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# Pemanfaatan Cloud Computing untuk MatKul JarKom

— Muhammad Cordiaz S.Si., M.Kom —

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# Perkenalan



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@cordiaz

# Materi



<https://github.com/cordiaz/webinar-ri40>



# Revolusi Industri 4.0 Dampaknya Bagi Pendidikan

# Revolusi Industri 4.0

- Revolusi Industri 4.0
- Era Industri 4.0
- Industri 4.0
- RI 4.0
- 4IR





# Teknologi Kunci Revolusi Industri 4.0

- CYBER-PHYSICAL SYSTEM
- INTERNET OF THINGS
- ARTIFICIAL INTELLIGENCE
  - Big data
  - Cloud computing
  - Nanotechnology
  - Wearable
  - Blockchain
  - Gene sequencing
  - Virtual reality
  - 3D printing



# Milestones Revolusi Industri

## Revolusi Industri Pertama



**1790-an**

Mekanisasi alat  
produksi, tenaga uap,  
dan daya air

## Revolusi Industri Kedua



**1890-an**

Produksi massal,  
perakitan, dan  
tenaga listrik

## Revolusi Industri Ketiga



**1960-an**

Elektronik, sistem  
teknologi informasi,  
dan otomatisasi

## Revolusi Industri Keempat

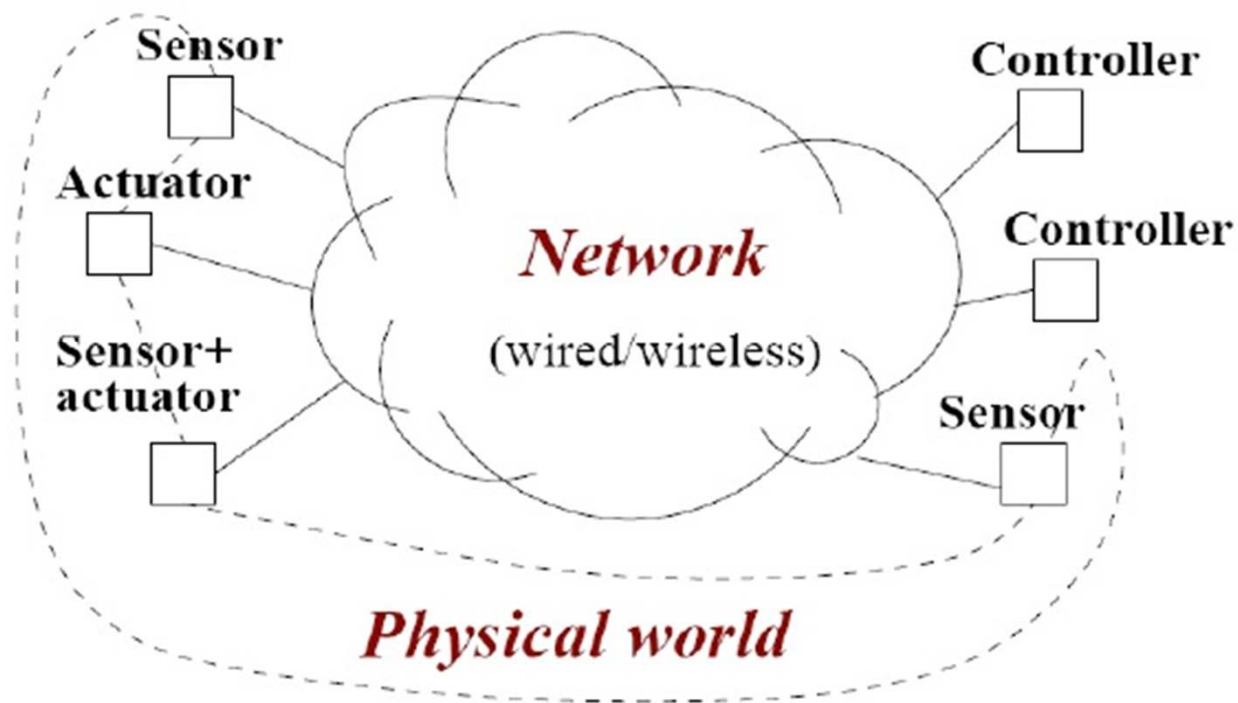


**Hari ini**

Sistem siber-fisik



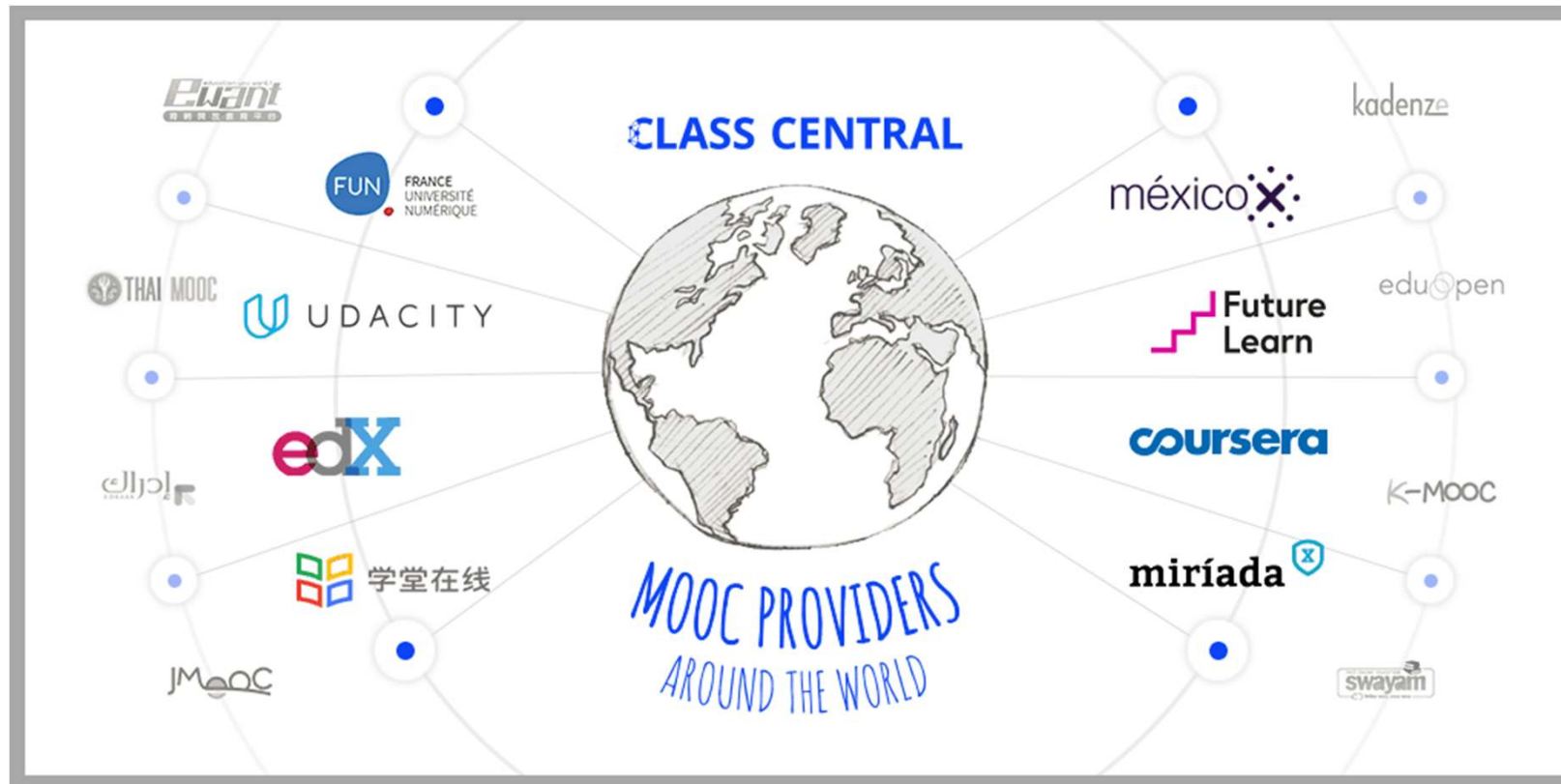
# Sekilas Cyber-physical system







# Bagaimana dengan Dunia Pendidikan?



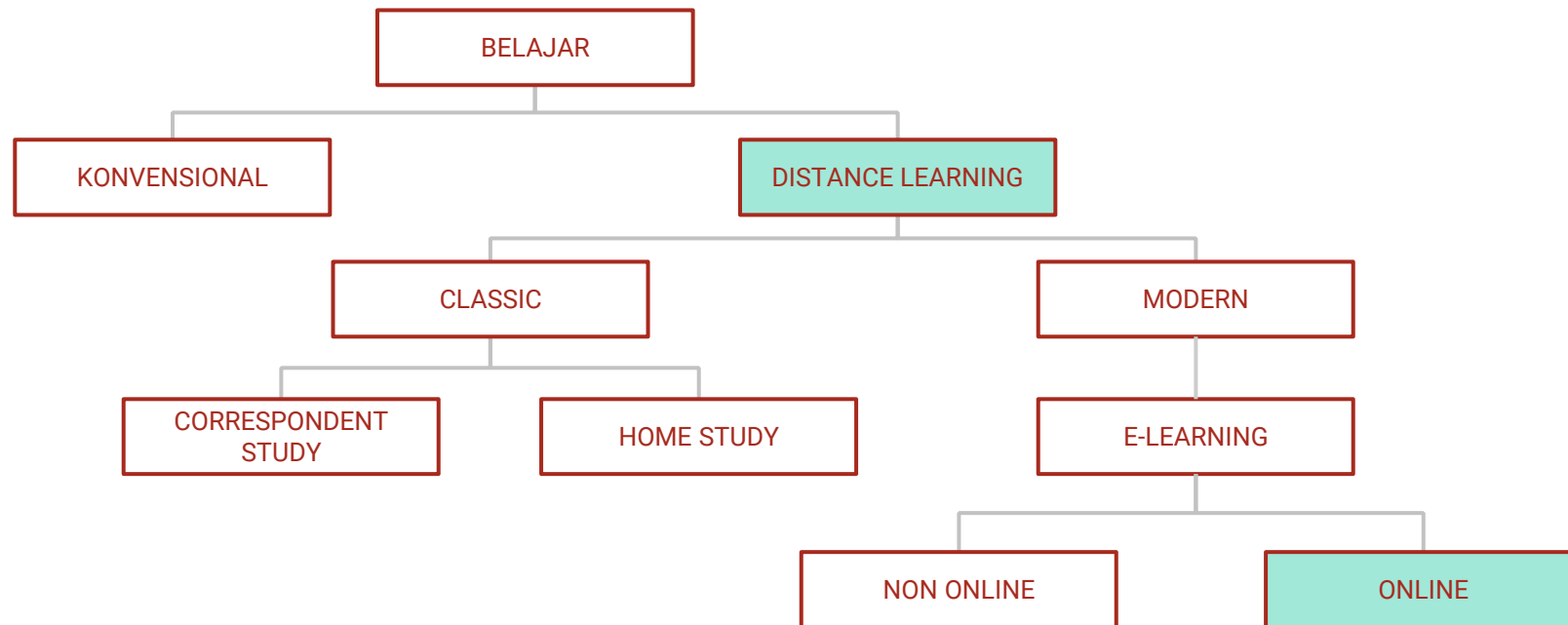


# E-learning

- E-learning merupakan segala bentuk aktivitas pembelajaran yang memanfaatkan media elektronik untuk belajar (Gilbert & Jones, 2001 dan Michael, 2013)
- E-learning sebagai penggunaan teknologi internet dan komputer berjaringan untuk membantu proses belajar manusia (Harley, 2001; Rosenberg, 2001 dan Kamarga, 2002)



