



Pengantar Teknologi Informasi

11. Manajemen Jaringan



Ringkasan:

- Model jaringan
- Pengamanan
 - Hak akses
 - Identification
 - Security
- Akses Network



Model Jaringan

- Model jaringan:
 - Peer-to-peer: setiap peer bebas komunikasi ke mana saja (otonom)
 - Server-based: layanan terkendali / terpusat.

Model Jaringan

- Model jaringan:
 - Peer-to-peer
 - Authority pada setiap "peer" (node)
 - Komunikasi langsung
 - Contoh:
 - Ms Network, Network Neighborhood
 - Napster, KaZaA/FastTrack:
 - share files (audio/mp3 , movie/DivX)
 - Central server
 - Gnutella: no central server
 - Gnutel: anonimity
 - Server-based





Model Jaringan

- Model jaringan:
 - Peer-to-peer
 - Server-based
 - User terkontrol – login ke server
 - Client:
 - Client khusus : Terminal client/server
 - Aplikasi hanya di server
 - Client: interface
 - Client multifungsi; workstation
 - Terkadang digunakan untuk stand-alone
 - Server:
 - Multifunction server
 - Specialized server



Model Jaringan (advantage)

- Peer-to-peer
 - Komputer client harus cukup canggih
 - Pekerjaan user di komputer (server) tersebut terganggu saat resource dipakai user lain
 - Tidak tergantung pada satu komputer (server)
- Server based
 - Cukup 1-2 orang (server) system administrator
 - Spesifikasi komputer client cukup rendah
 - Komputer client mati atau 'hang' tidak mengganggu komputer lain

Identification and Access

- What you have:
 - key, badge, token, plastic card, active badge
- What you know
 - password, ID number
- What you do
 - signature
- What you are (biometrics)
 - Finger print recognition
 - Voice print recognition
 - Retina print recognition
 - Face recognition





Access Rights

- File and folder
- Device
- User, group



Access Rights

- File and folder
 - Read
 - Read file
 - List folder content
 - Search, find, index
 - Read and Execute (file program)
 - Write
 - Update
 - Change files
 - Write folder: create file, delete file
 - Full Control: all permissions
- Device
- User, group



Access Rights

- File and folder
- Device
- User, group
 - Hak per user
 - Hak user-user dalam group
 - Automatic inheritance
 - Blocking Inheritance → explicit assignment
 - Omnibus access rights: semua orang



Latihan: database

File\ user	Karyawan	HRD	Keuangan
Kyw: NIK, nama, alamat	R	RW	R
Gaji: tgl, NIK, gol, gaji			
gajipokok: tgl berlaku, gol, gaji			

Isilah sel dengan hak user terhadap file yang sesuai!

