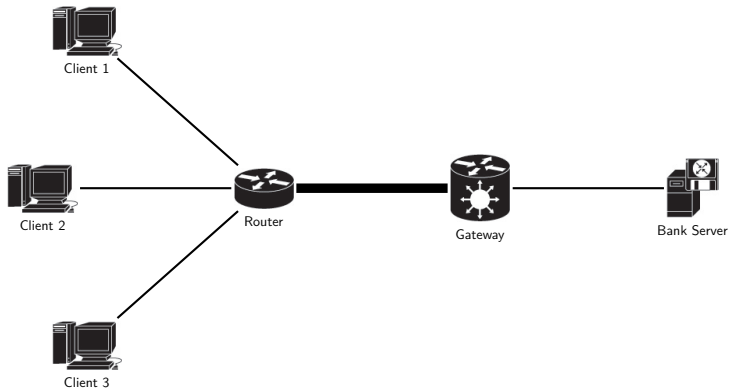


Figure: Global worm DDoS topology on single target

# Network Topology



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**Network Topology**

Rounds

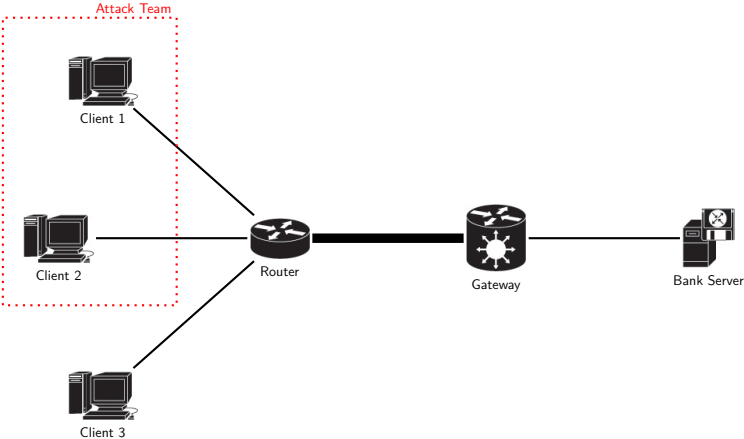
Goal

Operational Details

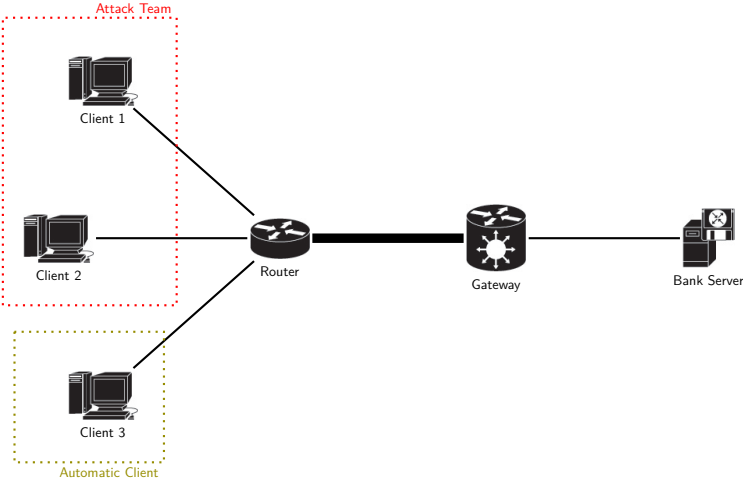
Bank Server Access

Forming Groups

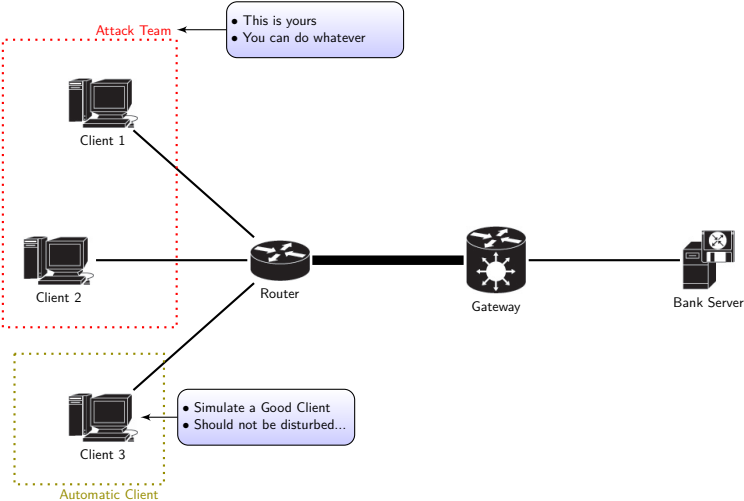
# Network Topology



# Network Topology

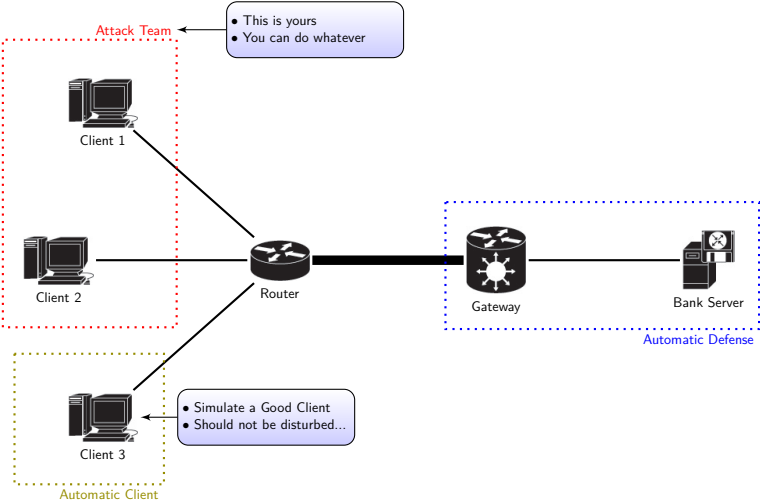


# Network Topology

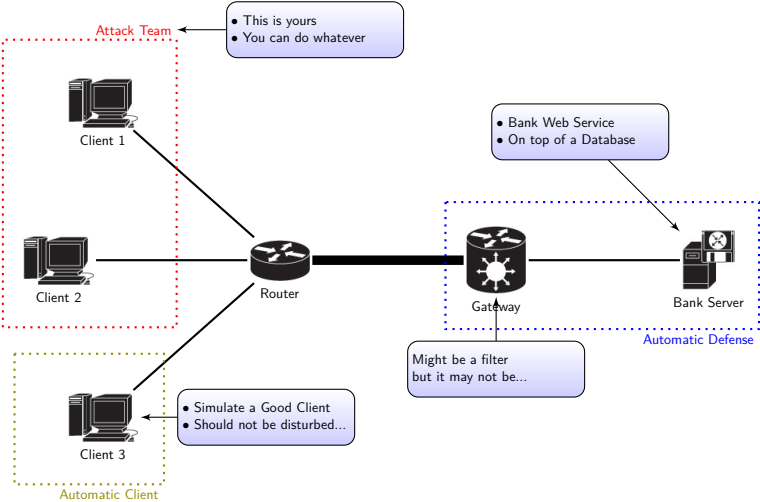




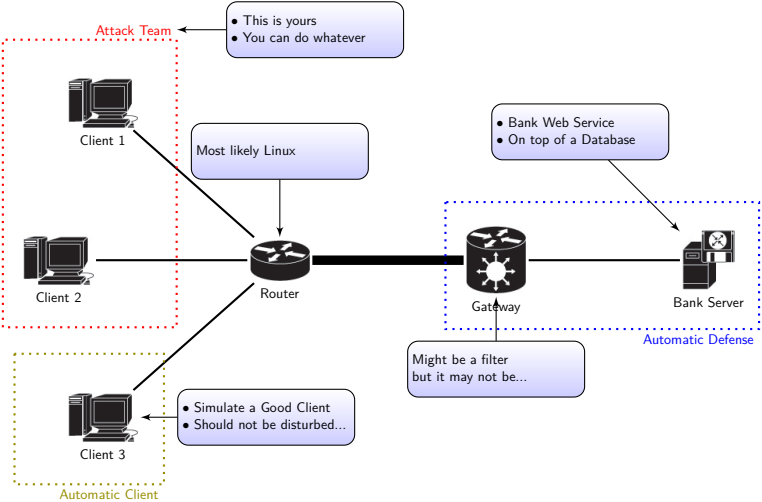
# Network Topology



# Network Topology



# Network Topology



# Rounds

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**Rounds**

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# Rounds

## 1. Questionnaire on Web Application Security



# Rounds

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- ▶ SQL injection



# Rounds

## 1. Questionnaire on Web Application Security

- ▶ SQL injection
- ▶ XSS



# Rounds

## 1. Questionnaire on Web Application Security

- ▶ SQL injection
- ▶ XSS
- ▶ HTTP misconfigurations





# Rounds

1. Questionnaire on Web Application Security
  - ▶ SQL injection
  - ▶ XSS
  - ▶ HTTP misconfigurations
2. 1 Day to compromise a Level 0 config (super-vulnerable)



