

# CN318 Computer Network Security

Week 1:- Introduction to Computer Network Security

By Dr. Piya Techateerawat

## Introduction

- Welcome to CN318 Computer Network Security course.
- Please share the experience and background.

## Introduction

- Course Syllabus**
- ตำราเรียน**
  - Chris Brenton, "Mastering Network Security", SYBEX, Network Press.
  - John E. Canavan, "Fundamentals of Network Security", Artech House
  - Michael Alexander, "The underground guide to Computer Security", Addison Wesley.
- วัตถุประสงค์**
  - มีความรู้เกี่ยวกับหลักการและความรู้พื้นฐานระบบความปลอดภัยในระบบเครือข่าย
  - สามารถนำหลักการระบบความปลอดภัยมาประยุกต์ใช้ในการพัฒนาได้จริง
  - เข้าใจปัญหาต่างๆที่เกิดขึ้นในระบบความปลอดภัยบนเครือข่าย
  - สามารถเรียนรู้ด้วยตนเองและสืบหาความรู้เพิ่มเติมได้
- การประเมิน**
  - ความชอบในภาครียน 10%
  - นำเสนอตามสัปดาห์ 30%
  - การรับผิดชอบการสอบกลางภาค 30%
  - การรับผิดชอบการสอบปลายภาค 30%

## Introduction

สัปดาห์	รายละเอียดการสอบ	ผู้สอน
1	Introduction to Computer Network Security	ศร. ไร่
2	Fundamental Security Concept	ศร. ไร่
3	Encryption & Decryption	ศร. ไร่
4	Key Distribution Center	ศร. ไร่
5	Public Key	ศร. ไร่
6	Digital Signature	ศร. ไร่
7	Pretty Good Privacy (PGP)	ศร. ไร่
8	Mid-term Examination	ศร. ไร่
9	Firewall Architecture	ศร. ไร่
10	Intrusion Detection System & Intrusion Protection System	ศร. ไร่
11	IP Security (IPSEC), VPN	ศร. ไร่
12	Digital Right Management	ศร. ไร่
13	Electronic Voting	ศร. ไร่
14	Phishing, Worm, Spyware, Botnet	ศร. ไร่
15	Review	ศร. ไร่
16	Final Examination	ศร. ไร่

## Introduction

- What is Computer Network ?**
- Why we need Computer Network ?**
- What is Security?**
- Why we need Security in Computer Network?**

## What is Computer Network ?

- In general, we understand that a computer network is a group of interconnected computers.

[http://www.quickwire.com/images/QWScreenCaps/QW\\_Network\\_diagram.jpg](http://www.quickwire.com/images/QWScreenCaps/QW_Network_diagram.jpg)  
@8\_OCT\_2008

## What is Computer Network ?

Type of Networks

- **Local Area Network (LAN)**
  - Coverage in small area.
- **Metropolitan Area Network (MAN)**
  - Interconnect between small group of networks
- **Wide Area Network (WAN)**
  - Large scale coverage (e.g. City)
- **Intranet**
  - Set of networks which in specific organizations and limited geographic.
- **Extranet**
  - Networks in specific organization but connect to the trust host/network across the external network.
- **Internet**
  - Specific Internetwork which based on IP Protocol.

## What is Computer Network ?

[http://bp1.blogger.com/\\_sJSk-CabrQ/RxF6mBTKHul/AAAAAAAAAADE/ZtDPNzpSOFs/s320/LAN+MAN+WAN.jpg](http://bp1.blogger.com/_sJSk-CabrQ/RxF6mBTKHul/AAAAAAAAAADE/ZtDPNzpSOFs/s320/LAN+MAN+WAN.jpg) @ 8 Oct 2008

## What is Computer Network ?

**Hardware Components**

- **Network Interface Cards (NIC)**
- **Repeaters**
- **Hubs**
- **Switch**
- **Routers**

• [http://newsroom.cisco.com/images/Cisco\\_7604\\_Router.jpg](http://newsroom.cisco.com/images/Cisco_7604_Router.jpg)

## Introduction

- What is Computer Network ?
- **Why we need Computer Network ?**
- What is Security?
- Why we need Security in Computer Network?

## Why we need Computer Network?

- **Military**

It consists of a worldwide interconnection of governmental, academic, public, and private networks based upon the networking technologies of the [Internet Protocol Suite](#). It is the successor of the [Advanced Research Projects Agency Network \(ARPANET\)](#) developed by [DARPA](#) of the [U.S. Department of Defense](#). The Internet is also the communications backbone underlying the [World Wide Web \(WWW\)](#). The 'Internet' is most commonly spelled with a capital 'I' as a proper noun, for historical reasons and to distinguish it from other generic internetworks.

<http://en.wikipedia.org/wiki/Internet>

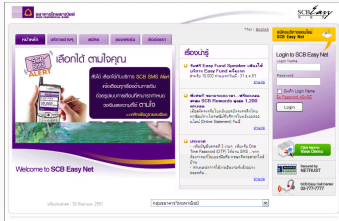
## Why we need Computer Network?

- **Academic**
- **Forum**
- **Library**
- **Publishing**

<http://www.sl.nsw.gov.au/> @ 8 Oct 2008

# Why we need Computer Network?

- Business & Others (Health, Entertain and etc.)

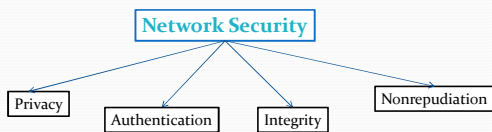


<https://www.scbeasy.com/v1.4/site/presignon/index.asp> @ 8 OCT 2008

# Introduction

- What is Computer Network ?
- Why we need Computer Network ?
- What is Security?
- Why we need Security in Computer Network?

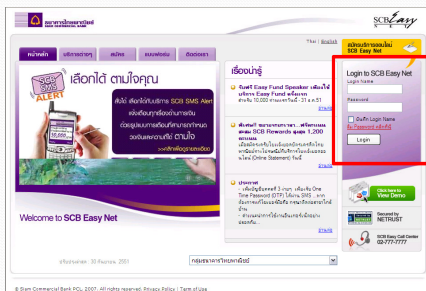
# What is Security?



# What is Security?

- **Privacy:-**
  - Only sender and receiver should be able to understand the message
- **Authentication:-**
  - Receiver can be sure that sender's identity is correct.
- **Integrity:-**
  - data arrive to receiver as exactly as it have sent.
- **Nonrepudiation:-**
  - Message from sender is proofed that sender is actually sent from him.

# What is Security?



# Introduction

- What is Computer Network ?
- Why we need Computer Network ?
- What is Security?
- Why we need Security in Computer Network?

### Why we need Security in Computer Network?

- Military & Public Security



### Why we need Security in Computer Network?

- Personal Information
  - Bank
  - Email
  - Credit Card
  - Academic Record
  - Health Information
  - Etc.



### Why we need Security in Computer Network?

- Further R&D, Technology and Application

- Financial
- Academic
- Agriculture
- etc.



Q & A