## Johanyák Zsolt Csaba, Göcs László

# Windows hálózati adminisztráció a gyakorlatban

2014

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1.0. Kiadás

A szerzők a könyv írása során törekedtek arra, hogy a leírt tartalom a lehető legpontosabb és naprakész legyen. Ennek ellenére előfordulhatnak hibák, vagy bizonyos információk elavulttá válhattak.

A könyvben leírt példákat mindenki saját felelősségére alkalmazhatja. Javasoljuk, hogy ezeket ne éles környezetben próbálják ki. A felhasználásból fakadó esetleges károkért a szerzők nem vonhatók felelősségre.

Az oldalakon előforduló márka- valamint kereskedelmi védjegyek bejegyzőjük tulajdonában állnak.

A könyv elektronikus változata elérhető a http://gamfinfo.hu/ oldalról.

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#### 1. Parancssori alapok (CMD.EXE) (Johanyák Zsolt Csaba)

A CMD.EXE-t használó parancssori utasításokat két csoportba oszthatjuk aszerint, hogy milyen felhasználói jogosultsággal futtathatóak. Elsőként az egyszerű felhasználó (USERS csoport tagja) szintjén használható parancsokat tekintjük át, majd azokkal foglalkozunk, amelyeknek végrehajtásához rendszergazdai privilégiumok szükségesek.

#### 1.1. Az egyszerű felhasználó számára elérhető parancsok

Parancssor indítása

#### Win+R

	Run ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
<u>O</u> pen:	cmd 🗸
	OK Cancel <u>B</u> rowse



#### TCP/IP beállítások:

Lekérdezés

Az összes hálózati adapter minden adata ipconfig /all

Csak a fizikai (MAC) címek lementése szöveges állományba ipconfig/all |find "Physical" > c:\mac.txt getmac > c:\mac.txt

Szöveges állomány tartalmának megjelenítése a konzolon type c:\mac.txt

Alternatív lekérdezés netsh interface ip show config

	_
C:\Windows\system32\cmd.exe ×	
Microsoft Windows [Version 6.3.9600] (c) 2013 Microsoft Corporation. All rights reserved.	
C:\Users\Hallgato>ipconfig /all	1
Windows IP Configuration	
Host Name	
Ethernet adapter Ethernet:	
Connection-specific DNS Suffix .: Description	
Physical Address	

Dinamikusan kapott konfiguráció eldobása, majd új konfiguráció kérése DHCP kiszolgálótól ipconfig /release ipconfig /renew

C:\Windows\system32\cmd.exe ×
C:\Users\Hallgato>ipconfig /release
Windows IP Configuration
Ethernet adapter Ethernet:
Connection-specific DNS Suffix . : Link-local IPv6 Address : fe80::35f7:5f20:b177:4be%3 Default Gateway
Tunnel adapter Local Area Connection* 3:
Connection-specific DNS Suffix . : IPv6 Address
C:\Users\Hallgato>ipconfig /renew
Windows IP Configuration
Ethernet adapter Ethernet:
Connection-specific DNS Suffix . : localdomain Link-local IPv6 Address : fe80::35f7:5f20:b177:4be%3 IPv4 Address : 192.168.80.135 Subnet Mask : 255.255.255.0 Default Gateway : 192.168.80.2
Tunnel adapter Local Area Connection* 3:
Connection-specific DNS Suffix . : IPv6 Address 2001:0:9d38:6abd:24c5:e35:3f57:af78 Link-local IPv6 Address : fe80::24c5:e35:3f57:af78%5 Default Gateway : ::
Tunnel adapter Reusable ISATAP Interface {5E9E0452-7F2A-4E78-8422-5AEC884C9F44}:
Media State

Arp tábla tartalmának megtekintése

arp –a		
<b>C</b>	C:\Windows\system32\cmd.exe	×
C:∖Use	rs∖Hallgato}arp -a	^
Interf Inte 192. 192. 224. 224. 239. 255.	ace: 192.168.15.2 0x3 rnet Address Physical Address Type 168.15.254 00-0c-29-e5-8e-d1 dynamic 168.15.255 ff-ff-ff-ff-ff static 0.0.22 01-00-5e-00-00-16 static 0.0.252 01-00-5e-00-00-fc static 255.255.250 01-00-5e-7f-ff-fa static 255.255.255 ff-ff-ff-ff-ff static	
C:\Use	rs\Hallgato}_	
<		<b>&gt;</b>

A kapcsolat ellenőrzése ping segítségével. ping 192.168.15.254

A tényleges kipróbáláshoz a megcélzott gép tűzfalán engedélyeznünk kell a ping parancs átengedését. Ezt egy későbbi gyakorlatban fogjuk megnézni részletesen, most kapcsoljuk aki egyszerűen a megcélzott gépen a tűzfalalt grafikus felületen vagy a következő szakaszban ismertetésre kerülő módon. Ezt követően a sikeres ping eredménye: 1. Parancssori alapok (CMD.EXE) (Johanyák Zsolt Csaba)



Helyi felhasználói fiókok listájának lekérdezése net user



Névfeloldás ellenőrzése nslookup technetklub.hu nslookup 93.88.196.24

C:\Windows\system32\cmd.exe	- 🗆 ×
C:\Users\Hallgato>nslookup technetklub.hu Server: belzebub.gyakorlat.local Address: 192.168.15.254	^
Non-authoritative answer: Name: technetklub.hu Address: 93.88.196.25	
C:\Users\Hallgato>nslookup 93.88.196.24 Server: belzebub.gyakorlat.local Address: 192.168.15.254	
Name: devportal.hu Address: 93.88.196.24	
C:\Users\Hallgato>	<b>∨</b> >:

#### Futó alkalmazások listája tasklist

	C:\Windows\system32\cmd.exe		- 🗆 🗙
conhost.exe vmtoolsd.exe WWAHost.exe RuntimeBroker.exe WSHost.exe conhost.exe conhost.exe conhost.exe svchost.exe TabTip.exe TabTip32.exe WmiPrvSE.exe iexplore.exe SearchProtocolHost.exe SearchProtocolHost.exe iexplore.exe tasklist.exe C:\Users\Hallgato>_	2940 Console 3460 Console 3752 Console 3836 Console 3888 Console 2868 Console 2640 Console 2440 Console 2428 Console 2036 Services 3616 Console 2292 Console 2320 Services 3648 Console 3432 Services 2528 Services 2532 Console 2348 Console 2348 Console	ุ่งกงกงกงกงองกองกอ	<pre></pre>

Folyamat leállítása taskkill /pid 2532

### Futó szolgáltatások

ruto szolganalasok	
sc queryex	
	C:\Windows\system32\cmd.exe -
WIN32_EXIT_CODE SERVICE_EXIT_CODE CHECKPOINT WAIT_HINT PID FLAGS SERVICE_NAME: WSearch DISPLAY_NAME: Windows Search TYPE STATE WIN32_EXIT_CODE SERVICE_EXIT_CODE CHECKPOINT WAIT HINT	(STOPPABLE, NOT_PAUSABLE, ACCEPTS_SHUTDOWN) 0 (0×0) 0 (0×0) 0×0 0×0 0×0 10 WIN32_OWN_PROCESS 4 RUNNING (STOPPABLE, NOT_PAUSABLE, ACCEPTS_SHUTDOWN) 0 (0×0) 0×0 0×0
PID FLAGS	2992
C:\Users\Hallgato>_	
<	

Szolgáltatás szüneteltetése és folytatása sc pause winmgmt sc continue winmgmt

×

CAL.	Administrator: Command Prompt	-	×	
C:\Windows\system32>sc con [SC] ChangeServiceConfig S	fig mpssvc start=disabled UCCESS		^	
C:\Windows\system32>sc pau	se winmgmt			
SERVICE_NAME: winmgmt TYPE STATE WIN32_EXIT_CODE SERVICE_EXIT_CODE CHECKPOINT WAIT_HINT	: 20 WIN32_SHARE_PROCESS : 7 PAUSED (STOPPABLE, PAUSABLE, ACCEPTS_SHUTDOWN) : 0 (0x0) : 0 (0x0) : 0x0 : 0x0 : 0x0			
C:\Windows\system32>sc con	tinue winmgmt			
SERVICE_NAME: winmgmt TYPE STATE WIN32_EXIT_CODE SERVICE_EXIT_CODE CHECKPOINT WAIT_HINT	: 20 WIN32_SHARE_PROCESS : 4 RUNNING (STOPPABLE, PAUSABLE, ACCEPTS_SHUTDOWN) : 0 (0x0) : 0 (0x0) : 0x0 : 0x0 : 0x0			
C:\Windows\system32>			v	