(R)ead, (W)rite, (D)elele

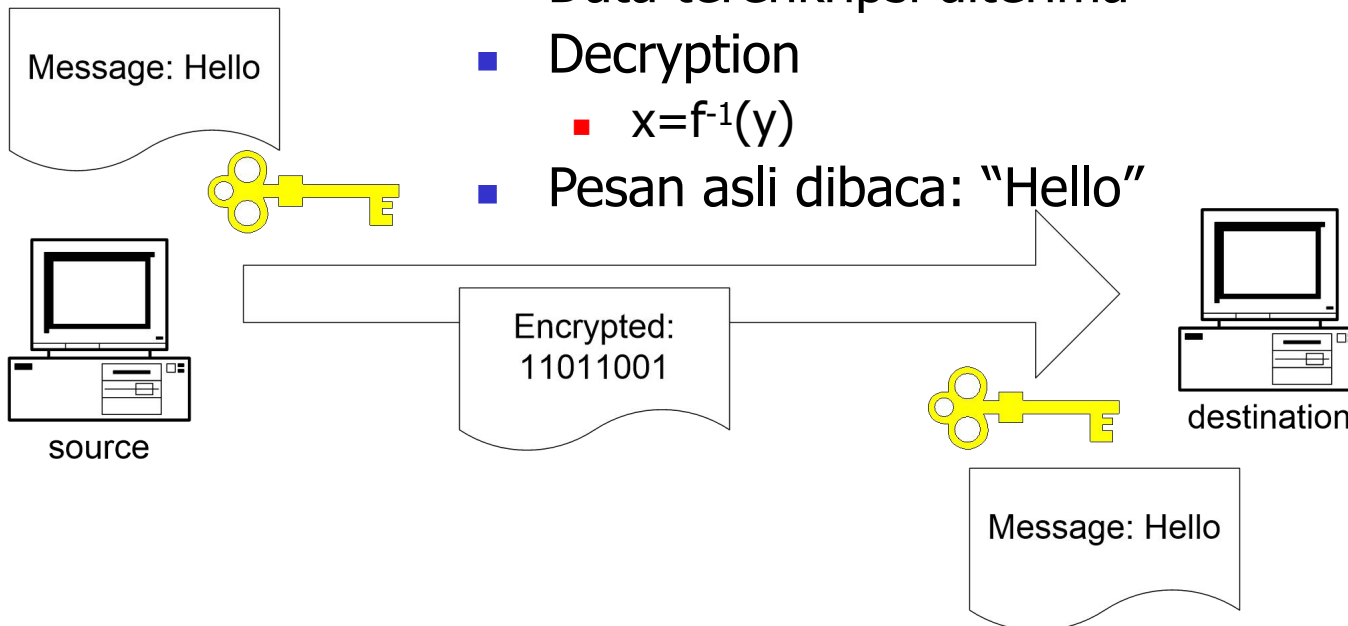


Security:

- Hacker, cracker
- Encryption, decryption
- Firewall, filter
- Virus
 - Worm
- Data Backup

Encryption

- Source mengirim pesan: "Hello"
- Encryption
 - $y=f(x)$
- Data terenkripsi dikirimkan melalui jaringan
- Data terenkripsi diterima
- Decryption
 - $x=f^{-1}(y)$
- Pesan asli dibaca: "Hello"





Firewall

- Packet yang lewat diperiksa
 - Teruskan packet yang diperbolehkan
 - Tolak packet yang dilarang

Malware

- Virus: software
 - Memperbanyak diri
 - Executable code
 - Macro, script
- Gangguan Network:
 - Worm,
 - spyware, adware,
 - Trojan
- Spam:
 - unsolicited or undesired bulk electronic messages
- Hoax: bohong, chain mail