# Cakupan e-learning





MINISTRY OF EDUCATION AND CULTURE  
DIRECTORATE GENERAL OF HIGHER EDUCATION  
HIGHER EDUCATION PROJECT  
ADB LOAN No. 1253 - INO



*Certificate of Appreciation*

This certifies that :

*Muhammad Cordiaz*

has been actively involved in

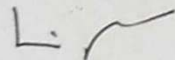
*Distance Learning Training*

*Participant*

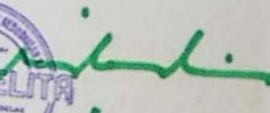
as

this event, held at *LPPU ADB Loan No. 1253 - INO General Soedirman University*

during the period *June - July 1999*

  
Frederik M. Poyk  
Training Coordinator



  
Widadi W. Widayat  
Manager



Sertifikat  
Distance  
Learning  
Depdikbud  
1999

# Karakteristik Pembelajaran Konvensional





# Beberapa Prinsip e-learning

Menurut Littlejohn & Pegler (2007) penerapan pembelajaran e-learning memiliki beberapa prinsip:

1. Personalisasi
2. Keamanan
3. Belajar mandiri
4. Tracking
5. Aplikasi pihak ketiga

# Karakteristik e-learning



PEMBELAJARAN KONVENSIONAL	E-LEARNING
<ul style="list-style-type: none"><li>❖ Terbatas</li><li>❖ Real time</li><li>❖ Kontrol pada pendidik</li><li>❖ Linear</li><li>❖ Sumber sekunder</li><li>❖ Statis</li></ul>	<ul style="list-style-type: none"><li>❖ Tidak terbatas</li><li>❖ Fleksibel</li><li>❖ Kontrol pada peserta didik</li><li>❖ Multidimensional</li><li>❖ Sumber primer</li><li>❖ Dinamis</li></ul>





# Sumber Referensi MatKul Jaringan Komputer



<https://www.coursera.org/>



**coursera** Explore ▾ What do you want to learn? 🔍 For Enterprise For Students 🔔 Muhammad Cordiaz ▾

Browse > Computer Science > Computer Security and Networks

Offered By **YONSEI UNIVERSITY**

## Introduction to TCP/IP

★★★★★ 4.6 1,121 ratings • 347 reviews

Jong-Moon Chung

**Enroll for Free**  
Starts Oct 20

Financial aid available

38,493 already enrolled

Included with **coursera plus** Unlimited access to 3,000+ courses

About Instructors Syllabus Reviews Enroll

### Introduction to TCP/IP

- ☐ Purchase Course · \$49 USD
- ☐ Commit to earning a Certificate—it's a trusted, shareable way to showcase your new skills.
- ☒ Full Course, No Certificate  
You will still have access to all course materials for this course.

**Continue**

### About this Course

105,330 recent views

You use the Internet through your PC (Personal Computer), laptop, tablet, smartpad, and smartphone every day in everything you do. Through your own PC/laptop, you can easily learn everything about the Internet, and that is what this course is focused on. In this course 'Introduction to TCP/IP,' you will learn the operational functions of Internet technologies (which include IPv4, IPv6, TCP, UDP, addressing, routing, domain names, etc.) and your PC/laptop's security and gateway Internet setup and basic principles. In addition, through a simple Wireshark experiment, you will learn how to analyze network traffic and troubleshoot network problems.

#### Learner Career Outcomes

- 69% started a new career after completing these courses
- 41% got a tangible career benefit from this course


<https://www.coursera.org/learn/tcpip>

<https://www.coursera.org/>




**coursera** Explore ▾ What do you want to learn? 🔍 For Enterprise For Students 🔔 Muhammad Cordiaz ▾

Browse > Information Technology > Networking

Offered By 

## Intel® Network Academy - Network Transformation 101

★★★★★ 4.5 347 ratings • 110 reviews

 Intel Network Academy

**Enroll for Free**  
Starts Oct 20

Financial aid available

18,579 already enrolled

Included with **coursera plus** Unlimited access to 3,000+ courses

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- ☐ Commit to earning a Certificate—it's a trusted, shareable way to showcase your new skills.
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You will still have access to all course materials for this course.

**Continue**

**About this Course**  
54,752 recent views

Welcome to the Intel® Network Academy – a comprehensive training program on network transformation. In this program, we will be covering the topics of software defined infrastructure (SDI) network functions virtualization (NFV), software-defined networking (SDN) and beyond.

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Start instantly and learn at your own schedule.


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Earn a Certificate upon completion


<https://www.coursera.org/learn/network-transformation-101>

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Muhammad Cordiaz 


Assign to Jaringan Komputer - MC01 ▾ No students ▾ doing Different questions ▾ due by Oct 21st, 11:59 PM ▾ Save Assign


Computing > Computers and the Internet > The Internet > Connecting networks

 Computer networks

 Physical network connections





 Practice: Computer networks

 Bit rate, bandwidth, and latency

 Practice: Bit rate and bandwidth

Next lesson  
Addressing the Internet

## Bit rate and bandwidth

 Google Classroom  Facebook  Twitter  Email

In 2015, the nation of Burundi had an average bandwidth per Internet connection of 11.24 kb/s. In 2016, their average bandwidth was 6.91 kb/s.

