



ODRŽAVANJE RAČUNARSKIH SISTEMA

TEMA 6

TEMA 6.

- **MREŽNA INFRASTRUKTURA U IT PODSISTEMU**
- **STANDARDI MREŽNE INFRASTRUKTURE**
- **OPREMA I SKLOPOVI MREŽNE INFRASTRUKTURE**



RAČUNARSKA MREŽA

JE:

**SKUP VIŠE IT RESURSA KOJI SU
MEĐUSOBNO POVEZANI U FUNKCIJI
EFIKASNE RAZMENE PODATAKA I
OMOGUĆENJA KORIŠĆENJA UDALJENIH IT
RESURSA**



VRSTE RAČUNARSKIH MREŽA

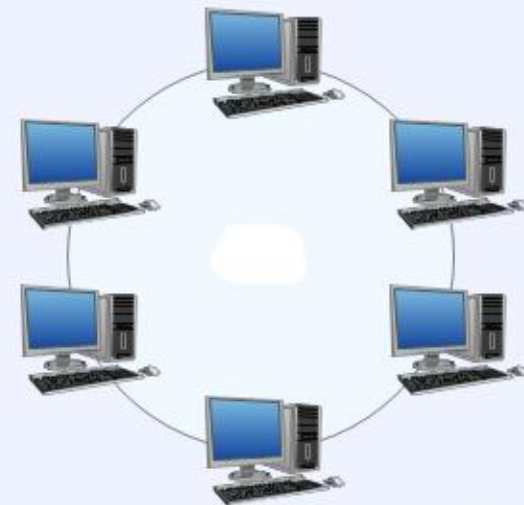
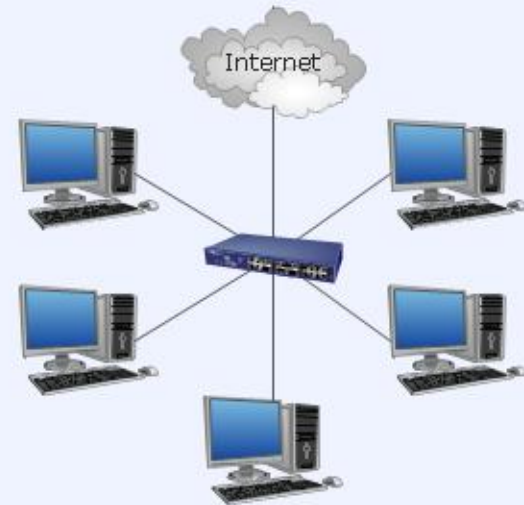
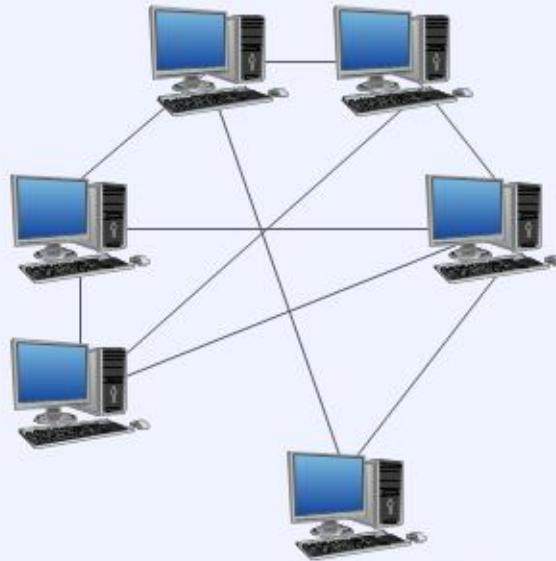
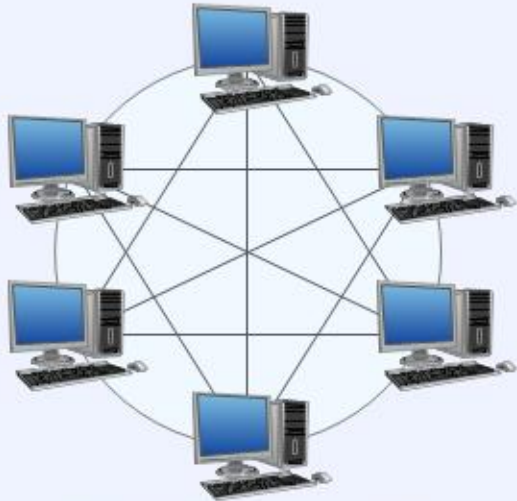
- 1. Local Area Networks (LAN)**
 - 2. Personal Area Networks (PAN)**
 - 3. Home Area Networks (HAN)**
 - 4. Wide Area Networks (WAN)**
 - 5. Campus Networks**
 - 6. Metropolitan Area Networks (MAN)**
 - 7. Enterprise Private Networks**
 - 8. Internetworks**
 - 9. Backbone Networks (BBN)**
 - 10. Global Area Networks (GAN)**
 - 11. The Internet**
- 

