MODUL PRAKTIKUM 08

DYNAMIC ROUTING CISCO, WINDOWS

TUJUAN

Setelah praktikum dilaksanakan, peserta praktikum diharapkan memiliki kemampuan

- 1. Melakukan konfigurasi RIP pada Cisco Router
- 2. Melakukan konfigurasi RIP pada Windows Server 2008

PERANGKAT

Perangkat yang digunakan untuk praktikum adalah sbb :

- 1. Packet Tracer 3.2
- 2. Windows Server 2008
- 3. Windows XP
- 4. Kabel UTP Straight atau Cross
- 5. Switch

PROSEDUR PRAKTIKUM

Berikut topologi yang akan dijadikan materi praktikum :



1. Melakukan konfigurasi RIP pada Cisco Router

- a. Konfigurasi pada Router-A
 - i. Konfigurasi dasar

	Perin	itah			Keterangan
Router0> <mark>enable</mark>			Berpindah ke Privileged Exec		
Router0# <mark>configure</mark>	<mark>e terminal</mark>				Masuk Mode Global Configuration
Router0(config)# <mark>h</mark>	nostname Route	<mark>r-A</mark>			Mengganti nama router
Router-A(config)#	‡ <mark>interface Fas</mark>	tEthernet	0/0		Masuk Mode Interface Configuration
Router-A(config-i	if)# <mark>ip address</mark>	192.168.2	1.100 255.25	<mark>5.255.0</mark>	Memberi IP Address
Router-A(config-i	if)# <mark>no shutdow</mark>	<mark>n</mark>			Mengaktifkan interface
Router-A(config-i	if)# <mark>exit</mark>				Keluar dari Interface Configuration
Router-A(config)# <mark>interface serial 2/0</mark>			Masuk Mode Interface Configuration		
Router-A(config-if)# <mark>ip address 192.168.2.1 255.255.255.0</mark>			Memberi IP Address		
Router-A(config-if)# <mark>clock rate 56000</mark>			Memberikan clock-rate 56Kbps		
Router-A(config-if)# <mark>no shutdown</mark>			Mengaktifkan interface		
Router-A(config-if)# <mark>exit</mark>			Keluar dari Interface Configuration		
Router-A(config)# <mark>exit</mark>			Keluar dari Global Configuration		
Router-A# <mark>show ip interface brief</mark>			Melihat IP Address		
Interface	IP-Address	OK? Method	Status	Protocol	
FastEthernet0/0	192.168.1.100	YES manual	up	up	
Serial2/0	192.168.2.1	YES manual	ир	up	

ii. Konfigurasi dynamic routing

Perintah	Keterangan
Router-A# <mark>show ip route</mark>	Melihat Routing Table
Codes: C - connected, S - static, I - IGRP, R - RIP, M -	
<pre>mobile, B - BGP[truncated]</pre>	
Gateway of last resort is not set	
C 192.168.1.0/24 is directly connected, FastEthernet0/0	
C 192.168.2.0/24 is directly connected, Serial2/0	
Router-A# <mark>configure terminal</mark>	Masuk Mode Global Configuration
Router-A(config)# <mark>router rip</mark>	Masuk Mode Routing Protocol RIP
Router-A(config-router)# <mark>version 2</mark>	Memilih RIP Version 2
Router-A(config-router)# <mark>network 192.168.1.0</mark>	Menambah Network 192.168.1.0
Router-A(config-router)# <mark>network 192.168.2.0</mark>	Menambah Network 192.168.2.0

Router-A# <mark>show ip route</mark>	Melihat Routing Table
Codes: C - connected, S - static, I - IGRP, R - RIP, M -	
<pre>mobile, B - BGP[truncated]</pre>	
C 192.168.1.0/24 is directly connected, FastEthernet0/0	
C 192.168.2.0/24 is directly connected, Serial2/0	
R 192.168.3.0/24 [120/1] via 192.168.2.2, Serial2/0	

iii. Melihat dan menyimpan konfigurasi keseluruhan

Perintah	Keterangan
Router-A# <mark>show_running-config</mark>	Melihat Running-Configuration di RAM
Current configuration:	
!	
version 12.2	
!	
hostname "Router-A"	
!	
interface FastEthernet0/0	
ip address 192.168.1.100 255.255.255.0	
!	
interface Serial2/0	
ip address 192.168.2.1 255.255.255.0	
clock rate 56000	
!	
router rip	
version 2	
network 192.168.1.0	
network 192.168.2.0	
!	
!	
line con 0	
!	
end	
Router-A#copy running-config startup-config	Menyimpan konfigurasi ke NVRAM
Router-A# <mark>show_startup-contig</mark>	Melihat Startup-Configuration di NVRAM
version 12.2	
! hastnama "Douton A"	
: intonfaco EastEthonnot0/0	
in oddnoss 102 168 1 100 255 255 0	
: interface Serial2/0	
in address 192 168 2 1 255 255 255 0	
clock rate 56000	
1	
router rip	
version 2	
network 192.168.1.0	