Which statement is true based on those statistics?

Choose 1 answer:

☐ A

Internet connections in Burundi in 2016 were able to transfer more bits per second than connections in Burundi in 2015.

☐ B

Internet connections in Burundi in 2016 had to wait longer for packets to arrive than connections in Burundi in 2015.

☒ C

Internet connections in Burundi in 2015 were able to transfer more bits per second than connections in Burundi in 2016.

☐ D

Internet connections in Burundi in 2015 had to wait longer for data to arrive than connections in Burundi in 2016.

<https://www.khanacademy.org/computing/computers-and-internet/xcae6f4a7ff015e7d:the-internet>

# <https://www.khanacademy.org/>



Computing > Computers and the Internet > The Internet > Connecting networks

- Computer networks
- Physical network connections
- Practice: Computer networks
- Bit rate, bandwidth, and latency
- Practice: Bit rate and bandwidth

Next lesson  
Addressing the Internet

## Bit rate and bandwidth

[Google Classroom](#) [Facebook](#) [Twitter](#) [Email](#)

In 2015, the nation of Burundi had an average bandwidth per Internet connection of 11.24 kb/s. In 2016, their average bandwidth was 6.91 kb/s.

Which statement is true based on those statistics?

Choose 1 answer:

☐ INCORRECT

Internet connections in Burundi in 2016 were able to transfer more bits per second than connections in Burundi in 2015.

The bandwidth of a computer network is the amount of data that can be sent in a period of time. The bandwidth was lower in 2016 than in 2015, so Internet connections in 2016 transferred less bits per second than connections in 2015. Bandwidth typically increases in a country over time, but Burundi experienced political turmoil that affected technological progress.

☐ INCORRECT

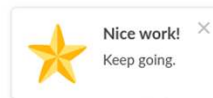
Internet connections in Burundi in 2016 had to wait longer for packets to arrive than connections in Burundi in 2015.

The bandwidth of a computer network measures the amount of data that can be sent over a network in a period of time. Bandwidth does not measure how long it takes for data to arrive (that concept is instead known as latency). A connection can have low bandwidth and high latency, or vice versa, so we don't know anything about the latency based on the bandwidth.

☒ CORRECT (SELECTED)

Internet connections in Burundi in 2015 were able to transfer more bits per second than connections in Burundi in 2016.

The bandwidth of a computer network is the amount of data that can be sent in a period of time. Since the bandwidth was higher in 2015 than in 2016, that means that connections could transfer more data per second then.



Do 4 problems ● ○ ○ ○

Next question



# https://lms.onnocenter.or.id/moodle/

← → ↻ lms.onnocenter.or.id/moodle/course/view.php?id=32 ☆ Incognito

★ Bookmarks 2020 Bookmark

Anda login sebagai **Muhammad Cordiaz** (Keluar)

## Jaringan Komputer

Depan > Kursus Yang Saya Ikuti > Teknologi Informasi > JarKom

### Navigasi

Depan

- Rumah saya
- Halaman situs
- Profil saya
- Kursus saat ini
  - JarKom
    - Peserta
    - Badges
    - General
    - Pendahuluan / Konsep TCP/IP / Sejarah Internet
    - Command Line & Wireshark
    - Simulator Jaringan
    - Perangkat Keras Jaringan & Data Link Layer
    - Perangkat WiFi / Wireless Internet
    - Network Layer IPv4
    - Transport Layer
    - Domain Name System & Pengaturan Internet
    - Routing & NAT
    - Ujian Tengah Semester (UTS)
    - Web / Content Management System
    - e-mail / SMTP / POP3 / IMAP / Webmail
    - VoIP / Internet Telepon
    - Streaming Multimedia

### General

#### UNTUK MEMPEROLEH NILAI A

- Pengajar akan lebih suka kalau anda MENULIS BUKU untuk A, daripada mengerjakan UJIAN.
- Pilih salah satu topik dari Kuliah ini.
- Halaman minimal 150 halaman ukuran A4
- Nilai 100 di semua KUIS, UTS, UAS (di set manual).
- Diskusikan dengan pengajar via email onno@indo.net.id untuk di bimbing menulis buku-nya.
- YOUTUBE: [https://www.youtube.com/watch?v=DFh\\_Q4kaUWs](https://www.youtube.com/watch?v=DFh_Q4kaUWs)

#### UJIAN

- Bagi yang tidak berani menulis buku, silahkan mengerjakan ujian.
- Kerjakan semua kuis, jika belum memperoleh nilai 100, ulangi sampai dapat 100.
- Kerjakan UTS 100 soal, terus menerus, sampai waktu dosen harus memasukan nilai.
- Kerjakan UAS 100 soal, terus menerus, sampai waktu dosen harus memasukan nilai.
- Semua KUIS / UTS / UAS bisa di kerjakan kapan saja, dimana saja, selama kuliah berlangsung sampai dosen harus memasukan nilai.

News forum

### Pendahuluan / Konsep TCP/IP / Sejarah Internet

- Konsep Dasar TCP/IP
- Sejarah Internet Indonesia
- Sejarah Internet Dunia (id)
- Sejarah Internet Dunia (en)
- YOUTUBE: Sejarah Internet
- YOUTUBE: Arsitektur Jaringan Internet TCP/IP
- KUIS KONSEP TCP/IP

### Command Line & Wireshark

Kuliah Sistem Operasi akan membahas lebih dalam tentang berbagai Tip mengoperasikan Sistem Operasi (khususnya Server).

