01/11/2022

Infrastructure et réseaux

Domain Name System



Table des matières

1.	Don	nain Name System	2
2.	DNS	Service	2
	2.1	How to make a snapshot?	2
	2.2	Install the DNS related role and feature on your Server	2
3.	Netwo	ork settings	4
3.	Hor	ne.arpa	6
4.	Con	figure1	.1
5.	Test	t 1	.3

1. Domain Name System

The Domain Name System (DNS) is the hierarchical and distributed namingsystem used to identify computers reachable through the Internet. It is mostcommonly used to map human-friendly domain names to the numerical IPaddresses computers need to locate services and devices using the underlyingnetwork protocols. **C'est la définition du prof si jamais**

2. DNS Service

Manage Snapshots 2209_WIN_Uka_Zotri	im		×
✓ ☐ 2209_WIN_Uka_Zotrim ✓ ☐ mardi 1.11.22 serveur dns	Name	mardi 1.11.22 serveur dns	
Vou are here	Created	11/01/2022, 2:18:21 PM	
	Disk usage	11.25 GB	
	Snapshot the virtual machine's memory	Yes	
	Quiesce guest file system	No	
		EDIT	
DELETE ALL DELETE REVERT TO			
		DONE	

We made a snapshot, just in case we had problems so we could go back.

2.1 How to make a snapshot?

We must go to vSphere Client, choose our server, then in action, snapshots, take a snapshots, rename it as you want and click on ok.

To check if it is good, we go back to snapshots, eat snapshot and it should appear.

2.2 Install the DNS related role and feature on your Server.

We launch the virtual machine, we go to the tab manage then to Add Roles and Features Wizard. A new window will open, we will have to check "DNS Server" then we click on next and then we will have to click on Add Features and on install.

Da Loc All File	Select server role Before You Begin Installation Type	Select one or more roles to insta Roles	II on the selected server.	OSTI WIN-1 Description	NATION SERVER PREDOGQMISM	
1 15	Server Selecton Server Roles Partores Confirmation Arrody	Active Discarcy Central Active Discarcy Dennis Discarcy Health Altestation Discarcy Health Altest	es Services	Donain Name, Spann provider, aname resoluti networks. DNS Ener- manager when it is into same sprever as Active Donain Smirnes. Hyos Active Directory Doma Directory Doma Directory Doma Directory Doma Domain Smirnes. Hyos Domain Smirnes to wo	(DNS) Server ion for TC/VP is easier to alided on the Directory select the in Services d configure Directory rik together.	Hide
			< Previous New	t >	Cancel	
		Performance BPA results	Services Performa	ince		



Server	Manager			<u> </u>	— 🗇 🗙 Tools View Help
III DA	Before You Begin Installation Type Server Selection Server Roles Features DNS Server Confirmation Results	n selections To install the following roles, ro Control Restart the destination sem Optional features (such as admi been selected automatically. If y their check boxes. DNS Server Remote Server Administration Role Administration Tools DNS Server Tools Export configuration settings Specify an alternate source pate	le services, or features on selected server, click ver automatically if required inistration tools) might be displayed on this pa you do not want to install these optional featur Tools	DESTINATION SERVER WIN-PKBOGGQMUSM Install. Ige because they have res, click Previous to clear	Hide
	P Type here to search	Performance BPA results	Erevious Next > Services Performance BPA results End BPA results	Install Cancel	^ € 4. 1:14 PM

3. Network settings

Once installed, we must go to the network parameters to have a static IP address and not dynamic, for this we must go to the network parameters, we click on change adapter option, a new page will open, we make right click on Ethernet0 and we click on properties.

We will have to select Internet protocol version 4 (TCP/iPv4) and click on Configure.

A new page will open:

- IP address: This is the personal IP of each student.
- Subnet mask: 255.255.255.0
- Default gateway: 10.130.25.1

You have to check "use the following DNS server addresses" and put in preferred DNS server: 127.0.0.1 and click on ok.