Rendszerinformációk lekérdezése systeminfo

	C:\Windows\system32\cmd.exe – 🗖	×
C:\Users\Hallgato>systemin <sup>.</sup>	fo	^
Host Name: OS Name: OS Version: OS Manufacturer: OS Configuration: OS Build Type: Registered Owner:	THOR Microsoft Windows 8.1 Enterprise Evaluation 6.3.9600 N/A Build 9600 Microsoft Corporation Member Workstation Multiprocessor Free Hallgato	
Product ID: Original Install Date: System Boot Time: System Manufacturer: System Model: System Type: Processor(s):	00260-60000-00000-AA427 2/11/2014, 7:58:27 PM 3/5/2014, 2:35:23 PM VMware, Inc. VMware Virtual Platform x64-based PC 1 Processor(s) Installed. [01]: Intel64 Family 6 Model 15 Stepping 11 Genuing	Đ
tel ~2400 Mhz BIOS Version: Windows Directory: System Directory: Boot Device: System Locale: Input Locale: Time Zone:	Phoenix Technologies LTD 6.00, 7/31/2013 C:\Windows C:\Windows\system32 \Device\HarddiskVolume1 en-us;English (United States) hu;Hungarian (UTC+01:00) Belgrade, Bratislava, Budapest, Ljublja	3
, Frague Total Physical Memory: Available Physical Memory: Virtual Memory: Max Size: Virtual Memory: Available: Virtual Memory: In Use: Page File Location(s): ≺	2,047 MB 1,303 MB 3,199 MB 2,118 MB 1,081 MB C:\pagefile.sys	×

Telepített driver programok listája driverquery

<b>64</b>	C:\Wind	ows\system32\cmd.exe	-	□ ×
C:\Users\Hal	lgato>driverquery			^
Module Name	Display Name	Driver Type	Link Date	
1394oncı	1394 UHCI Compliant Ho	Kernel	8/22/2013 1:38:14 PM	
Sware	Sware	Kernel	4/12/2013 12:49:23 AM	
ACPI	Microsoft ACPI Driver	Kernel	8/22/2013 1:39:35 PM	
acpiex	Microsoft ACPIEx Drive	Kernel	8/22/2013 1:37:47 PM	
acpipagr	ACPI Processor Aggrega	Kernel	8/22/2013 1:38:48 PM	
ACP1Pm1	ACPI Power Meter Drive	Kernel	8/22/2013 1:38:53 PM	
acpitime	ACPI Wake Alarm Driver	Kernel	8/22/2013 1:38:58 PM	
ADP80XX	ADP80XX	Kernel	7/12/2013 11:47:36 PM	
AFD	Ancillary Function Dri	Kernel	8/22/2013 1:36:50 PM	
agp440	Intel AGP Bus Filter	Kernel	8/22/2013 1:39:35 PM	
AmdK8	AMD K8 Processor Drive	Kernel	8/22/2013 10:46:34 AM	
AmdPPM	AMD Processor Driver	Kernel	8/22/2013 10:46:34 AM	
amdsata	amdsata	Kernel	7/9/2013 12:54:38 AM	
amdsbs	amdsbs	Kernel	12/11/2012 10:21:44 PM	
amdxata	amdvata	Kernel	7/9/2013 12:45:00 AM	
App ID	AppID Driver	Kernel	8/22/2013 1:36:43 PM	
arcsas	Adaptec SAŞ/SATA-II RA	Kernel	7/9/2013 2:50:17 AM	
atapi	IDE Channel	Kernel	8/22/2013 1:40:39 PM	
b06bdrv	Broadcom NetXtreme II	Kernel	2/4/2013 8:47:18 PM	
BasicDisplavi	BasicDisplay	Kernel	8/22/2013 1:39:31 PM	
BasicRender	BasicRender	Kernel	8/22/2013 1:39:27 PM	
bcmfn2	bcmfn2 Service	Kernel	8/3/2013 1:59:11 AM	
Beep	Beep	Kernel	8/22/2013 1:40:24 PM	
bowser	Browser Support Driver	File System	8/22/2013 1:38:38 PM	
BthAvrcpIg	Bluetooth Audio/Video	Kernel	8/22/2013 1:38:39 PM	
BthHFEnum	Bluetooth Hands-Free A	Kernel	8/22/2013 1:37:42 PM	, v
bthhfhid	Bluetooth Hands-Free C	Kernel	8/22/2013 1:38:16 PM	

További hasznos parancsok táblázatosan összefoglalva.

Feladat	Parancs
Súgó	help
Fájlok törlése	del
Mappák törlése	rd
Mappa létrehozása	md
Könyvtár tartalomjegyzékének kilistázása	dir
Állományok csoportos könyvtárszerkezettel együtt történő másolása	хсору
Állomány átnevezése	ren
Állomány mozgatása	move
Attribútumok lekérdezése és beállítása	attrib
Meghajtó mappához rendelése	subst
Mappaváltás	cd
Könyvtárszerkezet megjelenítése	tree
Merevlemez ellenőrzése	chkdsk
Ellenőrzés legközelebbi rendszerindításkor	chkntfs
Időzített feladatvégrehajtás	at
Szöveges állomány tartalmának megjelenítése	type
Konzol törlése	cls
Oldalakra tördelt megjelenítés	more

#### 1.2. Rendszergazdai jogosultságú felhasználó számára elérhető parancsok

Rendszergazdai parancsablak nyitása. Első lehetőség:



Második lehetőség:



#### Jobb egérgombbal jelöljük ki a Command Prompt-ot.



#### Mindkét esetben megjelenik a biztonsági kérdés.



Statikus IP cím beállítása

netsh interface ip set address name="Ethernet" source=static addr=192.168.15.2 mask=255.255.255.0 gateway=192.168.15.254 gwmetric=1

Statikusan megadott DNS szerver beállítása netsh interface ip add dnsservers name="Ethernet" 192.168.15.254



Törlés netsh interface ip delete dnsservers name="Ethernet" all

Konfiguráció fogadása DHCP-vel netsh interface ip set dns "Ethernet" dhcp

Tűzfal kikapcsolása netsh advfirewall set allprofiles state off

Tűzfal bekapcsolása: netsh advfirewall set allprofiles state on

#### Hálózati szolgáltatások leállítása:

A Windows tűzfal szolgáltatás leállítása és elindítása. A tűzfal lehet elindított de kikapcsolt állapotban is (ld. előző pontban). net stop mpssvc net start mpssvc

Néhány olyan szolgáltatás, amin különösebb kockázat nélkül kipróbálhatjuk a leállítást és elindítást. Windows Update – wuauserv Téma – themes Windows audió – audiosrv Nyomtatási várólista – spooler

Felhasználói fiókok létrehozása net user valaki xX12345 /add /fullname:"Valaki Eduard" /homedir: "C:\Users\valaki"

Proxy beállítások átvétele az Internet Explorertől netsh winhttp import proxy ie

Szolgáltatás rendszerindításkor történő indításának letiltása sc config



Window	s Firewall Properties (Local Computer)	×
General Log On	Recovery Dependencies	
Service name:	MpsSvc	
Display name:	Windows Firewall	
Description:	Windows Firewall helps protect your computer by preventing unauthorized users from gaining access	~
Path to executab C:\Windows\syst	le: em32\svchost.exe +k LocalServiceNoNetwork	
Startup type:	Disabled	¥
Service status: <u>S</u> tart You can specify f	Running           Stop         Pause         Resume           he start parameters that apply when you start the service	-
from here.		
start parameters:		
	OK Cancel Apple	у

A z orodmóni	mantakintása	grafilaus	falülatan
Az eredmeny	meglekinlese	grankus	refuteten

Feladat	Parancs
Védett rendszerállományok vizsgálata	sfc /scannow
Számítógép leállítása/újraindítása	shutdown
NTFS engedélyek megjelenítése és módosítása	cacls

#### 1.3. Ajánlott irodalom

- <u>http://commandwindows.com/</u>
- Windows Firewall with Advanced Security Administration with Windows PowerShell: http://technet.microsoft.com/en-us/library/hh831755.aspx

#### 2. Tartomány, DNS, NAT, DHCP (Johanyák Zsolt Csaba)

#### 2.1. Célok

A gyakorlat célja az, hogy hozzunk létre egy **gyakorlat.local** nevű tartományt, befűzzük a Windows 8.1 gépet a tartományba, mindkét gépen beállítsuk a gép nevét, és a DNS kiszolgálón további konfigurációs lépéseket hajtsunk végre, továbbá NAT és DHCP kiszolgálóként konfiguráljuk a gépünket. A DHCP kiszolgáló esetében kipróbáljuk, hogyan tudunk két alhálózatba külön címtartományból címeket kiosztani.

