



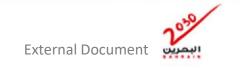
## The Soft War in Bahrain Hacker Success Stories

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21st September 2016



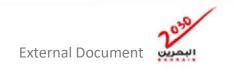


## Agenda









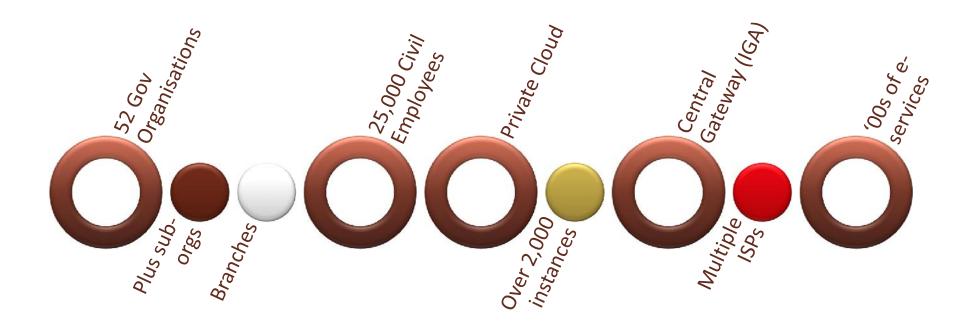


## Current Threat Landscape

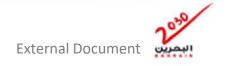




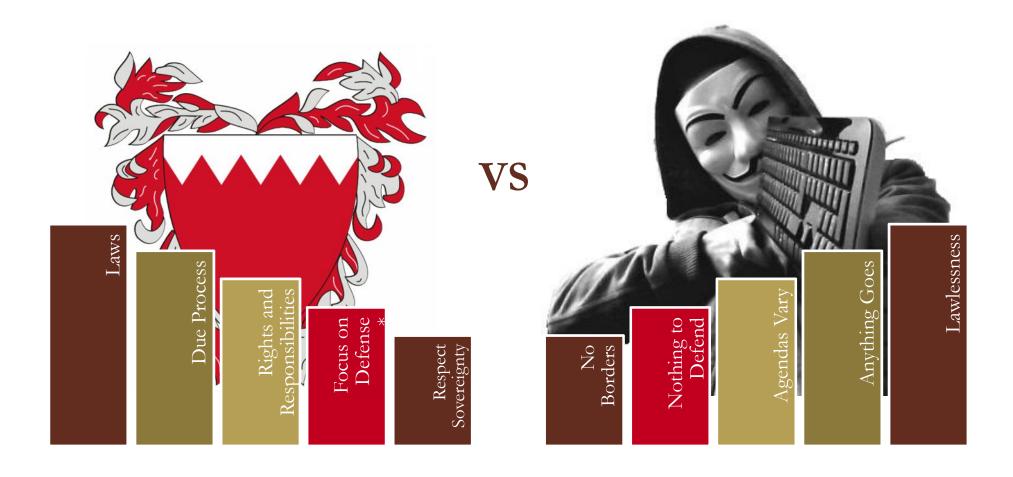
### **The Assets**



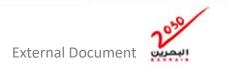