TOPOLOGIJE RAČUNARSKIH MREŽA

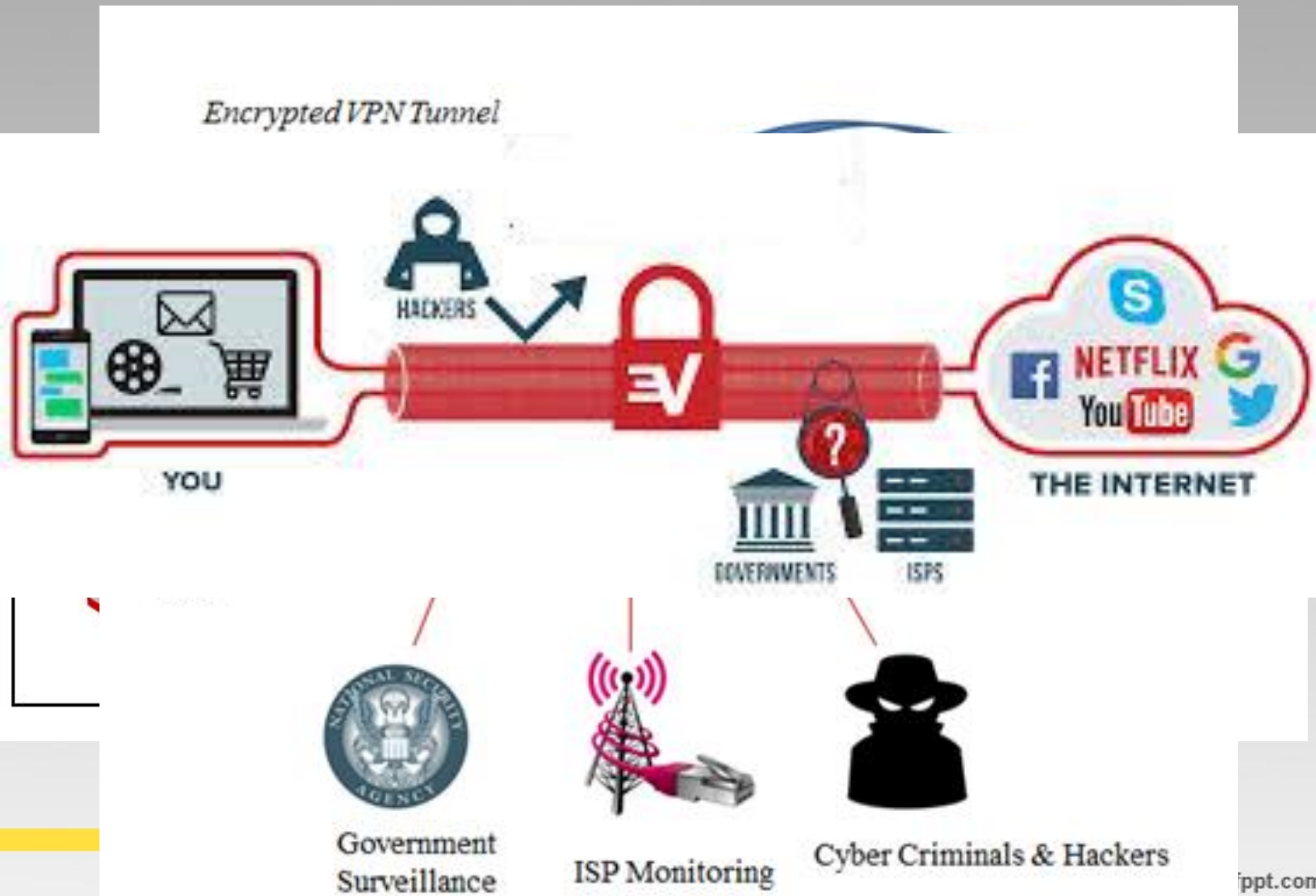
- MAGISTRALA (BUS)
- PRSTEN (RING)
- ZVEZDA (STAR)