#### 2.2. Előkészítés

A virtuális gépeket az alábbiak szerint állítsuk be. A Windows 8.1 gép egyetlen hálókártyával rendelkezzen, ami a LAN1 szegmenst lássa, és IPv4 címe legyen 192.168.15.2/24, DNS kiszolgáló és alapértelmezett átjáró: 192.168.15.254/24.

¥	Network and Sharing C	Center – 🗆 🗙
🔄 🎯 🔹 🏌 ີ 😨 « Network	and Internet    Network and Sharing Center	✓ ♂ Search Control Panel
Control Panel Home	View your basic network informa	ation and set up connections
Change adapter settings	View your active networks	
Change advanced sharing settings	Unidentified network Public network	Access type: No Internet access Connections: Ethernet
	Change your networking settings	
	Set up a new connection or netw Set up a broadband, dial-up, or V Troubleshoot problems Diagnose and repair network pro	vork /PN connection; or set up a router or access point. oblems, or get troubleshooting information.
See also		
HomeGroup		
Windows Firewall		

Chernet Sta	atus	×	
General			Ethernet Properties
Connection		-	Networking
IPv4 Connectivity:	No Internet access		Connect using:
IPv6 Connectivity:	No Internet access		Intel(R) 82574L Gigabit Network Connection
Media State:	Enabled		
Duration:	00:07:29		<u>C</u> onfigure
Speed:	1.0 Gbps		I his connection uses the following items:
Details			Gos Packet Scheduler     Microsoft Network Adapter Multiplexor Protocol
			Microsoft LLDP Protocol Driver
			Link-Layer Topology Discovery Mapper I/O Driver
Activity		- 11	Ink-Layer Topology Discovery Responder     Ink-Layer Topology Discovery Responder     Ink-Layer Topology Discovery Responder
			Internet Protocol Version 4 (TCP/IPv4)
Sent — 🕌	Received		< >>
			Install Uninstall Properties
Packets: 211	22		Description
			Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication
Properties Disable	Diagnose		across diverse interconnected networks.
	Close	2	OK Cancel
Internet Protocol Version 4 (TC	P/IPv4) Properties	×	
General			
You can get IP settings assigned automatically this capability. Otherwise, you need to ask you for the appropriate IP settings.	if your network supports ur network administrator		
Obtain an IP address automatically			
• Use the following IP address:			
IP address: 192 .	168 . 15 . 2		
Subnet mask: 255 .	255.255.0		
Default gateway: 192 .	. 168 . 15 . 254		
Obtain DNS server address automatically			
• Use the following DNS server addresses:			
Preferred DNS server: 192 .	168 . 15 . 254		
<u>A</u> lternate DNS server:			
Validate settings upon exit	Ad <u>v</u> anced		
[	OK Cancel		

A Windows 2012 gép két hálókártyával rendelkezzen. Az első a NAT-tal kapcsolódjon a külvilág felé. A második a LAN1 szegmenst lássa, és IPv4 címe legyen 192.168.15.254/24. Mindkét interfészen a 127.0.0.1 legyen megadva DNS kiszolgálóként. Az IPv6 protokoll esetén mindkét interfészen állítsuk be úgy, hogy a DNS kiszolgáló címét automatikusan kapja a gép (ne 1:: legyen.)

Indítsuk el a Server Manager-t, és a Local Server-t válasszuk.



#### 2.3. Gép átnevezése

A kiszolgáló nevét Belzebub-ra szeretnénk változtatni.

à		Server Manager
E v Local S	Server	- ©   P
Dashboard	PR For	OPERTIES WIN-PVGAA9C2QTC
Local Server     All Servers     File and Storage Services ▷	Compute Workgro	er name WIN-PVGAA9C2QTC pup WORKGROUP
System Properties	×	Computer Name/Domain Changes
Computer Name Hardware Advanced Remote Windows uses the following information to ide on the network.	ntify your computer	You can change the name and the membership of this computer. Changes might affect access to network resources.
Computer description: For example: "IIS Production : "Accounting Server". Full computer name: WS12-SERVER	Server" or	Computer name:
Workgroup: WORKGROUP To rename this computer or change its domain or workgroup, click Change.	Qhange	Full computer name: Belzebub
		Member of       Domain:
OK Can	el <u>A</u> pply	OK Cancel
Computer Name/Domain Chan	ges	Microsoft Windows
You must restart your compute these changes	er to apply	You must restart your computer to apply these changes
programs.	OK	Before restarting, save any open files and close all programs.           Restart Now         Restart Later

#### Nevezzük át a Windows 8.1 gépet Thor-ra.



A továbbiak már megegyeznek a szerveren alkalmazott lépésekkel.

#### 2.4. Tartomány konfigurálása

Az újraindítást követően telepítjük az AD DS szerepkört a Windows 2012 tartományvezérlővé konfigurálása érdekében. A Server Managerben Add Roles and Features menüpontot választjuk