- Indeks Perintah Dasar Linux
- Perintah Dasar Linux
- Konfigurasi interface di komputer

### Cari forum

Maju

Pencarian Lanjutan ?

### Berita terbaru

(No news has been posted yet)

### eLearning Rakyat

Situs e-Learning untuk #internetRakyat. Bagi anda yang belum mempunyai account, silahkan klik "Create new Account" di bagian login.

### Upcoming events

Tidak ada agenda mendatang

Pergi ke kalender... Acara baru...


### Aktifitas lalu

Aktivitas sejak Minggu, 25 Oktober 2020, 11:20

Laporan lengkap aktifitas terbaru...

Tidak ada yang baru sejak Anda terakhir login

https://lms.onnocenter.or.id/moodle/course/view.php?id=32



**Lembaga Pengembangan Pendidikan dan Pembelajaran (LP3)**

**Online Learning**  
UNIVERSITAS PAMULANG

Unpam menggunakan model pembelajaran *blended learning*, di mana 40% pertemuan menggunakan *online learning*, sedangkan 60% menggunakan pembelajaran konvensional. *online learning* di Unpam bukan hanya memberikan materi ajar secara gratis melalui online, namun terdapat proses pembelajaran yang disusun terstruktur dalam rangka menuju capaian pembelajaran.

## Selamat Datang di e-Learning Reg. C Universitas Pamulang

Home

"Mari Berkontribusi Secara Berkualitas"

Kalender Online Gasal 2020/2021

Online users

394 online users (last 5 minutes)

<https://e-learningc.unpam.ac.id/>



# Teori Pengalamatan dalam Jaringan





# Kelas IP Address

w . x . y . z = IP address

Class A	1 – 127	(Network 127 is reserved for loopback and internal testing)		
		Leading bit pattern	0	00000000.00000000.00000000.00000000 Network . Host . Host . Host
Class B	128 – 191	Leading bit pattern	10	10000000.00000000.00000000.00000000 Network . Network . Host . Host
Class C	192 – 223	Leading bit pattern	110	11000000.00000000.00000000.00000000 Network . Network . Network . Host





# Private IP Address

Class A	10.0.0.0 to 10.255.255.255
Class B	172.16.0.0 to 172.31.255.255
Class C	192.168.0.0 to 192.168.255.255