TOPOLOGIJE RAČUNARSKIH MREŽA



VIRTUAL PRIVATE NETWORK -VPN



VPN TEHNOLOGIJE

- **PPTP**
- **IPSec**
- **L2TP**
- **OpenVPN**



VIRTUAL DESKTOP INFRASTRUCTURE



STANDARDI MREŽNE INFRASTRUKTURE

- **ETHERNET -IEEE 802.3**
- **WiFi – IEEE 802.11**



ETHERNET STANDARD –IEEE 802.3

Standard	Godina	Description
802.3a	1985	10Base-2 (thin Ethernet) 10 Mb/s repeater specifications (clause 9)
802.3c	1986	FOIRL (fiber link)
802.3d	1987	10Base-T (twisted pair)
802.3i	1990	10Base-F (fiber optic)
802.3j	1993	

ETHERNET STANDARD –IEEE 802.3

		100Base-T (Fast Ethernet and auto-negotiation)
802.3u	1995	
802.3x	1997	Full duplex
802.3z	1998	1000Base-X (Gigabit Ethernet)
		1000Base-T (Gigabit Ethernet over twisted pair)
802.3ab	1999	
802.3ac	1998	VLAN tag (frame size extension to 1522 bytes)

ETHERNET STANDARD –IEEE 802.3

802.3ad	2000	Parallel links (link aggregation)
802.3ae	2002	10-Gigabit Ethernet
802.3as	2005	Frame expansion
802.3at	2005	Power over Ethernet Plus