Select usage Server Roles Reaches Re		Add Roles and Features Wizard	
Sefere You Begin       Sefere You Con an offine virtual hand disk (VHD):         Server Selection       Server Selection         Server Selection       Installation Type         Conformation       Results         Conformation       Results         Conformation       Results         Server Roles       Name         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server or a virtual hard disk on which to install roles and features.         Select destination       Select a server or a virtual hard disk on which to install roles and features.         Select destination       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Server Roles       Select a server from the server paol         Select a server Rool       Select a server serves and newly-add	Select installation	type Destination server Beizebub	
Server Selection         Server Selection         Server Roles         Patteres         Confirmation         Results              Server Selection             Server Selection             Server Selection             Server Selection             Server Roles             Server Roles             Server Roles             Server Roles             Server Roles             Server Roles             Server Roles            Server Roles             Server Roles             Server Roles                Server Roles               Server Roles                           Server Roles <td>Before You Begin</td> <td>Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).</td> <td></td>	Before You Begin	Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).	
Factures       Condimation         Results       Install required role services for Vitual Decktop Infrastructure (VDI) to create a virtual machine-based         Results       Install required role services for Vitual Decktop Infrastructure (VDI) to create a virtual machine-based         Results       Install required role services for Vitual Decktop Infrastructure (VDI) to create a virtual machine-based         Results       Install required role services for Vitual Decktop Infrastructure (VDI) to create a virtual machine-based         Results       Install required role services for Vitual Decktop Infrastructure (VDI) to create a virtual machine-based         Results       Install role services for Vitual Decktop Infrastructure (VDI) to create a virtual machine-based         Select destination Server       Install role services for Vitual Decktop Infrastructure (VDI) to create a virtual machine-based         Before You Begin Installation Type       Select a server or a virtual hard disk on which to install roles and features.         Select a server from the server pool       Select a server from the server pool         Select a server from the server pool       Select a server from the server pool         Select a server from the server pool       Select a server from the server pool         Select a server from the server pool       Select a server from the server pool         Select a server from the server pool       Select a server from the server pool         Select a server from the server p	Server Selection	Role-based or feature-based installation Configure a single server by adding roles, role services, and features.	
Add Roles and Features Wizard      Add Roles and Features Wizard      Add Roles and Features Wizard      Construction server      Select a server or a virtual hard disk on which to install roles and features.      Select a server or a virtual hard disk on which to install roles and features.      Select a server from the server pool      Select a server from the server pool      Select a virtual hard disk      Server Selection      Server Pool      Fitter:      Name      IP Address      Operating System      Relabb      1923168115254      Microsoft Windows Server 2012 R2 Standard Evaluat      Computer(s) found      This page shows servers that are running Windows Server 2012 R2 Standard Evaluat      Collection is still incomplete are not show.      Server Manager, Offline servers and newly-added servers from which data     collection is still incomplete are not show.      Server Namager, Offline servers and newly-added servers from which data     collection is still incomplete are not show.		<ul> <li>Remote Desktop Services installation         Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based         or session-based desktop deployment.     </li> </ul>	
Add Roles and Features Wizard      Add Roles and Features Wizard      Add Roles and Features Wizard      Cance      Select destination server     Before You Begin Installation Type      Server Selection     Select a server or a virtual hard disk on which to install roles and features.     Server Roles     Features     Confirmation     Results      Server Role      Features     Confirmation     Results      Server Pool      Fitter:     IP Address     Operating System      Results      Computer(s) found      This page shows servers that are running Windows Server 2012 R2 Standard Evaluat     collection is still incomplete are not show.      Server Sole			
<pre></pre>			
Add Roles and Features Wizard   DESTINATION SERVE   Select destination server   Before You Begin   Installation Type   Server Selection   Server Roles   Peatures   Confirmation   Results   Server Pool   Filter:   Name   IP Address   Operating System   Releabub   1 Computer(s) found   This page shows servers that are running Windows Server 2012, and that have been added by using the deserver Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.		< Previous Install Cancel	
Add Roles and Features Wizard   Content Destination server   Before You Begin Select a server or a virtual hard disk on which to install roles and features.   Installation Type Select a server from the server pool   Server Selection Select a virtual hard disk   Server Roles Server Pool   Features Filter:   Name IP Address   Operating System   Belzebub 192.168.15.254   Microsoft Windows Server 2012 R2 Standard Evaluat   K III   1 Computer(s) found   This page shows servers that are running Windows Server 2012, and that have been added by using the Address collection is still incomplete are not shown.			
Select destination server       Destination server Belever         Before You Begin       Installation Type         Server Selection       Select a server from the server pool         Server Roles       Select a virtual hard disk         Peatures       Select a virtual hard disk         Confirmation       Results         Server Pool       Filter:         Name       IP Address         Operating System       Relzebub         1 Computer(s) found       This page shows servers that are running Windows Server 2012, and that have been added by using thad Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.	2	Add Roles and Features Wizard	. 🗆
Before You Begin       Installation Type         Server Selection       Select a server from the server pool         Server Roles       Select a virtual hard disk         Features       Confirmation         Results       Select a virtual hard disk         Server Pool       Filter:         Name       IP Address         Operating System       Belzebub         12.168.15.254       Microsoft Windows Server 2012 R2 Standard Evaluation of the server server and newly-added servers from which data collection is still incomplete are not shown.	Select destination	DN Server destination	ON SERVER Belzebub
Installation Type Server Selection Server Roles Features Confirmation Results Server Pool Filter: Name IP Address Operating System Belzebub 192.168.15.254, Microsoft Windows Server 2012 R2 Standard Evaluat	Before You Begin	Select a server or a virtual hard disk on which to install roles and features.	
Server Selection       Select a virtual hard disk         Server Roles       Features         Confirmation       Filter:         Name       IP Address         Operating System         Belzebub       192.168.15.254         Microsoft Windows Server 2012 R2 Standard Evaluation          1         Computer(s) found         This page shows servers that are running Windows Server 2012, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.	Installation Type	Select a server from the server pool	
Features       Confirmation         Results       Filter:         Name       IP Address         Operating System         Betzebub       192.168.15.254         Microsoft Windows Server 2012 R2 Standard Evaluation         <	Server Selection Server Roles	Select a virtual hard disk Server Pool	
Confirmation Results Name IP Address Operating System Betzebub 192.168.15.254 Microsoft Windows Server 2012 R2 Standard Evaluat ( III 1 Computer(s) found This page shows servers that are running Windows Server 2012, and that have been added by using t Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.	Features		
Belzebub       192.168.15.254       Microsoft Windows Server 2012 R2 Standard Evaluat         <		Filter	
< IIII I Computer(s) found This page shows servers that are running Windows Server 2012, and that have been added by using t Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.		Filter: Name IP Address Operating System	
✓ III 1 Computer(s) found This page shows servers that are running Windows Server 2012, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown. ✓ Previous Next > Install Cancel		Filter:	d Evaluation
Computer(s) found     This page shows servers that are running Windows Server 2012, and that have been added by using t     Add Servers command in Server Manager. Offline servers and newly-added servers from which data     collection is still incomplete are not shown.        < Previous		Filter:	l Evaluation
This page shows servers that are running Windows Server 2012, and that have been added by using t Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.		Filter:	d Evaluation
< Previous Next > Install Cancel		Filter:       Name     IP Address     Operating System       Belzebub     192.168.15.254     Microsoft Windows Server 2012 R2 Standard        Image: Computer (a) Found	Evaluation
		Filter:       IP Address       Operating System         Belzebub       192.168.15.254       Microsoft Windows Server 2012 R2 Standard         c       III         1 Computer(s) found       This page shows servers that are running Windows Server 2012, and that have been added b         Add Servers command in Server Manager. Offline servers and newly-added servers from whit collection is still incomplete are not shown.	I Evaluation

Kiválasztjuk az Active Directory Domain Services-t

elect server ro	bles	Belzebub
Before You Begin	Select one or more roles to install on the selected serve	Add Roles and Features Wizard
	Roles	Add features that are required for Active Directory
Server Selection	Active Directory Certificate Services	Domain Services?
Features	Active Directory Domain Services     Active Directory Federation Services	You cannot install Active Directory Domain Services unless the following role services or features are also installed.
	Active Directory Lightweight Directory Services Active Directory Rights Management Services Application Server DNS Server Fax Server Fax Server File and Storage Services (1 of 12 installed) Hyper-V	[Tools] Group Policy Management Remote Server Administration Tools A Role Administration Tools A DD S and AD LDS Tools Active Directory module for Windows PowerShell A DD S Tools [Tools] Active Directory Administrative Center
	Network Policy and Access Services     Print and Document Services     Remote Access     Remote Desktop Services	[Tools] AD DS Snap-Ins and Command-Line Tool

A Select Features lapon a Group Policy Management automatikusan kiválasztásra kerül.

<b>b</b>	Add Roles and Features Wizard	_ <b>D</b> X
Select server roles	Select one or more roles to install on the selected server.	DESTINATION SERVER Belzebub
Installation Type	Roles	Description
Server Selection	Active Directory Certificate Services      Active Directory Domain Services	Active Directory Domain Services (AD DS) stores information about objects on the network and makes
AD DS	Active Directory Federation Services  Active Directory Lightweight Directory Services  Active Directory Lightweight Directory Services	this information available to users and network administrators. AD DS uses domain controllers to give
Confirmation Results	Active Directory Kights Management Services     Application Server     DHCP Server	network users access to permitted resources anywhere on the network through a single logon process.
	<ul> <li>DNS Server</li> <li>Fax Server</li> <li>▶ ■ File and Storage Services (1 of 12 installed)</li> </ul>	
	Hyper-V Network Policy and Access Services Drint and Decument Services	
	Remote Access     Remote Desktop Services	
		Install Cancel

2	Add Roles and Features Wizard	_ <b>D</b> X	
Select features Before You Begin Installation Type Server Selection Server Roles Features AD DS Confirmation Results	Select one or more features to install on the selected server.  Features           INET Framework 3.5 Features         Image: Install on the selected server.         Background Intelligent Transfer Service (BITS)         BitLocker Drive Encryption         BitLocker Drive Encryption         BitLocker Network Unlock         BranchCache         Client for NFS         Data Center Bridging         Direct Play         Enhanced Storage         Failover Clustering         Group Policy Management         IIS Hostable Web Core         Ink and Handwriting Services	DESTINATION SERVER Belzebub Description NET Framework 3.5 combines the power of the .NET Framework 2.0 Apls with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.	
	Add Roles and Features	> Install Cancel	DESTINATION SERVER
ACTIVE DIFECTORY Before You Begin Installation Type Server Selection Server Roles Features AD DS Confirmation Results	<ul> <li>Active Directory Domain Services (AD DS) sto on the network. AD DS helps administrators sharing and collaboration between users. All such as Microsoft Exchange Server and for or Things to note:</li> <li>To help ensure that users can still log on t minimum of two domain controllers for a</li> <li>AD DS requires a DNS server to be installe installed, you will be prompted to install th Installing AD DS will also install the DFS N which are required by AD DS.</li> </ul>	ores information about users, compute securely manage this information and D DS is also required for directory-ena ther Windows Server technologies suc o the network in the case of a server o domain. ed on the network. If you do not have he DNS Server role on this machine. amespaces, DFS Replication, and File f	Belzebub ers, and other devices 4 facilitates resource bled applications th as Group Policy. outage, install a a DNS server Replication services
	< <u>P</u> r	evious <u>N</u> ext > Inst	all Cancel

Engedélyezzük a szükség szerinti automatikus újraindítást, majd Install.

	Add Roles and Features Wizard		
Confirm installa	tion selections Destination server Belizebub		
Before You Begin	To install the following roles, role services, or features on selected server, click Install.		
Installation Type	Restart the destination server automatically if required		
Server Selection	Optional features (such as administration tools) might be displayed on this page because they have		
Server Roles	been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.		
Features			
AD DS	Active Directory Domain Services		
Confirmation	Group Policy Management		
	Rele Admin Add Roles and Features Wizard		
	AD DS A A diftional notifications. Do you want to allow automatic restarts?		
	Yes No		
	Export configuration settings Specify an alternate source path		
	< Previous Next > Install Cancel		





A telepítést követően tartományvezérlővé léptetjük elő a szerverünket.