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network 192.168.2.0	
!	
!	
!	
line con 0	
!	
end	

b. Konfigurasi pada Router-B

i. Konfigurasi keseluruhan dari Router-B

Perintah	Keterangan
Router-B# <mark>show_startup-config</mark>	Melihat Startup-Configuration di NVRAM
!	
version 12.2	
!	
hostname "Router-B"	
!	
interface FastEthernet0/0	
ip address 192.168.3.100 255.255.255.0	
interface Serial2/0	
ip address 192.168.2.2 255.255.255.0	
router rip	
version 2	
network 192.168.2.0	
network 192.168.3.0	
!	
1	
1	
line con Ø	
1	
end	

c. Menghapus konfigurasi yang salah

Menghapus konfigurasi / perintah yang salah dengan menggunakan "**no <perintah>**".

Contoh untuk menghapus IP Address: Router-A(config-if)#<mark>no ip address</mark> Router-A(config)#<mark>no router rip</mark> Router-A(config-router)#<mark>no network 192.168.1.0</mark>

- 2. Melakukan konfigurasi RIP pada Windows Server 2008
 - a. Tambahkan IP Address pada interface yang sesuai
 - b. Instalasi Routing and Remote Access melalui Server Manager

		8	
Recycle Bin			
Server Manager	Administrator Documents Computer Network Control Panel Administrative Tools + Help and Support Run		
Start Search	0		
Arstart 🛛 🚠 📃			(1) 4:07 PM

c. Tambahkan peran Server agar menjadi Routing and Remote Access

	L
File Action View Help	
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Server Manager (WIN-LNJ97F0CNF Roles	
Roles Fear Add Roles Fear Diag Remove Roles Con View View the health of the roles installed on your server and add or remove roles and features.	1
Refresh 🔗 Roles Summary	nmar
Help Roles: 0 of 16 installed Add Roles Remove R	oles
Last Refresh: 3/1/2010 4:10:04 PM Configure refresh	Þ

d. Ikuti Wizard instalasi

Add Roles Wizard	×
Before You Begin	51
Before You Begin Server Roles Confirmation Progress Results	This wizard helps you install roles on this server. You determine which roles to install based on the tasks you want this server to perform, such as sharing documents or hosting a Web site. Before you continue, verify that: • The Administrator account has a strong password • Network settings, such as static IP addresses, are configured • The latest security updates from Windows Update are installed If you have to complete any of the preceding steps, cancel the wizard, complete the steps, and then run the wizard again. To continue, click Next. • Skip this page by default
	< Previous Next > Install Cancel

e. Pilih peran "Network Policy and Access Services"



Network Policy a	nd Access Services
Before You Begin Server Roles Network Policy and Access Services Role Services Confirmation Progress Results	 Introduction to Network Policy and Access Services Wetwork Policy and Access Services allows you to provide local and remote network access and to define and enforce policies for network access service, Health Registration, and client health using Network Policy Server (NPS), Routing and Remote Access Service, Health Registration Authority (HRA), and Host Credential Authorization Protocol (HCAP). Tous can deploy NPS as a Remote Authentication Dial-In User Service (RADIUS) server and proxy and as a Network Access Protection (NAP) policy server. After installing NPS using this wizard, you can configure NPS from the NPAS home page using the NPS console. NAP helps you ensure that computers connecting to the network are compliant with organization network and client health policies. After installing NPS using this wizard, you can configure NPAS home page using the NPS console. Other NPAS console. Additional Information Overview of Network Policy and Access Services NAP enforcement methods Network Access Protection (NAP) in NPS Network Policy Server
	< Previous Next > Install Cancel

f. Pilih "Routing and Remote Access Services" serta konfirmasi instalasi

Select Role Serv	ices	
Before You Begin Server Roles Network Policy and Access Services Confirmation Progress Results	Select the role services to install for Network Policy and Access Serv Role services:	ices: Description: <u>Routing and Remote Access Services</u> provides remote users access to resources on your private network over virtual private network (VPN) or dial-up connections. Servers configured with the Routing and Remote Access service can provide LAN and WAN routing services used to connect network segments within a small office or to connect two private networks over the internet.
Confirm Installat	<previous <u="">Vext ion Selections</previous>	t > Install Cancel
Before You Begin Server Roles Network Policy and Access Services Role Services Confirmation Progress Results	To install the following roles, role services, or features, click Install. 1informational message below This server might need to be restarted after the installation Network Policy and Access Services	completes.
	< Previous	:> Install Cancel