## The Playing Field

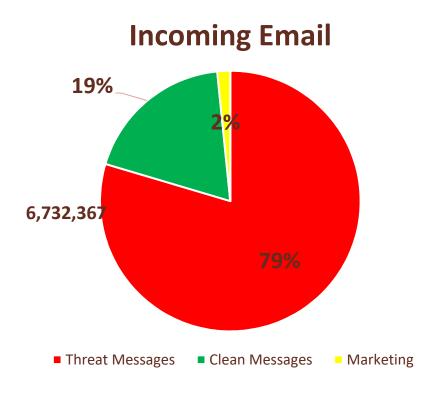






#### **Bahrain Government Email**

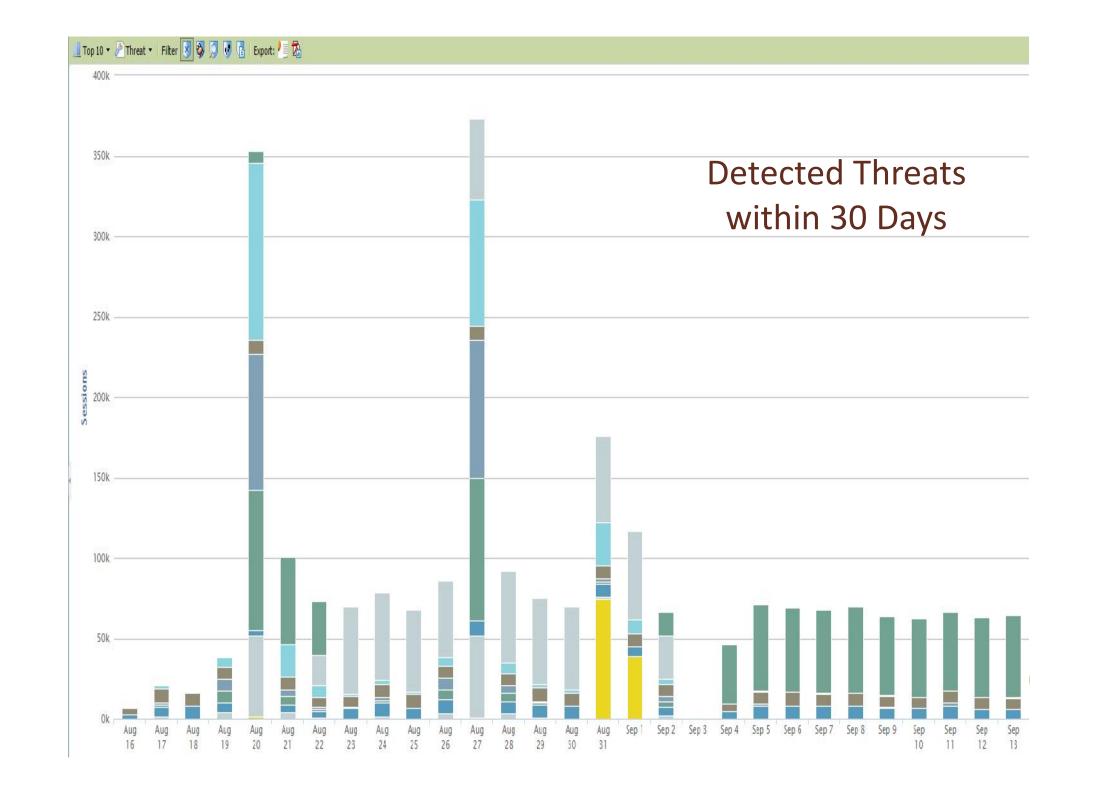
## A Typical Month's Traffic

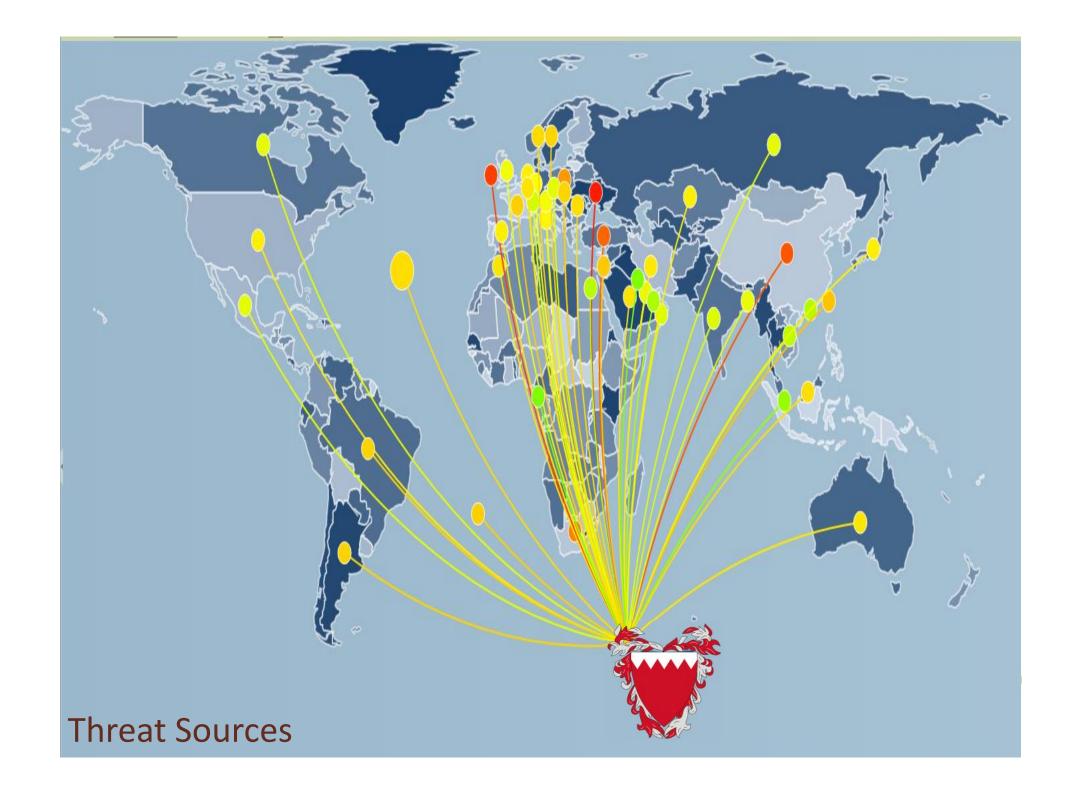












### Zooming in...



## China

- Over 100K threats
- Overall risk 4.2/5

## Ukraine

- 1 Attack
- Risk Rating 4.7/5.0!





# How many threats were undetected?

"We don't know what we don't know!"