Egy új erdőt hozunk létre. A tartományunk neve gyakorlat.local lesz.

	Active Directory Domain Services Configuration Wizard	_ <b>D</b> X
Deployment Configuration Deployment Configuration Domain Controller Options Additional Options Paths Review Options Prerequisites Check Installation	Active Directory Domain Services Configuration Wizard iguration Select the deployment operation Add a gomain controller to an existing domain Add a new domain to an existing forest Add a new forest Specify the domain information for this operation Root domain name: gyakorlat.loca	TARGET SERVER Belzebub
Results	More about deployment configurations	Cancel

Mivel csak 2012-es szerverünk és Windows 8.1 kliensünk lesz, ezért úgy az erdő, mint a tartomány működési szintjét Windows Server 2012-re választjuk. A helyreállítási módban alkalmazott jelszavunk is Hallgato-9 legyen.

	Active Directory Domain Services Configuration Wizard	d		x
Domain Controlle	er Options		TARGET SER Belze	VER
Deployment Configuration Domain Controller Options DNS Options Additional Options Paths Review Options Prerequisites Check Installation Results	Select functional level of the new forest and root domain Forest functional level: Domain functional level: Windows Server 2012 F Specify domain controller capabilities Domain Name System (DNS) server Global Catalog (GC) Read only domain controller (RODC) Type the Directory Services Restore Mode (DSRM) password Password:	32 ▼ 32 ▼		
	Confirm password:	Intell	Contra	

L	Active Directory Domain Services Configuration Wizard	_ 🗆 X
DNS Options		TARGET SERVER Belzebub
A delegation for this DNS	server cannot be created because the authoritative parent zone cannot be found	Show more X
Deployment Configuration Domain Controller Options DNS Options Additional Options Paths Review Options Prerequisites Check Installation Results	Specify DNS delegation	
	more about bins delegation	
	< <u>Previous</u> <u>Next &gt;</u> Insta	Cancel

2	Active Directory Domain Services	Configuration Wizard	_ 🗆 🗙
Additional Option	IS		TARGET SERVER Belzebub
Deployment Configuration Domain Controller Options DNS Options	Verify the NetBIOS name assigned to th The NetBIOS domain name:	e domain and change it if necessary GYAKORLAT	
Additional Options Paths Review Options			
Prerequisites Check Installation Results			
	More about additional options		
	< <u>P</u> r	revious <u>N</u> ext > <u>I</u> nstal	Cancel

A tartományunk NetBIOS neve GYAKORLAT lesz.

<b>a</b>	Active Directory Domain Services	Configuration Wizard	_ <b>D</b> ×
Paths			TARGET SERVER Belzebub
Deployment Configuration	Specify the location of the AD DS data	base, log files, and SYSVOL	
DNS Options	Database folder:	C:\Windows\NTDS	
Additional Options	Log files folder:	C:\Windows\NTDS	
Paths	S <u>Y</u> SVOL folder:	C:\Windows\SYSVOL	
Review Options			
Prerequisites Check			
Installation			
Results			
	More about Active Directory paths		
	< <u>P</u>	revious <u>N</u> ext > <u>I</u> n:	tall Cancel

È.	Active Directory Domain Services Configuration Wizard
Review Options	TARGET SERVER Belzebub
Deployment Configuration Domain Controller Options DNS Options Additional Options Paths Review Options Prerequisites Check Installation Results	Review your selections: Configure this server as the first Active Directory domain controller in a new forest. The new domain name is "gyakorlat.local". This is also the name of the new forest. The NetBIOS name of the domain: GYAKORLAT Forest Functional Level: Windows Server 2012 R2 Domain Functional Level: Windows Server 2012 R2 Additional Options: Global catalog: Yes DNS Server: Yes Create DNS Delegation: No These settings can be exported to a Windows PowerShell script to automate additional installations <u>View script</u>
	< <u>P</u> revious <u>Next</u> > <u>Install</u> Cancel



A varázsló ellenőrzi az előfeltételek meglétét. Kapunk néhány figyelmeztetést, majd az Install-t választjuk.

<b>a</b>	Active Directory Domain Services Configuration Wizard
Prerequisites Chee	CK TARGET SERVER Belzebub
All prerequisite checks pass	ed successfully. Click 'Install' to begin installation. Show more
Deployment Configuration Domain Controller Options	Prerequisites need to be validated before Active Directory Domain Services is installed on this computer
DNS Options	Rerun prerequisites check
Additional Options	
Paths	▲ <u>V</u> iew results
Review Options	▲ Windows Server 2012 R2 domain controllers have a default for the security setting
Prerequisites Check	named "Allow cryptography algorithms compatible with Windows N1 4.0" that prevents weaker cryptography algorithms when establishing security channel sessions.
Installation	For more information about this setting, see Knowledge Base article 942564 (http://
	go.microsoft.com/twink? Linkid= 104/31, . ▲ This computer has at least one physical network adapter that does not have static IP address(es) assigned to its IP Properties. If both IPv4 and IPv6 are enabled for a network adapter, both IPv4 and IPv6 static IP addresses should be assigned to both IPv4 and IPv6 Properties of the physical network adapters for reliable Domain Name System v
	A If you click Install, the server automatically reboots at the end of the promotion operation.
	< Previous Next > Install Cancel

Ha lefutott a telepítés, a gép újraindul automatikusan. A bejelentkezést követően a Server Managerben megjelenik a tartomány, és új eszközöket érhetünk el.

la de la companya de		Server Manager
Server Ma	nager • Local Se	erver
Dashboard	PROPERTIES For Belzebub	
Local Server All Servers AD DS DNS	Computer name Domain	Belzebub gyakorlat.local
■File and Storage Services ▷	Windows Firewall Remote management Remote Desktop NIC Teaming Ethernet Ethernet 2	Public: On, Private: On Enabled Disabled Disabled IPv4 address assigned by DHCP, IPv6 enabled 192.168.15.254, IPv6 enabled
	w Helj	



#### 2.5. DNS kiszolgáló konfigurálása

A Server Manager-ben Tools menüben válasszuk a DNS-t. Belzebub-on jobb egérgombbal kattintunk, és a Properties-t választjuk. Csak a LAN1 szegmens számára nyújtunk névfeloldási szolgáltatást.

	BELZEBUB Properties				
Debug Logging Event Logging Monitoring					urity
Interfaces	Forwarders	Adv	ranced	Root Hi	nts
Select the IP addre for DNS queries or limit it to selected I	esses that will serve n all IP addresses de P addresses.	DNS rea	quests. The ser r this computer,	ver can l or you ci	isten an
Listen on:					
○ All IP addresse	s				
Only the following of the following o	ing IP addresses:				
I <u>P</u> address:					
✓ fe80::e57	71:cce4:cf46:3e06				
✓ 192.168.	15.254				
192.168.	80.134				
(	OK Cano	el	Apply	H	elp
ot Hinte fi	ö1				
Jot mints n	ui				
	BELZEBU	B Prop	oerties		?)
Debug Logging	Event Log	ging	Monitoring	9	Security
Interfaces	Forwarders	A	dvanced		
				Roo	t Hints
Root hints resolve server. They are respond.	e queries for zones only used if forwa	that do i rders are	not exist on the not configured	Roo local D lorfailte	t Hints NS o
Root hints resolve server. They are respond. <u>N</u> ame servers:	e queries for zones only used if forwa	that do i rders are	not exist on the not configured	Hoo local D lorfailto	t Hints NS
Root hints resolve server. They are respond. <u>N</u> ame servers: Server Fully Qua	e queries for zones e only used if forwa alified Domain Narr	that do r rders are ne (FQD)	not exist on the not configured	Hoo local D l or fail to dress	NS o
Root hints resolve server. They are respond. <u>N</u> ame servers: <u>Server Fully Qua</u> <u>a root-servers.n</u>	e queries for zones e only used if forwar alified Domain Nam et.	that do i rders are ne (FQD)	not exist on the not configured N) IP Ad [198.4	Hoo local D or fail to dress 41.0.4]	NS
Root hints resolve server. They are respond. <u>N</u> ame servers: Server Fully Qua <u>a root-servers.n</u> b.root-servers.n	e queries for zones e only used if forwar alified Domain Nam et. et.	that do i rders are ne (FQD)	N) IP Ad (198.4 (192.2)	Hoo local D or fail to dress 41.0.4] 228.79.2	NS 0 201]
Root hints resolve server. They are respond. <u>N</u> ame servers: Server Fully Qua <u>a root-servers n</u> b.root-servers n c.root-servers n	e queries for zones only used if forwar alified Domain Nam et. et.	that do r rders are ne (FQD)	not exist on the not configured N) IP Ad (198. (192.) [192.]	Hoo local D l or fail to dress 41.0.4] 228.79.2 33.4.12]	NS 0 (01)
Root hints resolve server. They are respond. <u>Name servers:</u> Server Fully Qua <u>a root-servers n</u> b root-servers n c root-servers n d root-servers n	e queries for zones e only used if forwar alified Domain Nam et. et. et. et.	that do r rders are ne (FQD)	not exist on the not configured N) IP Ad (198. (192.) [192.] [199.]	Hoo local D lor fail to dress 41.0.4] 228.79.2 33.4.12] 7.91.13]	NS 0 (01)
Root hints resolve server. They are respond. <u>Name servers:</u> Server Fully Qua <u>a root-servers n</u> b.root-servers n c.root-servers n d.root-servers n e.root-servers n	e queries for zones e only used if forwa alified Domain Nam et. et. et. et. et.	that do r rders are	not exist on the not configured (198. [192.] [192.] [192.] [192.]	Hoo local D or fail to dress 41.0.4] 228.79.2 33.4.12] 7.91.13] 203.230.	t Hints NS 0 101] ≡ 10]
Root hints resolve server. They are respond. Name servers: Server Fully Qua a root-servers in b root-servers in c root-servers in d root-servers in f root-servers in f root-servers in	e queries for zones e only used if forwa alified Domain Nam et. et. et. et. et. et.	that do r rders are	N) IP Ad (198.) (192.) (192.) (192.) (192.) (192.) (192.) (192.) (192.)	Hoo local D lorfail to dress 41.0.4] 228.79.2 33.4.12] 7.91.13] 203.230. 5.5.241]	t Hints NS 2011 ≡ 101 -
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Forwarders fül.