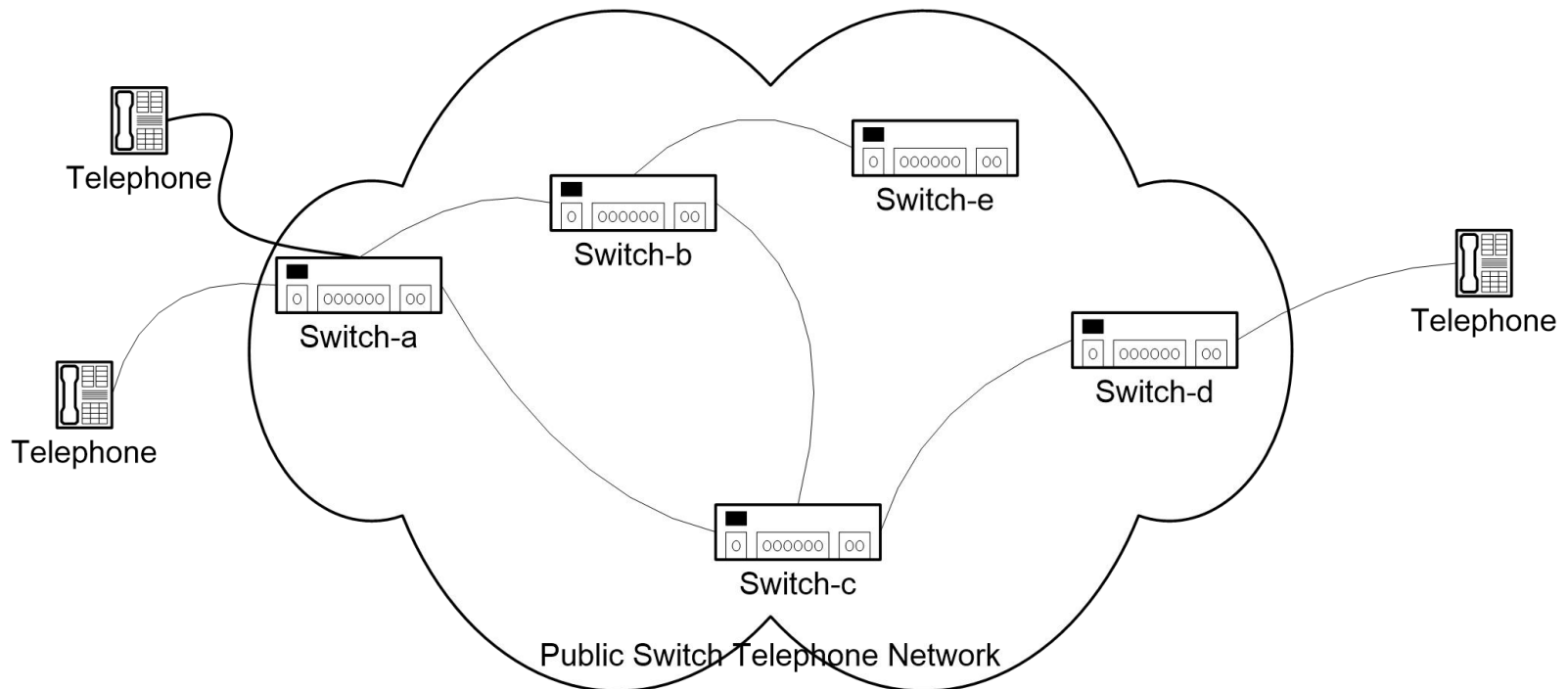
WANs

Ada banyak jenis layanan, alternatif jaringan melalui publik

- Integrated Services Digital Network (ISDN)
- Digital Subscriber Line (DSL)
 - Asymmetric DSL (ASDL)
 - Symmetric DSL (SDSL)
- Cable Modem
- Asynchronous Transfer Mode (ATM)
 - Virtual Circuits
- Wireless Internet Access
 - Transceiver (transmitter/receiver)
 - Omnidirectional Antenna
 - Satelit