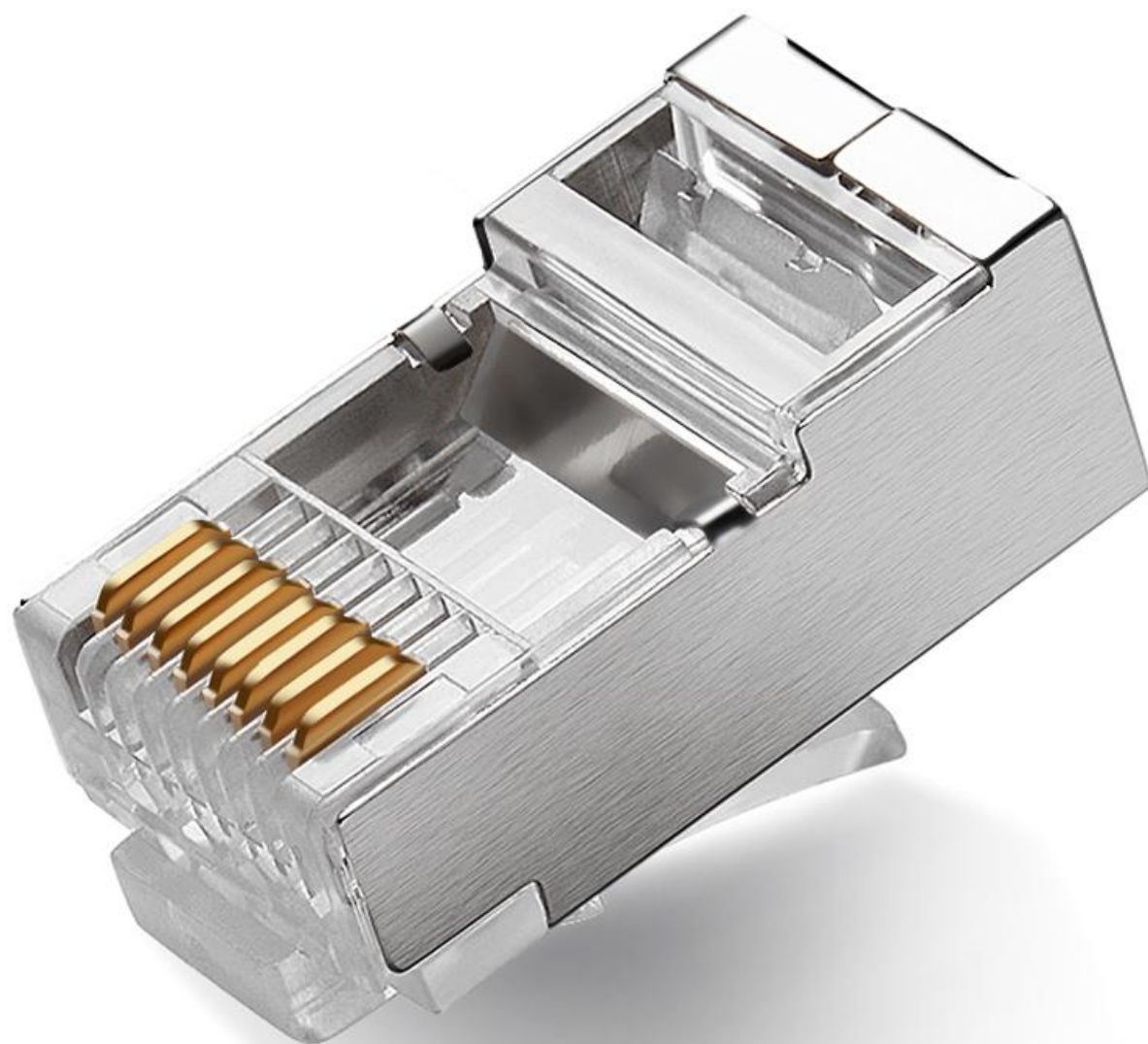
WiFi STANDARD –IEEE 802.11

	802.11a	802.11b
Standard approval	July 1999	July 1999
Maximum data rate (Mbps)	54	11
Modulation	OFDM	CCK or DSSS
RF Band (GHz)	5	2.4
Number of spatial streams	1	1
Channel width (MHz) nominal	20	20



	802.11g	802.11n
Date of standard approval	June 2003	Oct 2009
Maximum data rate (Mbps)	54	~600
Modulation	CCK, DSSS, or OFDM	CCK, DSSS, or OFDM
RF Band (GHz)	2.4	2.4 or 5
Number of spatial streams	1	1, 2, 3, 4
Channel width (MHz) nominal	20	20, 40





MREŽNA OPREMA

2. AKTIVNA

- **SWITCH-evi**
- **ROUTER-i**
- **MODEMI**
- **SERVER-i**
- **MEDIA CONVERTER-i**
- **SPECIJALIZOVANA OPREMA**



SWITCH-evi



OPŠTE KARAKTERISTIKE

- 1. BROJ PORTOVA**
- 2. BRZINA LINKA (10Mb/100Mb/1Gb)**
- 3. UPLINK MOGUĆNOSTI (PORT/SFP)**
- 4. INTERNI KAPACITET PROTOKA**
- 5. UPRAVLJIVOST**
- 6. MONTAŽA**