Settings		-21	٥	\times
 ᢙ Home Find a setting Network & Internet Status Status Status ■ Status 	Status Network Private network You're connected to the Internet You're on a metered network. Some apps might work differently to help you save data while on this network. Troubleshoot			
윤 Dial-up 양 VPN	Show available networks View the connection options around you.			
Proxy	Advanced network settings Image adapter options View network adapters and change connection settings. Image adapter options View network adapters and change connection settings. Image adapter options Image adapter options View network adapters and change connection settings. Image adapter options View hardware and connection properties Windows Firewall			
₽ Type here to search		40 d <mark>≥</mark> 11/	38 AM /1/2022	



ettings				-
Home Ctatus				~
Find a patting				
Find a setting $\leftarrow \rightarrow$ \checkmark \uparrow $\textcircled{2}$ \checkmark Network and Internet \rightarrow	Network Connections 🗸 🗸	Ö Sean	ch Network Connection:	s ,P
letwork & Interne Graanize > Disable this network device	Diagnose this connection Rename this r	connection ×		0
Ethernet0 Properties	X Internet Protocol Vers	tion 4 (TCP/IPv4)	Properties	X
Status	General			
Connect using:	You can get IP setting this capability. Other	gs assigned auton wise, you need to	natically if your network su ask your network administ	pports
Ethernet	for the appropriate IF	P settings.		
	Configure O Obtain an IP ad	dress automatical	A	
Dial-up This connection uses the following items:	Use the followin	ng IP address:		
VIDN	works		10 . 130 . 25 . 137	
VPIN ZQoS Packet Scheduler Internet Protocol Version 4 (TCP/IPv4)	S <u>u</u> bnet mask:		255.255.255.0	
Proxy	otocol Default gateway:		10 . 130 . 25 . 1	
Image: A second se	✓ Obtain DNS service	ver address autom	natically	
<	> OUse the followin	ng DNS server add	resses:	
Install Uninstall	Properties Preferred DNS ser	ver:	127.0.0.1	
Description Transmission Control Protocol/Internet Protoco	Alternate DNS sen	ver:		
wide area network protocol that provides comm across diverse interconnected networks.	unication 🗌 Validate setting	gs upon exit	Ad <u>v</u> an	iced
Close	Cancel		ОК	Cancel
1 item 1 item selected				
P Type here to search	💽 🚍 📥 🚠 🧔		^	€ 48 1

3. Home.arpa

In the windows search bar you write "dns" and open the application downloaded in the previous point.



First of all you left click on "WIN-PKBOGGQMJSM". Then you click on "Configure DNS Server".

				_	•
. DNS Manager			-	D	
File Action View	Help				_
Þ 🔿 🖄 📰 🗙					
🛔 DNS	Name				
WIN-PKBCCCC	Configure a DNS Server				
	New Zone				
	Set Aging/Scavenging for All Zones				
	Scavenge Stale Resource Records				
	Update Server Data Files				
	Clear Cache				
	Launch nslookup				
	All Tasks	>			
	View	>			
	Delete				
	Refresh				
	Export List				
	Properties				
	Help				

A new page will open, click on next.



Make sure that the first box is checked and click on next.

Iect Configuration Action You can choose the lookup zone types size. Advanced administrators can con	that are appropriate to your network figure root hints.
Select the action you would like this wi	zard to perform:
Create a forward lookup zone (reco	mmended for small networks)
This server is authoritative for the other queries to an ISP or other DP hints but not create a reverse look	DNS names of local resources but forwards all IS servers. The wizard will configure the root up zone.
O Create forward and reverse lookup	zones (recommended for large networks)
This server can be authoritative for configured to perform recursive re- or both. The wizard will configure to	r forward and reverse lookup zones. It can be solution, forward queries to other DNS servers, he root hints.
O Configure root hints only (recomme The wizard will configure the root h reverse lookup zones and forwards	nded for advanced users only) ints only. You can later configure forward and ers.

Check again if the first box is checked and click on next

Configure a DNS Server Wizard	×
Primary Server Location You can choose where the DNS data is maintained for your network resources.	M. Annual
Which DNS server maintains your primary forward lookup zone?	
 This server maintains the zone The wizard will help you create a primary forward lookup zone. An ISP maintains the zone, and a read-only secondary copy resides on this ser The wizard will help you create a secondary forward lookup zone. 	ver
< Back Next >	Cancel

The next page you should enter the zone name "home.arpa" if it does not work add an "s" to "arpa" and click on next.