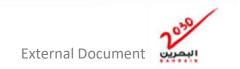




## Successful Intrusions Against Bahraini Targets

Stories from the CERT.bh Forensics Lab





### **Case 1: Unrestricted File Upload**

#### Target is Live!

- Workshop Registration Service
- Local and International Users



#### Attack begins!

- Guessing webpages
- Using stolen credentials



#### Target App Found!

- Unrestricted File Upload
- Uploaded 'webshell'



- Attempt to tunnel 'remote desktop' over encrypted web ports
- Didn't work...



#### **Exploration**

View files



#### **Escalate Privileges**

- Using known 'local' vulnerability
- (Over 1 year old!)



#### Ok, CMD is Fine!

• Attempt Lateral Movement



#### **Failure**

Intrusion detected and remediated





#### **Case 2: Humans are the Weakest Link**

#### Create Fake Profile

- Detailed LinkedIn Profile
- Attacker poses as HR Manager of a large local company
- Host malicious file on DropBox



#### Cast the Net!

- Contact IT staff in Government
- Ask them to use the company's 'CV Creator' with a link



#### Bait is Swallowed!

- File is downloaded over encrypted tunnel
- When executed, shows "the Operating System is not supported"



- IT staff usually have wide authorizations
- Attacker attempts to extract usernames and passwords
- Lateral movement takes place



#### **Utilize Backdoor**

- Attacker is notified of a newly compromised host
- Uses web-shell to log in remotely



#### "Why isn't this working?"

- IT Staffer tries to run the application on different operating systems, INCLUDING SERVERS!
- Attacker logs in once software is installed on an accessible server





https://www.dropbox.com/s/

and file password is

my personal email is: Md.AlHammad@outlook.com

Best Regards







## Fighting Back







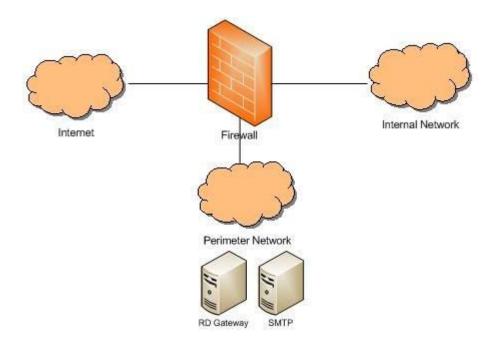








## The classical network setup

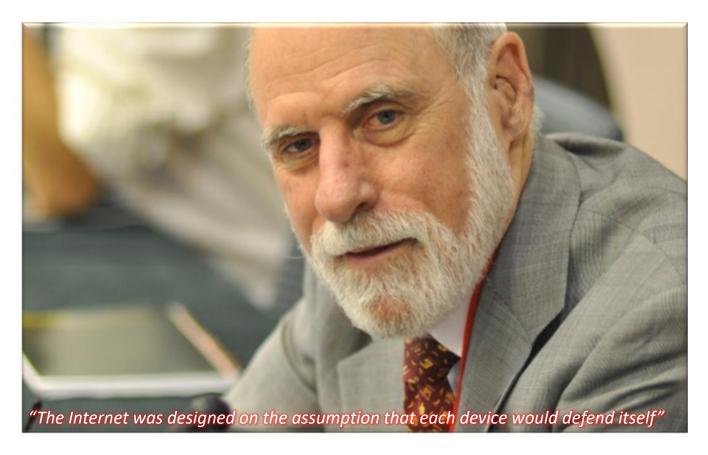


Doesn't work any more...





## TCP/IP Architecture History...

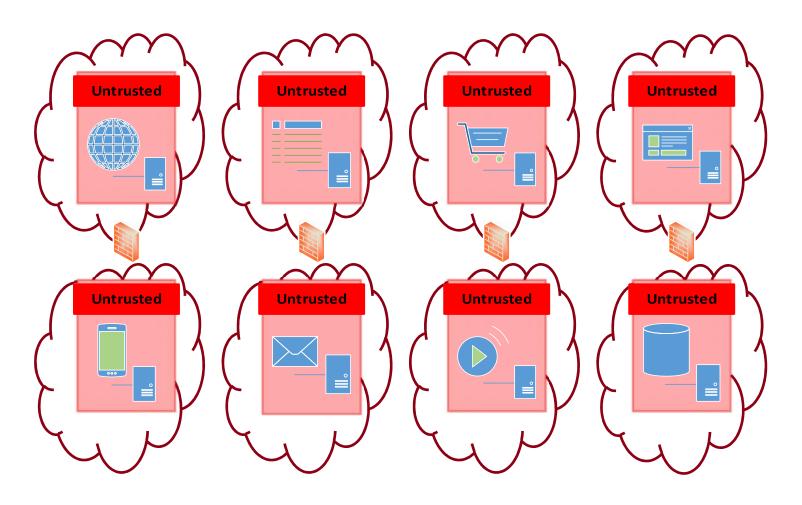


Vint Cerf, Co-Inventor of TCP/IP, quoted at the CRCC 2015 meeting, May 2015, Washington DC





### The Micro-Perimeter Design



Virtualization is key to the micro-perimeter design







## **Thank You**

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