Installation Prog	iress
Before You Begin	The following roles, role services, or features are being installed:
Server Roles Network Policy and Access Services Role Services	Network Policy and Access Services
Confirmation Progress	
Progress Results	Initializing installation Previous Next > Install Cancel
Installation Resu	llts
Before You Begin Server Roles Network Policy and Access Services	The following roles, role services, or features were installed successfully: $\underline{\Lambda}$ 1 warning message below
Role Services	Windows automatic updating is not enabled. To install the latest updates, use Windows Update in Control Panel to check for updates.
Confirmation Progress Results	Network Policy and Access Services Installation succeeded The following role services were installed: Routing and Remote Access Services Remote Access Service Routing
	Print, e-mail, or save the installation report
	< <u>Previous</u> <u>Next</u> > Close Cancel

g. Pengaturan Routing and Remote Access dapat dilakukan melalui **Administrative Tools – Routing And Remote Access**

Server Manager	<u>r</u>		
	Administrator		Terminal Services
Vindows Opdate	Documents	۵.	Component Services
Internet Explorer	,		Computer Management
	Computer	3	Data Sources (ODBC)
Notepad			DHCP
	Network	Å	DNS
Ease of Access Center	Cantral Danal		Event Viewer
	Control Panel	5	ISCSI Initiator
	Administrative Tools		Local Security Policy
			Memory Diagnostics Tool
	Help and Support	9	Network Policy Server
		۲	Peliability and Performance Monitor
	Run	2	Routing and Remote Access
		-	Security Config Use Routing and Remote Acce
		h	Server Manage Routing and Remote Access s
		9	Services
		3	Share and Storage Management
All Programs		2	Storage Explorer
 All Flogranis 		2	System Configuration
Start Search	◎ 🔒 →		Task Scheduler
			Windows Firewall with Advanced Security
🎝 Start 🛛 🚠 🥅		1	Windows Server Backup

h. Setelah jendela Routing and Remote Access terbuka, klik kanan pada komputer dan pilih **"Configure and Enable Routing and Remote Access"**

Routing and Remote Access			<u>- 🗆 ×</u>
File Action View Help			
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Routing and Remote Access	WIN-LNJ97F0CNRV (local)		
Server Status	[1	*
WIN-LNJ97F0CNR Configu	re and Enable Routing and Remote Access	: Remote	
Uisable	Kong and Kemole Access		
All Task:	; •	ss, on the Action menu, clic Remote Access.	k
View	•	up a Routing and Remote	
Delete Refresh		troubleshooting, see <u>Routin</u>	a
Properti	es		
Help			
		-	Ŧ
Configures Routing and Remote Access	for the selected server		

i. Ikuti Setup Wizard



Routing and Remote Access Server Setup Wizard
Configuration You can enable any of the following combinations of services, or you can customize this server.
 <u>Remote access (dial-up or VPN)</u> Allow remote clients to connect to this server through either a dial-up connection or a secure virtual private network (VPN) Internet connection. <u>Network address translation (NAT)</u> Allow internal clients to connect to the Internet using one public IP address. <u>Virtual private network (VPN) access and NAT</u> Allow remote clients to connect to this server through the Internet and local clients to connect to the Internet using a single public IP address. <u>Secure connection between two private networks</u> Connect this network to a remote network, such as a branch office.
Custom configuration Select any combination of the features available in Routing and Remote Access. For more information.
< <u>B</u> ack <u>N</u> ext > Cancel

Routing and Remote Access Server Setup Wizard				
Custom Configuration When this wizard closes, you can configure the selected services in the Routing and Remote Access console.				
Select the services that you want to enable on this server. VPN access Dial-up access				
Demand-dial connections (used for branch office routing)				
■ NAT				
I LAN routing				
For more information				
< <u>B</u> ack <u>N</u> ext > Cancel				

Routing and Remote Access Server Setup Wizard							
	Completing the Routing and Remote Access Server Setup Wizard						
	You have successfully completed the Routing and Remote Access Server Setup wizard.						
	Summary of selections:						
	LAN routing						
	After you close this wizard, configure the selected services in the Routing and Remote Access console.						
	To close this wizard, click Finish.						
	< <u>B</u> ack Finish Cancel						

Routing and Remote Access Server Setup Wizard					
		Completing the Routing and Remote Access Server Setup Wizard			
		You have successfully completed the Routing and Remote Access Server Setup wizard.			
		Summary of selections:			
	Routing and	Remote Access			
	Start the se	and Remote Access service is ready to use.			
		in the Routing and Remote Access console.			
		to close this wizard, click Finish.			
		< <u>B</u> ack Finish Cancel			



j. Setelah proses setup selesai, untuk melihat Routing Table bisa dilakukan melalui **"IPv4 – Static Routes – Show IP Routing Table ..."**



k. Tambahkan Routing Protocol baru melalui "IPv4 - General - New Routing Protocol..."