New Zone Wizard	×
Zone Name What is the name of the new zone?	- Mi Anna
The zone name specifies the portion of the DNS namespace for which this ser authoritative. It might be your organization's domain name (for example, mic or a portion of the domain name (for example, newzone.microsoft.com). The not the name of the DNS server.	rver is crosoft.com) zone name is
Zone name:	
home.arpa	
< Back Next >	Cancel

Then you leave it like that and click on next.

lew Zone Wizard	×
Zone File You can create a new zone file or use a file copied from another DNS server.	
Do you want to create a new zone file or use an existing file that you have copied from another DNS server?	
Oreate a new file with this file name:	
home.arpa.dns	
○ Use this existing file:	
To use this existing file, ensure that it has been copied to the folder %SystemRoot%\system32\dns on this server, and then click Next.	
< Back Next > C	ancel

Make sure that the last box is checked and press next.

You can updates.	date pecify that this DNS	Szone accepts s	ecure, nonsecu	re, or no dynamic	
Dynamic resource	updates enable DNS records with a DNS :	dient computer server wheneve	s to register an er changes occu	d dynamically upda r.	ate their
Select th	type of dynamic up	odates you want	t to allow:		
O Allow This d	only secure dynamic ption is available on	updates (recon ly for Active Dire	nmended for Ac ectory-integrate	tive Directory) ed zones.	
O Allow Dyna	both nonsecure and mic updates of resou	secure dynamic arce records are	updates accepted from	any client.	
4	This option is a sign accepted from untr	ificant security v usted sources.	vulnerability bed	ause updates can	be
Do no Dynar these	allow dynamic upda nic updates of resou records manually.	ates rce records are	not accepted b	y this zone. You m	ust update

Here you have to check the second box, because we do not want a forward.

Configure a DNS Server Wizard			×
Forwarders Forwarders are DNS serve answer.	rs to which this server	sends queries t	hat it cannot
Should this DNS server for O Yes, it should forward o	ward queries? queries to DNS servers	with the followir	ng IP addresses:
IP Address	Server FQDN	Validated	Delete
<click here="" th="" to<=""><td></td><td></td><td>Un</td></click>			Un
			UP UP
			Down
No, it should not forwar If this server is not cor root name servers.	rd queries Ifigured to use forward	ers, it can still r	esolve names using
	<	Back N	ext > Cancel

And on the last page you click on finish.

Completing the Configure a DNS Server Wizard You have successfully completed the Configure a DNS Server Wizard. When you click Finish, the following settings will be					
Settings:					
DNS server to configure: WIN-PKBOGGQMJSM Forward lookup zone to create: home.arpas					
Configure the hosts that will use this DNS server to point to this DNS server for name resolution, and then verify name resolution using nslookup. If you added a new primary zone, add resource records to it for the hosts whose names need to be resolved by this DNS server.					
To close this wizard, click Finish,					

4. Configure

Now your folder appears, you select and in the large white area, you right click and you click on "New Host (A or AAAA)



Here we will enter different hosts.

you put the first name first followed by the last name without space then you put a dot followed by home you put a dot followed by arpa.

And in the IP address you put the personal IP address of each student: 10.130.25.XXXX

You repeat the action as many times as you want with different students

DNS Manager				-	đ	\times
File Action View Help						
🗢 🌳 🙎 🔀 🗐 🙆 📥 🛽	? 🖬 🗄 🗐 🛱					
 DNS UNIN-FKBOGGQMUSM Forward Lookup Zones Immerapas Reverse Lookup Zones Trut Points Conditional Forwarders 	Name (same as parent folder) (Type Start of Authority (SOA) Name Server (NS) Host (A) Host (A) New Host Name (uses parent domain name if th firstNameLastName.home.arpa.hor Pully qualified domain name (FQON) Create associated pointer (PTR)	Data [4]. win-pkboggqmjsm, h win-pkboggqmjsm, 10.130.25.29 10.130.25.120 Kank): me.arpas. record Add Host Cancel			

Now we will disable the recursively mode. To do this you right click on the server "WIN-PKBOGGQMJSM" and click on properties.

Then you go to the "Advanced" tab and you check the box "Disable recursion(also disables forwarders)" then you click on apply and ok.



5. Test

Now we will test the server. To do this open Administrator command prompt. Once open enter the following command: nslookup - IP

You need to put the ip of your dns server.

Then you simply enter the different users: FirstnameLastname.home.arpa