BELZEBUB Properties					
Debug Logging Interfaces	Debug Logging Event Logging Monitoring Sec Interfaces Forwarders Advanced Root Hi				
Forwarders are DN queries for records	Forwarders are DNS servers that this server can use to resolve DNS queries for records that this server cannot resolve.				
IP Address		Server FQDN			
192.168.80.2		<unable resolution<="" td="" to=""><td>ve&gt;</td></unable>	ve>		
✓ Use root hints if no forwarders are available Edit					
Note: If conditional forwarders are defined for a given domain, they will be used instead of server-level forwarders. To create or view conditional forwarders, navigate to the Conditional Forwarders node in the scope tree.					
C	K Cano	el <u>A</u> pply	/ Help		

Forwarderként a VMware virtuális szervere helyett adjuk meg a két tanszéki névszervert. Ehhez először töröljük a VMware virtuális szerverét, majd megadjuk a két kiszolgáló IPv4 címét.



Tesztelés a Monitoring fülön levő Test Now segítségével.

	BELZEBUB Properties ? X				
Interfaces	Forwarders	Advanced	Root Hints		
To verify the con automatic testing	Debug Logging         Event Logging         Monitoring         Security           To verify the configuration of the server, you can perform manual or automatic testing.         Security         Security				
Select a test type A simple quer A recursive quer	e: y against this DNS se uery to other DNS se	erverj			
To perform the te	st immediately, click natic testing at the fo	Test Now. llowing interval:	Test Now		
T <u>e</u> st interval:	1 minute	es v			
Te <u>s</u> t results:					
Date	Time S	imple Query Recurs	sive Q		
3/5/2014	1:37:39 PM P	ass Pass			
	OK Can	cel <u>A</u> pply	Help		

Nyissunk egy parancsablakot, és indítsuk el az nslookup-ot.



A névfeloldás működik, de a Server: Unknown felirat jelenik meg.

Nézzük meg mindkét hálózati interfésznél a TCP/IPv6 beállításokat, és azt látjuk, hogy mindkettőnél a ::1 statikus beállítás jelent meg. Töröljük ezeket ki, azaz válasszuk az automatikus beállítást.

Internet Protocol Version 6 (TCP/IPv6) Properties	x
General	
You can get IPv6 settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IPv6 settings.	
● <u>O</u> btain an IPv6 address automatically	
O Use the following IPv6 address:	-
IPv6 address:	
Sybnet prefix length:	
Default gateway:	
Obtain DNS server address automatically	
O Use the following DNS server addresses:	-
Preferred DNS server:	
Alternate DNS server:	
Validate settings upon exit Advanced	
OK Can	:el

Nyissunk egy új parancsablakot, majd ismételjük meg a fenti lekérdezéseket.



Nézzük meg a gyakorlat.local zónát.

👗 DNS Manager				
Elle Action View Help Action View Help DNS BELZEBUB	DNS N  Name	Start of Authority (SOA) Name Server (NS) Host (A) Host (A) Host (A)	[26], beizebub.gyakorlat.lo beizebub.gyakorlat.local. 192.168.15.254 192.168.80.134 192.168.80.134	Timestam static static 3/5/2014 1 3/5/2014 1 static
< III >	<	ш		>

Bár a kiszolgáló ismeri a 192.168.15.254-es címet, de a belzebub névhez elsődlegesen a 192.168.80.134 címet tárolta statikusan. Ez az a cím, amit a VMware DHCP kiszolgálója osztott ki a NAT-os elsődleges hálózati interfészünknek. Mivel azon az interfészen nem kívánunk szolgáltatást nyújtani, ezért távolítsuk el a rá vonatkozó bejegyzéseket, és a 192.168.15.254-es címet állítsuk be statikusan a belzebub névhez.

Elle     Action     Yiew     Help       Image: Second S	👗 DNS Manager 📃 🗖 🗙					
Image: Solution of the second seco	File Action View Help					
	<ul> <li>DNS</li> <li>BELZEBUB</li> <li>BELZEBUB</li> <li>Sumsdcs.syakorlat.loc</li> <li>Syakorlat.local</li> <li>Reverse Lookup Zones</li> <li>Trust Points</li> <li>Conditional Forwarders</li> <li>Global Logs</li> </ul>	Name Name Sites Sites Support Source	Type Start of Authority (SOA) Name Server (NS) Host (A) Host (A)	Data [31], belzebub.gyakorlat.lo belzebub.gyakorlat.loc.l 192.168.15.254 192.168.15.254	Timestam static static 3/5/2014 2 static	
	< III >	<	ш		>	

DNS Manager â <u>File Action View Help</u> 🗢 🔿 🙍 📰 🖾 🕰 🖬 🗐 🖬 🛔 DNS Name Туре a 📑 BELZEBUB \_msdcs Forward Lookup Zones 📋 \_sites msdcs.gyakorlat.loc 🚞 \_tcp gyakorlat.local 🚞 \_udp Reverse Lookup Zones 📔 DomainDnsZones Trust Points ForestDnsZones Conditional Forwarders 🗐 (same as parent folder) Start of Authority (SOA) Global Logs (same as parent folder) Name Server (NS) (same as parent folder) Host (A) 📃 belzebub Host (A) Update Server Data File Reload New Host (A or AAAA).. New Alias (CNAME)... х Browse x New Resource Record Alias (CNAME) ¥ 🖄 Look in: 🚊 DNS Alias name (uses parent domain if left blank): Records: www Data Name Type Timestamp Fully qualified domain name (FQDN): BELZEBUE www.gyakorlat.local. Eully qualified domain name (FQDN) for target host: Browse.. Allow any authenticated user to update all DNS records with the same name. This setting applies only to DNS records for a new name. BELZEBUB Selection: Record types: Hosts and Aliases (A and CNAME Records) Ś OK Cancel OK Cancel х New Resource Record Alias (CNAME) Alias name (uses parent domain if left blank): www Fully qualified domain name (FQDN): х Browse www.gyakorlat.local. - 🖄 Look in: 🗊 gyakorlat.local Eully qualified domain name (FQDN) for target host: Records: belzebub.gyakorlat.local Browse... Name Type Data Timestamp ^ \_\_\_\_\_\_sites Allow any authenticated user to update all DNS records with the same name. This setting applies only to DNS records for a new name. DomainDns... ≡ ForestDnsZ... Host (A) 192.168.15... 3/5/2014... same as p... Host (A) 192.168.15... static Selection: belzebub.gyakorlat.local Hosts and Aliases (A and CNAME Records) ¥ Record types: OK Cancel Cancel OK Beállítások kipróbálása a szerveren parancssorban.

Feladat: regisztráljunk be egy álnevet (www.gyakorlat.local) a szerverünkhöz a DNS adatbázisba.