# Default Subnet Mask

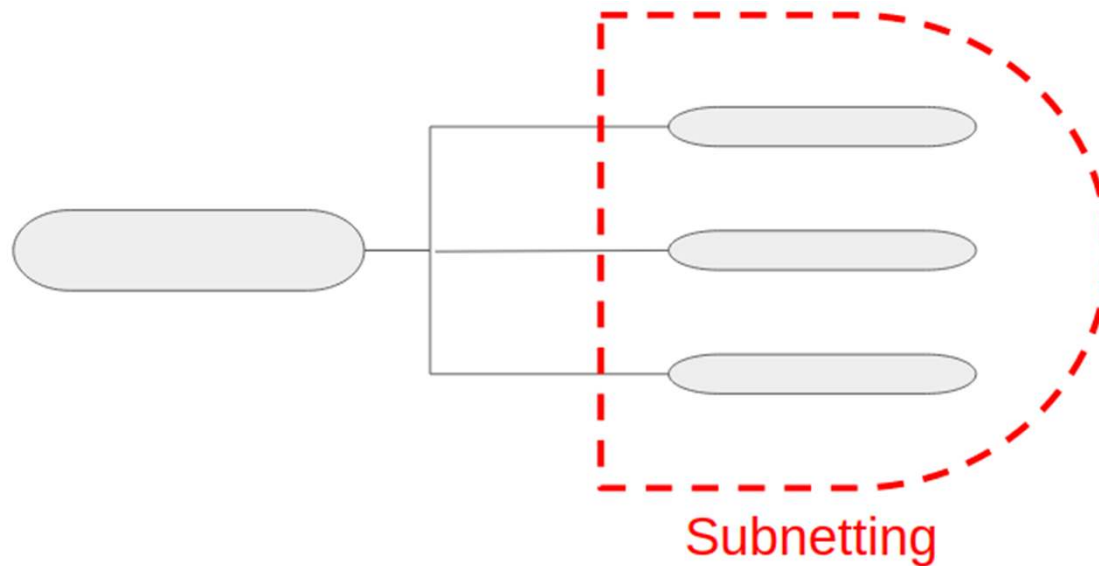


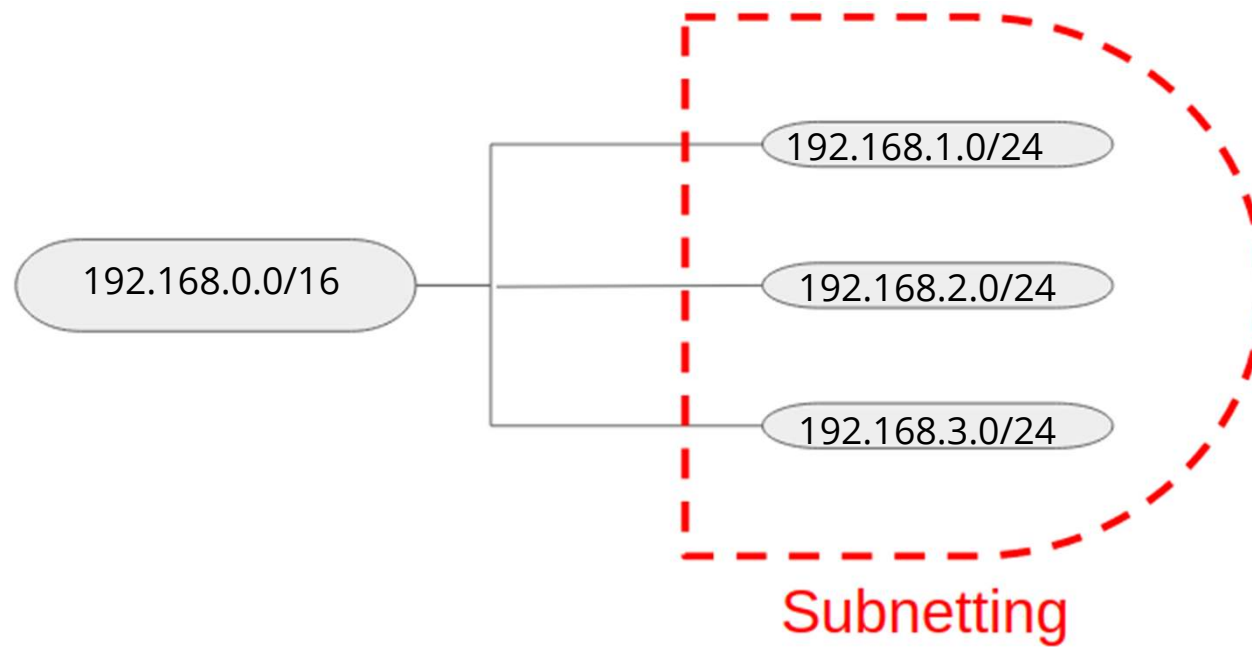
Class A	255.0.0.0
Class B	255.255.0.0
Class C	255.255.255.0



# Sub-network IP Address

Subnetting adalah membagi jaringan yang lebih besar menjadi jaringan yang lebih kecil.









# Sekilas Cloud Computing



# Cloud Computing

Cloud computing: **on-demand** delivery of **IT resources dan applications** via the **internet**, with **pay-as-you-go** pricing.

# Gartner Magic Quadrant

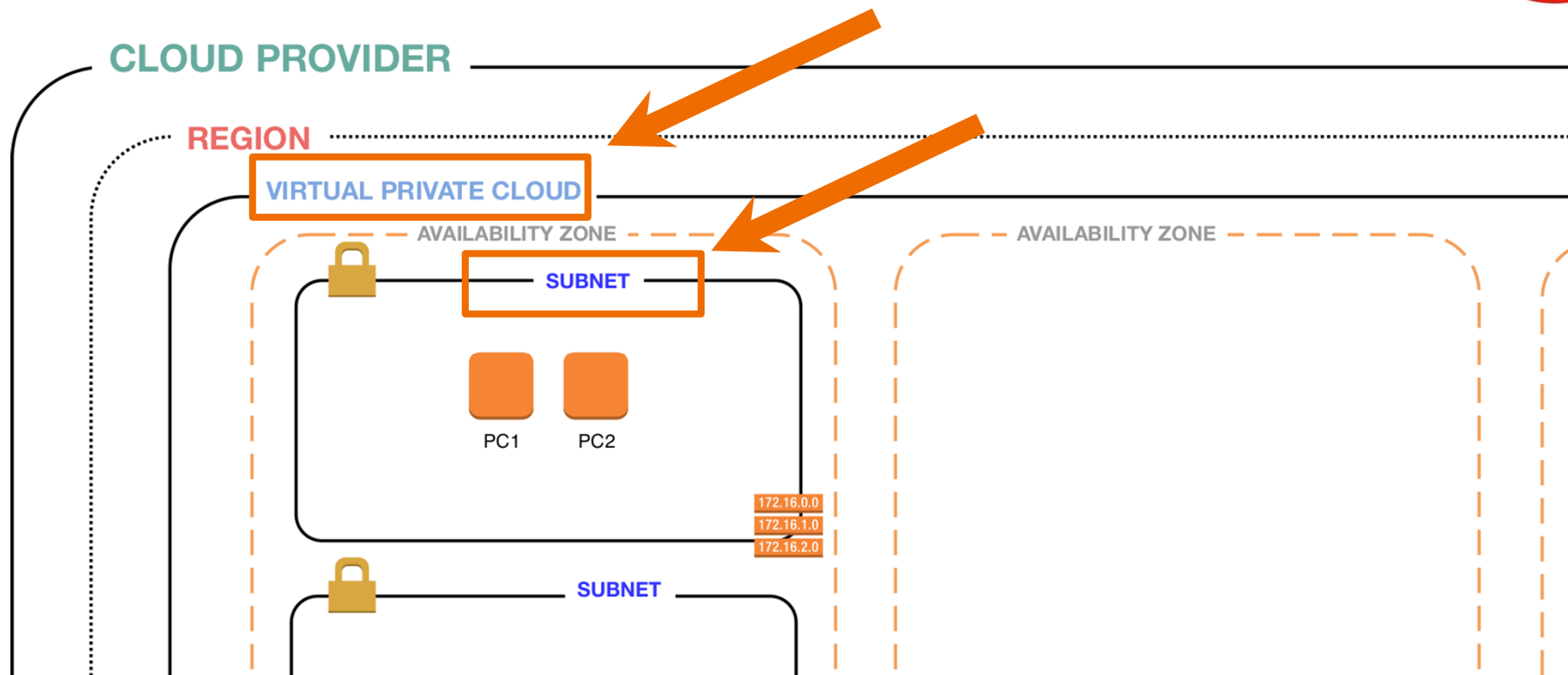
Figure 1. Magic Quadrant for Cloud Infrastructure and Platform Services