# Rounds

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  - ▶ HTTP misconfigurations
2. **1 Day** to compromise a Level 0 config (super-vulnerable)
3. **5 Days** to compromise a Level 1 config (hardening OS, Server)



# Rounds

1. Questionnaire on Web Application Security
  - ▶ SQL injection
  - ▶ XSS
  - ▶ HTTP misconfigurations
2. 1 Day to compromise a Level 0 config (super-vulnerable)
3. 5 Days to compromise a Level 1 config (hardening OS, Server)
4. 5 Days to compromise a Level 2 config



# Goal

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**Goal**

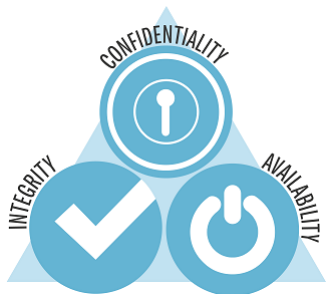
Operational Details

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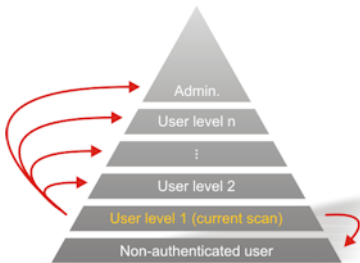
# Goal

- ▶ Confidentiality Exfiltrate all Data on Bank Accounts
- Integrity Modify Bank Accounts
- Availability Provoke a DoS

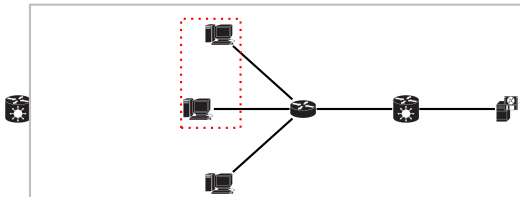


# Goal

- ▶ Confidentiality Exfiltrate all Data on Bank Accounts
- Integrity Modify Bank Accounts
- Availability Provoke a DoS
- ▶ Privilege Escalation



# Operational Details



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Rounds

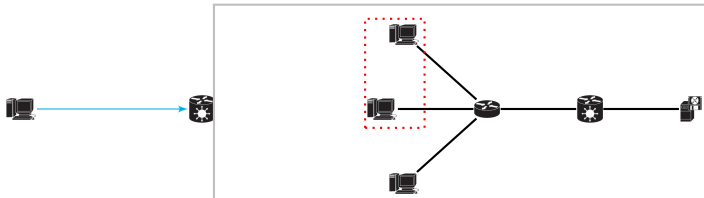
Goal

**Operational Details**

Bank Server Access

Forming Groups

# Operational Details



▶ `ssh unitn9ab@users.deterlab.net`



# Operational Details

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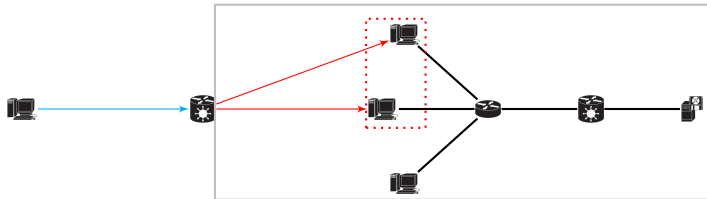
Rounds

Goal

**Operational Details**

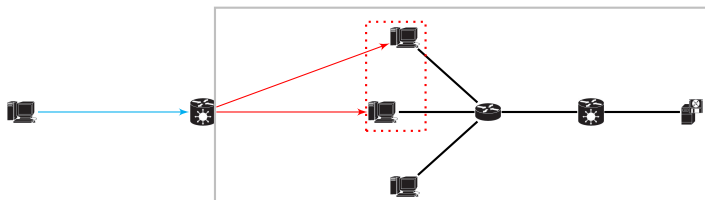
Bank Server Access

Forming Groups



- ▶ `ssh unitn9ab@users.deterlab.net`
- ▶ `ssh client1.exp1.ExperCCTF1.isi.deterlab.net`

# Operational Details



- ▶ `ssh unitn9ab@users.deterlab.net`
- ▶ `ssh client1.exp1.ExperCCTF1.isi.deterlab.net`
  - ▶ same for the other nodes (for you, not yet...)

# Bank Server Access

- ▶ to GUI or not GUI...  
waiting Jelena

# Forming Groups

- ▶ my contact
- ▶ how many people per group

# Thanks for your Attention!



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**Forming Groups**