Beállítások kipróbálása a Windows 8.1 gépen parancssorban.



#### 2.5.1. Névkeresési zóna konfigurálása

Az alap DNS konfiguráció csak címkeresési zónát hozott létre. Az IP címből történő DNSnév kikereséshez névkeresési zónára is szükségünk lesz.

🛓 DNS Manager 🔄 🗖 🗙	New Zone Wizard	
File Action View Help		
	Welcome to the New Zone	
Configure a DNS Server     Type     Status     DNS Server     Status	Wizaiu	
Create Default Application Directory Partitions	This wizard helps you create a new zone for your DNS	
New Zone	A zone translates DNS names to related data, such as IP	
Set Aging/Scavenging for All Zones Scavenge Stale Resource Records	addresses or network services.	
Update Server Data Files	To continue, dick Next	
Clear Cache	ro contaile, cick next.	
All Tasks		
Delete		
Refresh		
Properties		
Trep		
	Correl	
Create a new zone.		
New Zone Wizard	New Zone Wizard	
Zone Type	Active Directory Zone Replication Scope	
The DNS server supports various types of zones and storage.	You can select how you want DNS data replicated throughout your network.	
Select the type of zone you want to create:	Select how you want zone data replicated:	
Primary zone:	O To all DNS servers running on domain controllers in this forest: gyakorlat.hu	
Creates a copy of a zone that can be updated directly on this server.		
	To all DNS servers running on domain controllers in this domain: gyakorlat.hu	
O Secondary zone Creates a copy of a zone that exists on another server. This option helps balance	○ To all demain controllers in this demain (for Windows 2000 compatibility), quakeriat by	
the processing load of primary servers and provides fault tolerance.		
○ Stub zone	O To all domain controllers specified in the scope of this directory partition:	
Creates a copy of a zone containing only Name Server (NS), Start of Authority (SOA), and possibly glue Host (A) records. A server containing a stub zone is not		
authoritative for that zone.	✓	
Store the zone in Active Directory (available only if DNS server is a writeable domain		
controller)		
< Back Next > Cancel	< <u>Back</u> <u>Next</u> Cancel	
New Zone Wizard X	New Zone Wizard X	
You can use a zone for forward or reverse lookups.	A reverse Lookup zone Name A reverse lookup zone translates IP addresses into DNS names.	
Colort the type of leakup zone you want to constru	Change whether you want to grante a review lastice and for third address of the f	
Select the type of lookup zone you want to create:	addresses.	
Eorward lookup zone		
A forward lookup zone translates DNS names into IP addresses and provides information about available network services.	IPv <u>4</u> Reverse Lookup Zonej	
	IPv6 Reverse Lookup Zone	
Reverse lookup zone		
A reverse lookup zone translates IP addresses into DNS names.		
< <u>B</u> ack <u>N</u> ext > Cancel	< <u>B</u> ack <u>N</u> ext > Cancel	



Vegyük fel a szervert és a munkaállomást.

					New Resource Record
					Pointer (PTR) Host IP_Address: 192.168.15.254 Eully qualified domain name (FQDN): 254.15.168.192.in-addr.arpa Host name: Browse
Sile Action View Help	DNS N	lanager	[=]	X	Allow any authenticated user to update all DNS records with the same name. This setting applies only to DNS records for a new name.
DNS BELZEBUB BELZEBU	Name	Type Start of Authority (SOA) Name Server (NS) Update Server Data File Reload	Data [1], belzebub.gyakorlat.loc belzebub.gyakorlat.local.	Timestam static static	OK Cancel
		New Pointer (PTR)			
New Resource Record					
----------------------------------------------------------------------------------------------------------------------------------------					
Pointer (PTR)					
Host IP_Address:					
192.168.15.254					
Eully qualified domain name (FQDN):					
254. 15. 168. 192.in-addr.arpa					
Host name:					
belzebub.gyakorlat.local					
Allow any authenticated user to update all DNS records with the same name. This setting applies only to DNS records for a new name.					
OK Cancel					

Beállítások kipróbálása a szerveren parancssorban.



Beállítások kipróbálása a kliensen parancssorban.



# 2.6. A Windows 8.1 kliens gép befűzése tartományba

Fűzzük be a gépet a tartományba. Control Panel – System – Change settings – Change.

Computer Name/Domain Changes	
You can change the name and the membership of this computer. Changes might affect access to network resources.	
<u>C</u> omputer name:	Windows Security ×
Thor Full computer name: Thor	Computer Name/Domain Changes Enter the name and password of an account with permission to join the domain.
Member of Domain: gyakorlat.local Workgroup: WORKGROUP	Administrator  Administrator  Domain: gyakorlat.local
OK Cancel	OK Cancel

A tartományi rendszergazda fiók azonosítójával és jelszavával tudjuk befűzni a gépet a tartományba.

Computer Name/Domain Changes	Computer Name/Domain Changes
Welcome to the gyakorlat.local domain.	<ul> <li>You must restart your computer to apply these changes</li> <li>Before restarting, save any open files and close all programs.</li> </ul>
ОК	ОК

A tartományhoz csatlakozáshoz újra kell indítanunk a Windows 8.1 gépet.

## 2.7. NAT kiszolgáló konfigurálása

Célunk az, hogy a RRAS-t (Routing and Remote Access Service) használjunk IP forgalom továbbítására és NAT szolgáltatás megvalósítására.

Dashboard – Add Roles and Features

Role-based or feature-based installation

<u> </u>	Add Roles and Features Wizard	_ <b>_</b> ×
Select server roles	;	DESTINATION SERVER Belzebub.gyskorlat.local
Before You Begin	Select one or more roles to install on the selected server.	
Installation Type	Roles	Description
Server Selection Server Roles Features Remote Access Role Services Confirmation Results	Application Server         DHCP Server         DNS Server (Installed)         Fax Server         ■ File and Storage Services (2 of 12 installed)         Hyper-V         Network Policy and Access Services         Print and Document Services         ✓ Remote Access         Remote Desktop Services         Volume Activation Services         Web Server (IIS)         Windows Deployment Services         Windows Server Essentials Experience         Windows Server Update Services	<ul> <li>Remote Access provides seamless connectivity through DirectAccess, VPN, and Web Application Proxy. DirectAccess provides an Always On and Always Managed experience. RAS provides traditional VPN services, including site-to-site (branch-office or cloud-based) connectivity. Web Application Proxy enables the publishing of selected HTTP- and HTTPS-based applications from your corporate network to client devices outside of the corporate network. Routing provides traditional routing capabilities, including NAT and other connectivity options. RAS and Routing can be deployed in single-tenant or multi-tenant mode.</li> </ul>
	< <u>P</u> revious	lext > Install Cancel
 Ъ	Add Roles and Features Wizard	_ <b>D</b> X
Select features		DESTINATION SERVER Belzebub.gyakoriat.local
Before You Begin	Select one or more features to install on the selected server.	
Installation Type		
Server Selection	Features	Description
Server Roles Features Remote Access Role Services Confirmation Results	INET Framework 3.5 Features         Image: State St	Description NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.
Server Roles Features Remote Access Role Services Confirmation Results	INET Framework 3.5 Features         Image: Seature state	Description NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes. xt > Install Cancel

2	Add Roles and Features Wizard	_ <b>D</b> X
Remote Access		DESTINATION SERVER Belzebub.gyakorlat.local
Before You Begin Installation Type Server Selection Server Roles Features Remote Access Role Services Confirmation Results	Remote Access integrates DirectAccess, VPN, and Web Application Proxy in a console. Deploy DirectAccess to allow managed domain-joined computers to connect network as DirectAccess clients. Connectivity is seamless and transparent, and client computers are located on the Internet. DirectAccess administrators can ensuring that mobile computers are kept up-to-date with security updates ar requirements. Deploy VPN to allow client computers running operating systems not suppor configured in a workgroup, to remotely access corporate networks over a VPI Deploy Web Application Proxy to publish selected HTTP- and HTTPS-based a corporate network to client devices outside of the corporate network. It can u users are authenticated before they gain access to published applications. We provides proxy functionality for your AD FS servers. Configure RRAS routing features using the Routing and Remote Access conso	single management to the internal corporate d is available any time remotely manage clients, id corporate compliance ted by DirectAccess, or N connection. pplications from your ise AD FS to ensure that eb Application Proxy also ole.
	< Previous Next >	Install Cancel
 ] ]	Add Roles and Features Wizard	
Select role service	25	DESTINATION SERVER Belzebub.gyakorlat.local
Before You Begin Installation Type Server Selection Server Roles Features Remote Access <b>Role Services</b> Web Server Role (IIS) Role Services Confirmation Results	Select the role services       Description         ✓       DirectAccess and VPN (RAS)       Routing         ✓       Routing       RUPP root         ✓       Web Application Proxy       (IGMP Proot	n ovides support for NAT AN Routers running BGP, ulticast capable routers cy).
	< <u>P</u> revious <u>N</u> ext >	Install Cancel