# Diagram Cloud secara Umum





# Cara Menggunakan Cloud Computing

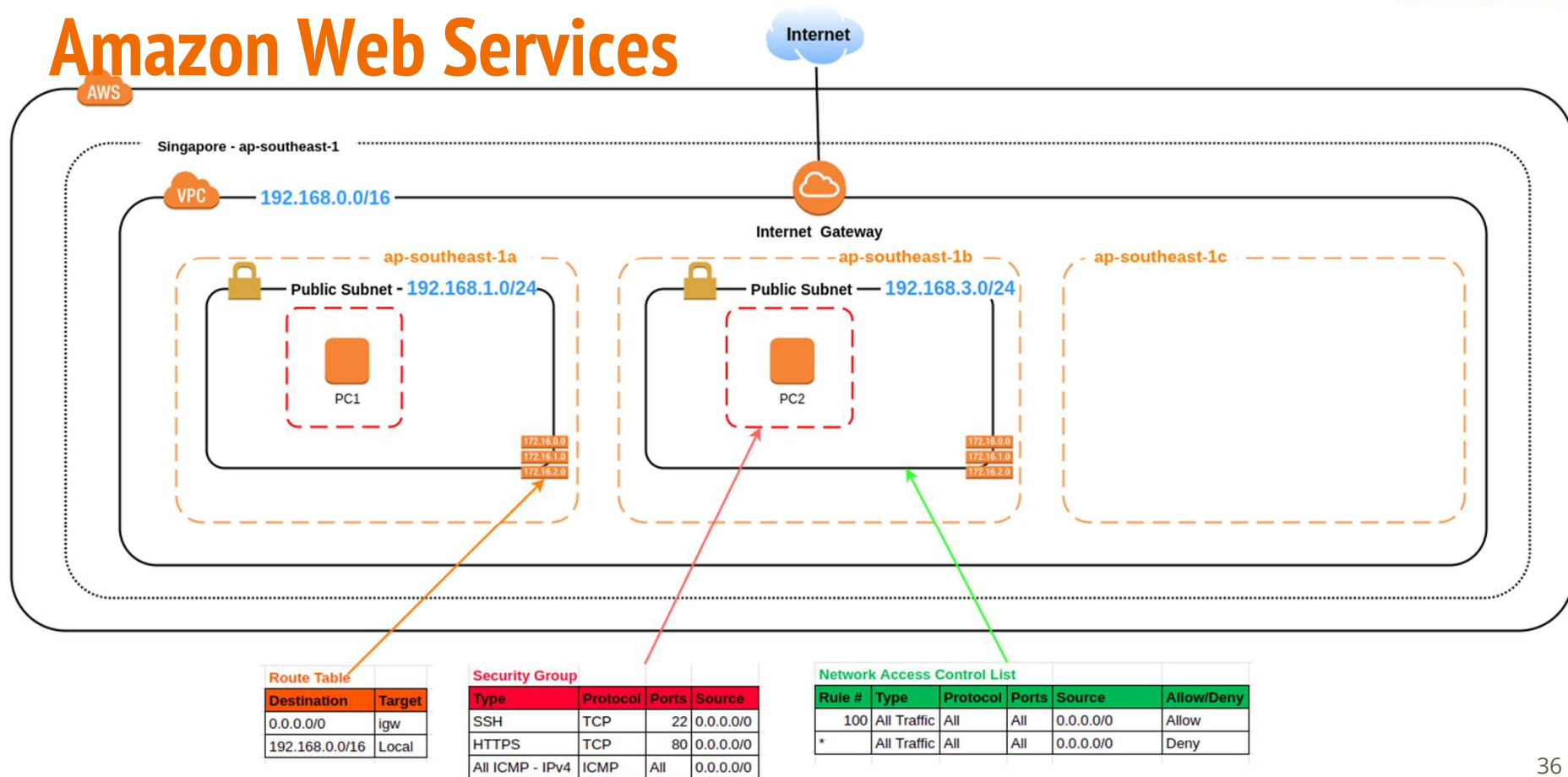
1. Login
2. Masuk ke web console
3. Gunakan layanan yang diperlukan



# Praktek Pengalamatan dalam Jaringan



# Amazon Web Services





# Networking di AWS

- VPC
- Subnet
- Availability zone
- Route table
- Security Group
- Network Access Control List
- Internet gateway