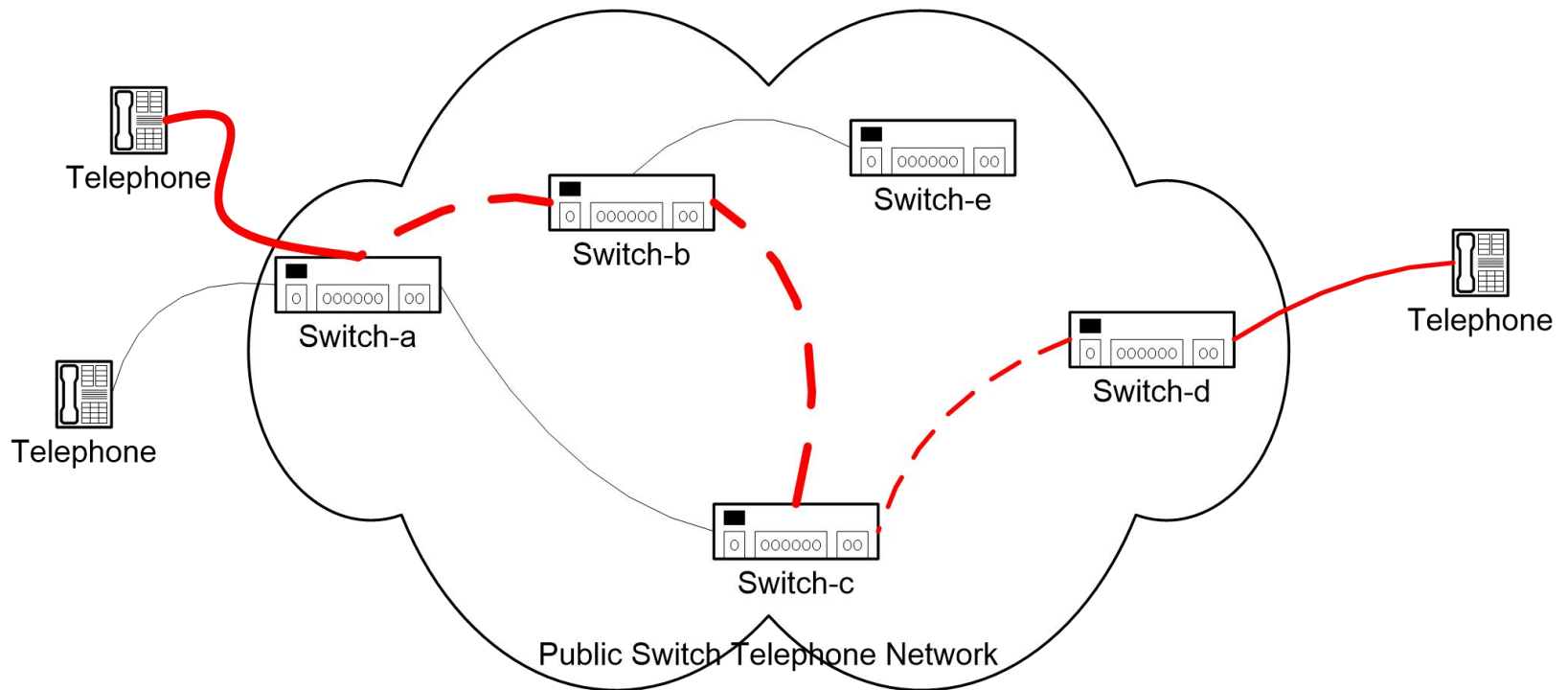
PSTN

- Setiap pesawat telepon terhubung ke switch terdekat
- Line analog



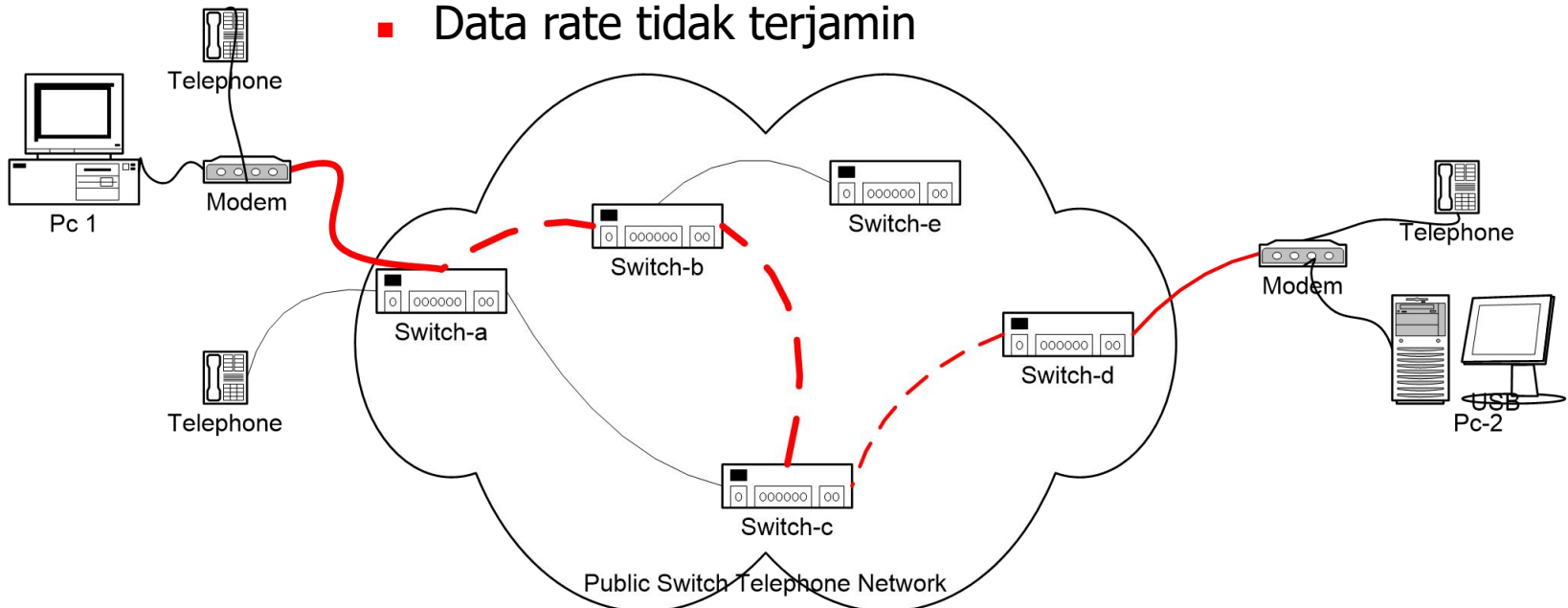
PSTN: circuit switched

- Koneksi 2 node membentuk circuit melalui switch (circuit switched)
 - Terjamin: dedicated, tidak ada sinyal terpotong
 - Line yang dilalui tidak dapat dimanfaatkan sepenuhnya