RUTERI



HUAWEI

Masterboard

MODEMI

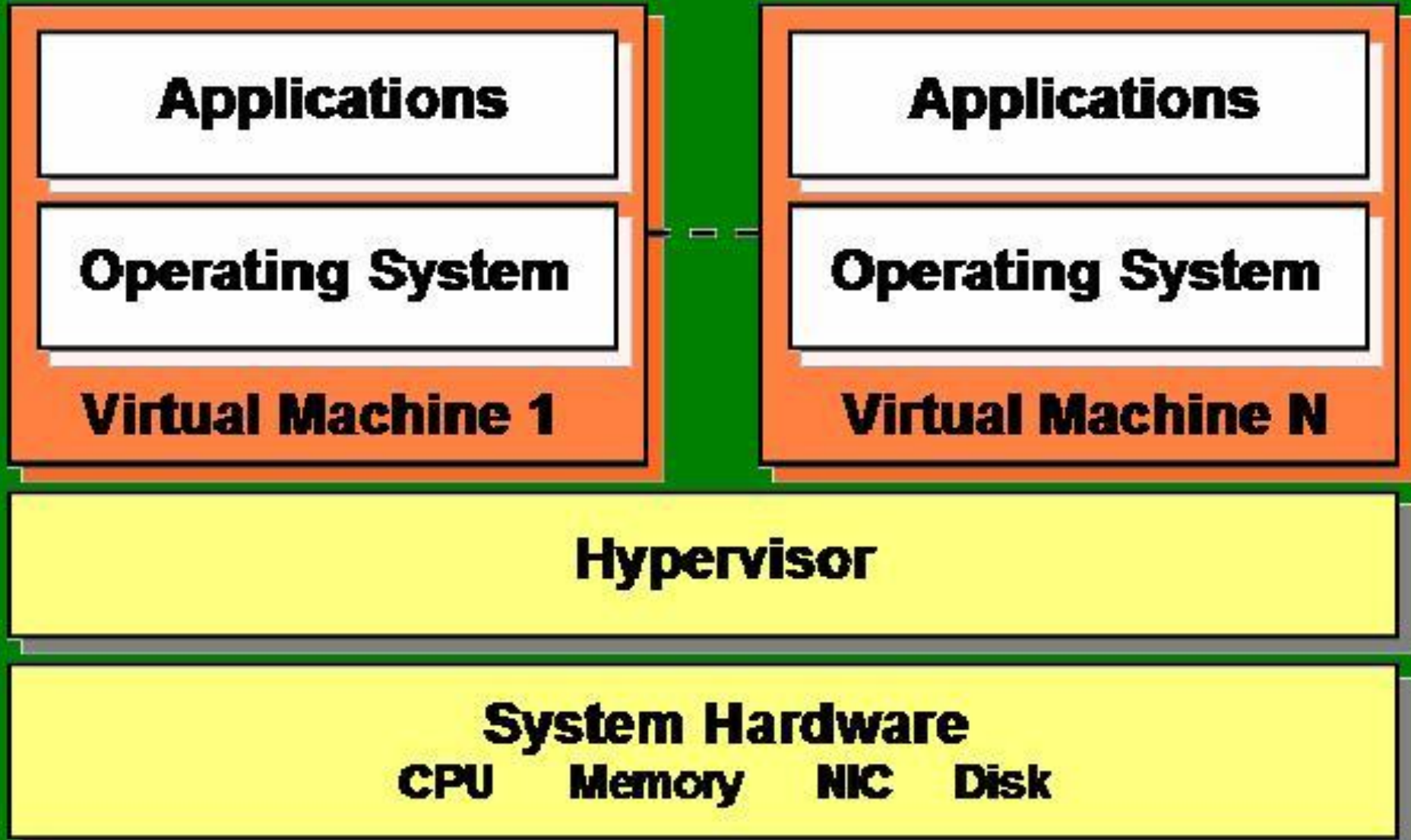


SERVERI

- 1. KLASIČNI SERVERI**
- 2. VIRTUELNI SERVERI**
- 3. CLOUD SERVERI**



HYPERVISOR



MEDIA KONVERTERI



SPECIJALNA OPREMA

- **FIREWALL**
- **VoIP**
- **REPETITORI**



THANK YOU



FOR YOUR ATTENTION