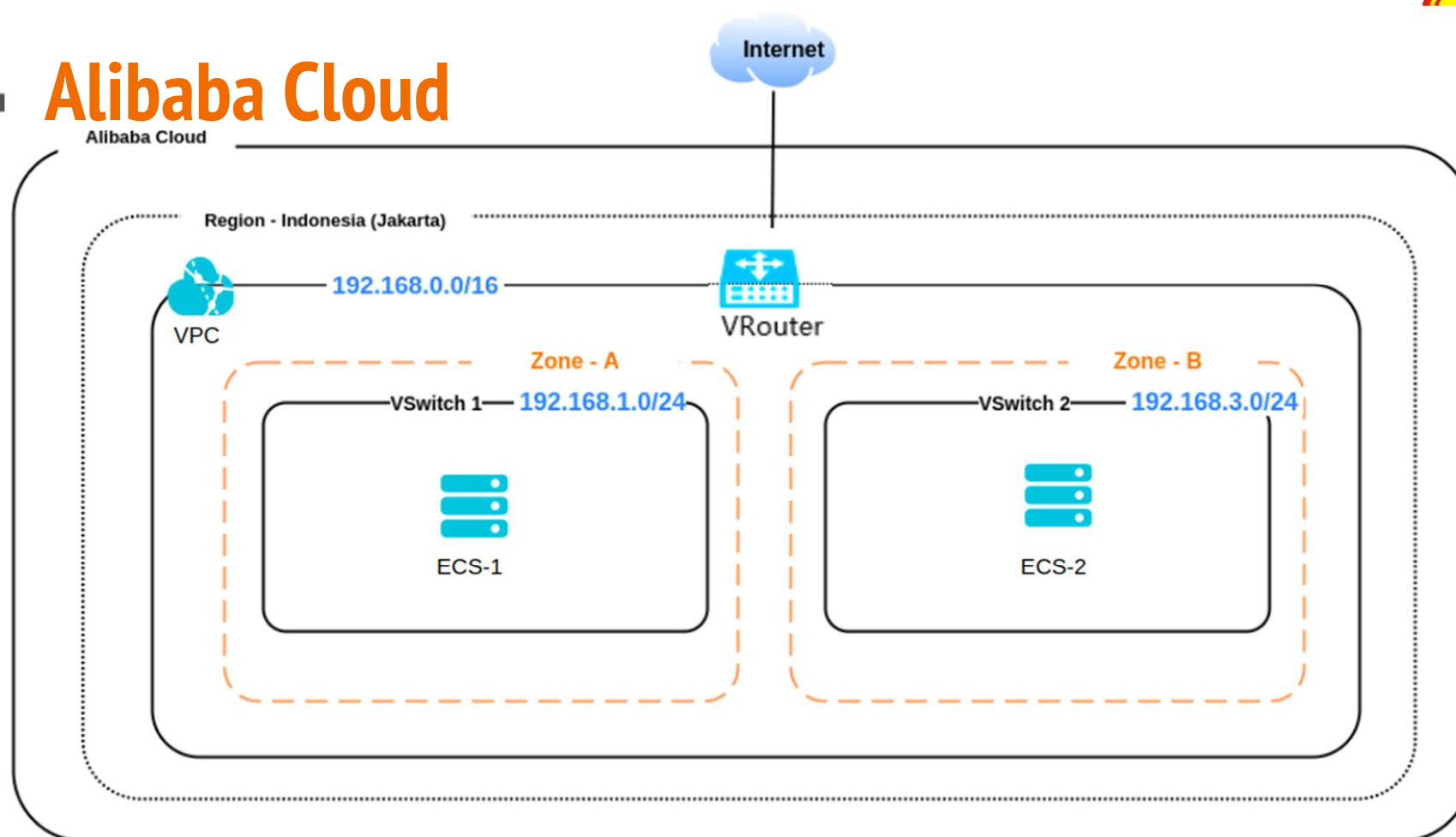


## Free Access AWS - Khusus Webinar

<https://github.com/cordiaz/webinar-ri40>



# Alibaba Cloud





# Networking di Alibaba Cloud

- Virtual Private Cloud
- VSwitch
- Zone
- Routing Table
- Security Group



# Free Access Alibaba Cloud - Khusus Webinar



<https://github.com/cordiaz/webinar-ri40>



## Kesimpulan dan Saran

- Tugas pendidik adalah mengantarkan peserta didik ke masa depan, bukan dengan pengalaman-pengalaman masa lalu pendidik
- Peserta didik secara mandiri dapat mencari informasi, menentukan apa yang akan dipelajari, menentukan jadwal pembelajaran sendiri
- Peserta didik tidak harus mendaftarkan pada satu sumber belajar saja, dunia serba terbuka, kolaboratif dan tanpa batas
- Sikap mental / mindset pendidik dan peserta didik yang harus terbentuk berkembang, kegairahan mencari hal-hal baru, suka tantangan, tidak takut gagal, berani mencoba dan belajar terus, tidak takut kritik apapun penilaian orang, meyakini pentingnya usaha meskipun belum tentu berhasil

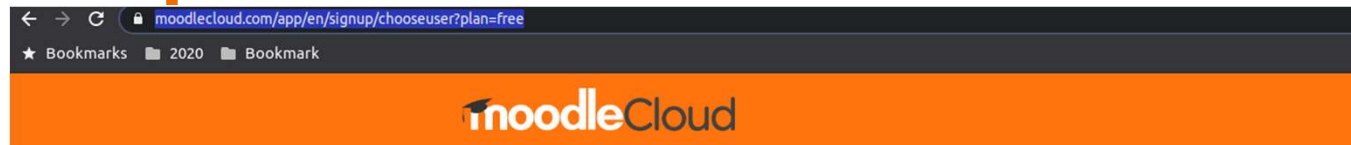


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- <https://roadmap.sh>
- <https://aws.training>
- <https://edu.alicloud.com>
- [AWS Named as a Cloud Leader for the 10th Consecutive Year in Gartner's Infrastructure & Platform Services Magic Quadrant](#)
- <https://aws.amazon.com/id/education/awseducate/>
- <https://edu.alibabacloud.com/certification/university-cloudnative>
- <https://aws.amazon.com/blogs/apn/amazon-vpc-for-on-premises-network-engineers-part-one/>
- <https://moodlecloud.com/app/en/signup/chooseuser?plan=free>
- <https://forbil.org/id/article/159/cyber-physical-system-remote-control-era-revolusi-industri-40>
- <http://fkip.ums.ac.id/wp-content/uploads/sites/43/2018/12/Revolusi-Industri-4.0-dan-Dampaknya-terhadap-Pendidikan-di-Indonesia-Dr.-Sukartono.doc>



# <https://moodlecloud.com/> - MoodleCloud



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[Take me to the live demo](#)

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## Already have an account?

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[Log in](#)

<https://moodlecloud.com/app/en/signup/chooseuser?plan=free>

**Terima kasih**