Routing and Remote Access				
File Action View Help				
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Routing and Remote Access	General	Type	IP Address	Incoming byt
 □ WIN-FA8LMUO3FUT (local) □ Network Interfaces □ Remote Access Logging & F □ □ IPv4 □ Gener New Interface □ □ IPv6 □ □ IPv6 □ □ Gener Show TCP/IP □ Static Show Multica Show Multica 	Locopback Local Area Connection 2 Local Area Connection Protocol Information st Forwarding Table st Statistics	Loopback Dedicated Dedicated Internal	127.0.0.1 192.168.2.1 192.168.1.100 Not available	0 63,923 65,603 -
View Refresh Export List Properties Help	*			
Add a new routing protocol				

I. "Pilih RIP Version 2 for Internet Protocol" saat memilih New Routing Protocol

New Routing Protocol	×
Click the routing protocol that you want to add, then click OK.	
Routing protocols:	
GMP Relay Agent GMP Router and Proxy	
RIP Version 2 for Internet Protocol	
OK Cancel	

m. Setelah muncul Routing Protocol RIP, tambahkan Interface melalui "IPv4 – RIP – New Interface..."



n. Pilih interface yang perlu mempertukarkan informasi Routing Table

New Interface for KIP version 2 for Internet Protocol	×
This routing protocol runs on the interface that you select below.	
Interfaces:	
Real Area Connection	
Local Area Connection 2	
	_
OK Cancel	
RIP Properties - Local Area Connection 2 Properties	? ×
General Security Neighbors Advanced	
E E Deuties lefermation Parts and (DID) laterfaces	
Routing Information Protocol (RIP) Interface	
Routing Information Protocol (RIP) Interface	
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode	
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol:	
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast	
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol:	
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2	•
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2 Added cost for routes:	•
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2 Added cost for routes: Tag for announced routes:	•
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2 Added cost for routes: Tag for announced routes: Outgoing	•
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2 Added cost for routes: Tag for announced routes: O Activate authentication	•
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2 Added cost for routes: Tag for announced routes: Image: Contract of the second sec	•
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2 Added cost for routes: Tag for announced routes: O Activate authentication Password: For more information	•
Routing Information Protocol (RIP) Interface Operation mode: Periodic update mode Outgoing packet protocol: RIP version 2 broadcast Incoming packet protocol: RIP version 1 and 2 Added cost for routes: Tag for announced routes: Password: For more information	•

o. Jika setiap router sudah ditambahkan interface yang diperlukan, hasil pertukaran dapat dilihat pada Routing Table.

	WIN-FA8LMUO3FUT - IP Routing Table					
	Destination	Network mask	Gateway	Interface	Metric	Protocol
	127.0.0.0	255.0.0.0	127.0.0.1	Loopback	51	Local
T	127.0.0.1	255.255.255.255	127.0.0.1	Loopback	306	Local
Routing and	192.168.1.0	255.255.255.0	0.0.0.0	Local Area Connection	266	Network manageme
File Action	192.168.1.100	200.200.200.200	0.0.0.0	Local Area Connection	266	Network manageme
	192,168,2,0	200.200.200.200 255 255 255 0	0.0.0.0	Local Area Connection 2	266	Network manageme
🧢 🗬 🗡 🗉	192 168 2 1	255 255 255 255	0.0.0.0	Local Area Connection 2	266	Network manageme
B Routing and F	192,168,2,255	255.255.255.255	0.0.0.0	Local Area Connection 2	266	Network manageme
Server St	192.168.3.0	255.255.255.0	192.168.2.2	Local Area Connection 2	13	RIP
UN FAS	224.0.0.0	240.0.0.0	0.0.0.0	Local Area Connection	266	Network manageme
Netwo	255.255.255.255	255.255.255.255	0.0.0.0	Local Area Connection	266	Network manageme
Remo						
	eneral					
<u> </u>	tatic Ro					
	New Sta	tic Route				
🖃 🚊 IPv6	Show IP	Routing Table				
<u> </u>	eneral					
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	Defrech		-			
1	Europh					
1	Export L	IST				
1	Help					
			-			
•						Þ
Show IP Routing T	able					