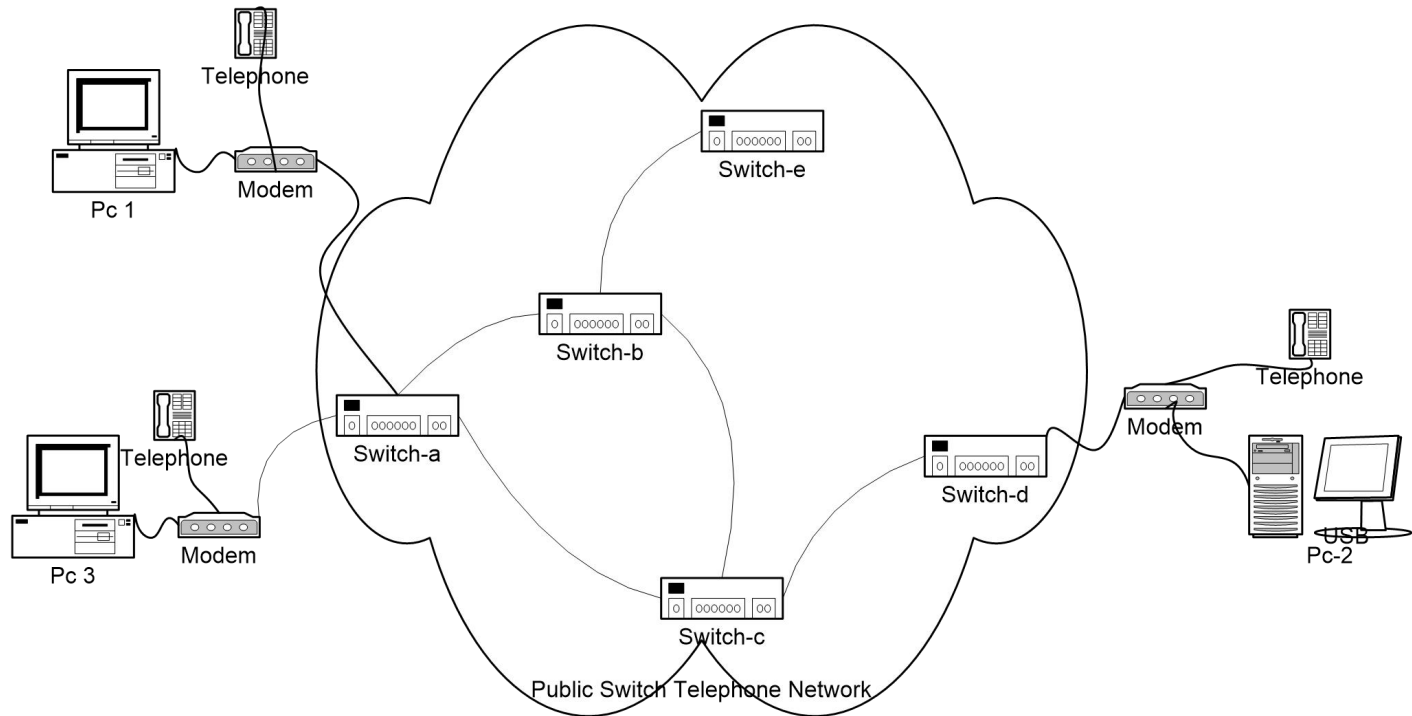
Leased Line Network

- Jaringan melalui circuit
 - Dedicated → koneksi terjamin
 - Biaya mahal
 - Tidak efisien bila traffic tidak penuh
 - Koneksi berpasangan
 - Data rate tidak terjamin



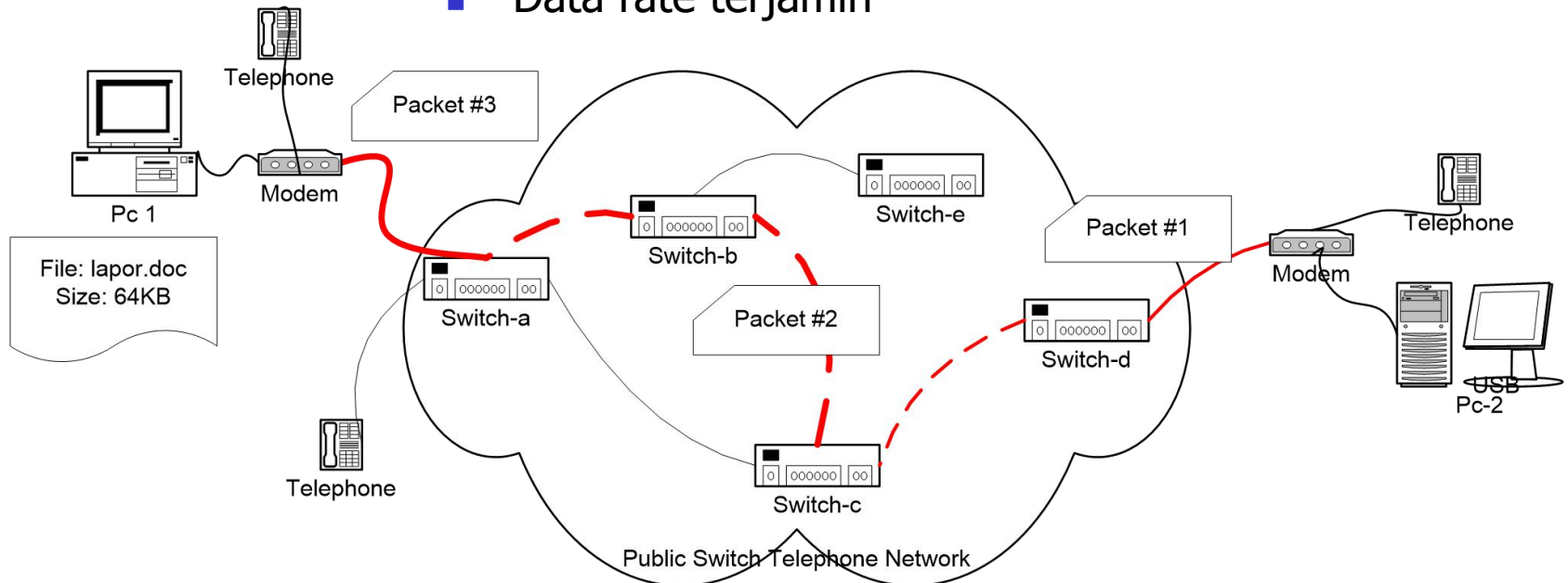
PSDN

- Public switch data network
- Line digital
 - Ganti dengan switch digital
 - Ganti kabel dengan kualitas yang lebih baik: digital, fiber optic



PSDN: packet switched

- Packet switched
 - Data dipecah beberapa packet
 - Setiap packet dapat melewati jalan sendiri
 - Ukuran packet dapat berubah sesuai situasi network
- Share line
- Data rate terjamin





PSDN: layer data link

- Bayangkan:
 - Setiap node terhubung ke "switch".
 - Provider menjamin transfer rate yang keluar/masuk port.
 - Pelanggan tidak perlu tahu apa yang ada dalam "switch"

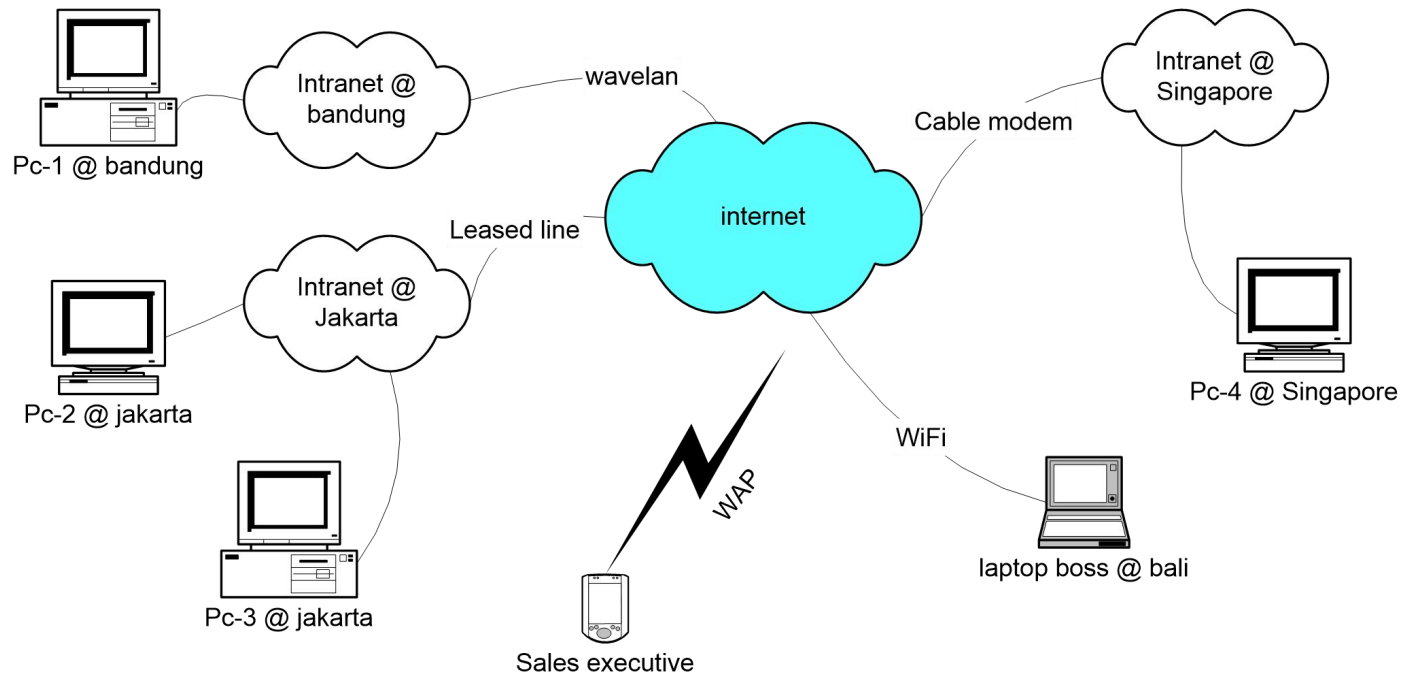


PSDN

- Service:
 - ISDN: circuit switched
 - X.25: packet switched
 - Frame Relay: packet switched
 - ATM: packet switched, virtual circuit
 - DSL: packet switched
 - SDSL: symmetric
 - ADSL: asymmetric
 - Cable modem
- Cara menghitung biaya berdasarkan:
 - Connection time
 - Total packet size

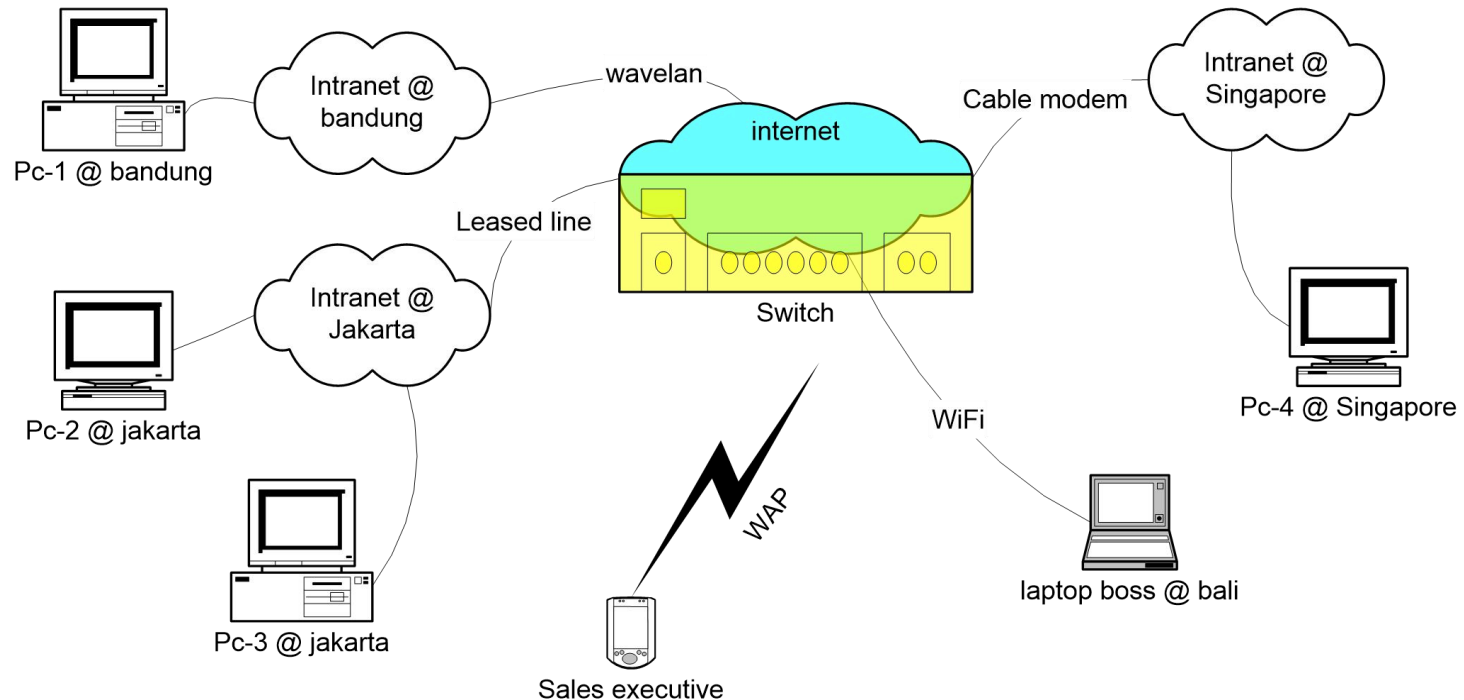
VPN: virtual private network

- Setiap cabang terhubung ke internet



VPN: virtual private network

- Internet berlaku seperti switch atau bridge
- Seolah semua terhubung dalam satu intranet





VPN: virtual private network

- Untuk jarak jauh lebih murah dibanding Leased Line maupun PSDN
- Security:
 - data melalui internet (public) kurang aman
 - Tunnel mode, IPSec, Secure Layer
- Congestion
 - Internet tidak dirancang memberikan jaminan
 - QoS: Quality of Service atas maximum latency



Ringkasan:

- Model jaringan
- Pengamanan
 - Hak akses
 - Identification
 - Security
- Akses Network



Selesai



Akibat tidak belajar!!