à	Add Roles and Features Wizard	>
Installation progre	5	DESTINATION SERVER Belzebub.gyakorlat.local
	View installation progress	
Before You Begin		
Server Selection	Feature installation	
Server Roles	Configuration required. Installation succeeded on Belzebub.gyakorlat.local	
Features	Remote Access	^
Remote Access	DirectAccess and VPN (RAS)	
Role Services	Configure the role	=
Web Server Role (IIS)	Open the Getting Started Wizard	
	Routing	
	RAS Connection Manager Administration Kit (CMAK)	
Beculta	Remote Server Administration Tools	
Results	Remote Access Management Tools	
	Remote Access GUI and Command-Line Tools	
	Remote Access module for Windows PowerShell	$\checkmark$
	You can close this wizard without interrupting running tasks. View task pr page again by clicking Notifications in the command bar, and then Task [	ogress or open this Details.
	Export configuration settings	
	< Previous Next > CI	ose Cancel
		Gancer
Manage Tools Active Directory Administrative Cent Active Directory Domains and Trusts Active Directory Module for Window Active Directory Sites and Services Active Directory Users and Compute ADSI Edit	/iew owerS	
Component Services		
omputer Management	Routing and Remote Access	_ <b>D</b> X
onnection Manager Administration	File Action View Help	
efragment and Optimize Drives		
NS	Routing and Remote Access     BELZEBUB (local)	
vent Viewer	BELZEBUD # D	Access
roup Policy Management	Configure and Enable Routing and Remote Access	
ternet Information Services (IIS) M	ger All Tasks , bte Acces	stion menu, click
CSI Initiator	View	
ocal Security Policy	Delete	
letwork Policy Server	Refresh	
DBC Data Sources (32-bit)	Properties	
DBC Data Sources (64-bit)	Help	
erformance Monitor		
emote Access Management		
esource Monitor		$\checkmark$
louting and Remote Access	Configures Routing and Remote Access for the selected server	

Routing an	d Remote Access Server Se	etup Wizard
	Welcome to the Routing a Server Setup Wizard	and Remote Access
	This wizard helps you set up your connect to other networks and alle remote clients.	server so that you can ow connections from
	To continue, click Next.	
	< <u>B</u> ack	Next > Cancel
Routing a	nd Remote Access Server	Setup Wizard
Configuration		
You can enable any of customize this server.	the following combinations of servi	ces, or you can
<b>C D</b> · · · · · · · · · · · · · · · · · · ·	1 1/2010	
Allow remote clients	al-up or VPN) to connect to this server through e	ither a dial-up connection or a
<ul> <li>Network address transition</li> </ul>	anslation (NAT)	
Allow internal clients	to connect to the Internet using or	ne public IP address.
C <u>V</u> irtual private netw Allow remote clients	ork (VPN) access and NAT to connect to this server through the time of time of time of the time of time o	he Internet and local clients to
connect to the Inter	net using a single public IP address between two private networks	3.
Connect this networ	k to a remote network, such as a b	oranch office.
C <u>C</u> ustom configuration Select any combination	n tion of the features available in Rou	ting and Remote Access
	< <u>B</u> ack	Next > Cancel
Routing a	nd Remote Access Serve	r Setup Wizard
NAT Internet Connecti	n	
You can select an exis client computers to cor	ting interface or create a new dem inect to the Internet.	and-dial interface for
<ul> <li>Use this public inte Network Interfaces</li> </ul>	face to connect to the Internet: :	
Name	Description	IP Address
Ethemet 2	Intel(R) 82574L Gigabit. Intel(R) 82574L Gigabit.	192.168.80.134 (DHCP) 192.168.15.254
C Create a new <u>d</u> ema A demand-dial inter	ind-dial interface to the Internet face is activated when a client use	es the Internet. Select this
option if this server over Ethemet. The	connects with a modem or by usin Demand-Dial Interface Wizard will	g the Point-to-Point Protocol start at the end of this wizard.
	< Rack	Next > Cancel
	< <u>D</u> dCk	

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:			
	Configured NAT for the following Internet			
	NAT relies on external DNS and DHCP servers. Confirm that these services are configured properly.			
	To enable servers to respond to Internet requests, configure port mappings and update your firewall.			
	To close this wizard, click Finish.			
	< Back Finish Cancel			

# 2.8. Két alhálózatba kapcsolódó szerver DHCP kiszolgálóként

A gyakorlat során két alhálózatot fogunk kialakítani. A DHCP kiszolgáló eltérő címtartományból fog címeket kiosztani a két alhálózatba.

### 2.8.1. Előkészítés

Szerverünket egy harmadik hálózati interfésszel is ellátjuk, ami a LAN2 szegmensre csatlakozik.

Play	er 🕶 🔜 💌 📰				
	File	۲			
() () () () () () () () () () () () () (	Power Removable Devices Send Ctrl+Alt+Del	+	T.LO	CAL] Poli	- Policy
) ()	Full Screen Ctrl+Alt+Enter Unity				题 Enforce password histor 题 Maximum password ag 题 Minimum password aqı
2	Manage	۲		Update VMw	are Tools
	Help	۲		Message Log	]
	Exit		51	Virtual Mach	ine Settings Ctrl+D

	Virtual Ma	chine Settings ×
Hardware Options		
Device	Summary	Memory
Memory Processors Hard Disk (SCSI) CD/DVD (IDE) Floppy Network Adapter VSB Controller Sound Card Printer Display	2 GB 2 100 GB Auto detect Auto detect NAT LAN Segment Present Auto detect Present Auto detect	Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.         Memory for this virtual machine:       2048 → MB         64 GB -       32 GB -         16 GB -       8 GB -         8 GB -       Maximum recommended memory         4 GB -       Maximum recommended memory         4 GB -       Maximum recommended memory         2 GB -       Image: Maximum recommended memory         1 GB -       Image: MB         512 MB -       Secommended memory         256 MB -       2048 MB         128 MB -       Image: Guest OS recommended minimum         32 MB -       1024 MB         16 MB -       SMB -         4 MB -       Changes to the amount of memory will not take effect until the virtual machine is powered off.
	<u>A</u> dd <u>R</u> emove	OK Cancel Help
	Add Hardware Wizard	×
Hardware Type What type of	hardware do you want to install?	
Hardware types:	er evice	ork adapter.
	< <u>B</u> ack	Next > Cancel

	Add Hardware Wizard	×
Network Adapter What type of r	r <b>Type</b> network adapter do you want to ado	?
Network connection Bridged: Connecte Replicate phys NAT: Used to shar Host-only: A privat	d directly to the physical network ical network connection state e the host's IP address te network shared with the host	
Connect at power	on < <u>B</u> ack	-inish Cancel
	Virtual Mac	hine Settings ×
Hardware Options          Device         Image: Memory         Processors         Hard Disk (SCSI)         O CD/DVD (IDE)         Floppy         Network Adapter         Network Adapter         Network Adapter         Network Adapter         Display	Summary 2 GB 2 100 GB Auto detect Auto detect NAT I AN Segment NAT Present Auto detect Present Auto detect Present Auto detect	Device status Connected Connected Connect at power on Network connection Bridged: Connected directly to the physical network Configure Adapters Bridged: Configure Ada
	Add <u>R</u> emove	
		OK Cancel Help

	Global LA	N Segments		×
Global LAN Se	egments:			_
LAN2				
	Add	Bename	Domouro	
	Add	<u>R</u> ename	Cancel	
		UK	Current	
VMnet0			~	
LAN segm	ent:			
LAN1				
LAN2			b	

A könnyű azonosíthatóság érdekében a Network Connections-ben nevezzük át WAN, LAN1 és LAN2-re a három hálózati interfészünket.

Ð	Network Connections
€ ⊜	A 💽 « Network and Internet > Network Connections >
Organize	Disable this network device Diagnose this connection Rename this connection      »
<b>V</b>	WAN gyakorlat.local Intel(R) 82574L Gigabit Network C Ethernet 2 gyakorlat.local Intel(R) 82574L Gigabit Network C Ethernet 3 gyakorlat.local Intel(R) 82574L Gigabit Network C

A 192.168.15.0 hálózatot osszuk két alhálózatra. A hálózati maszk így már 25 bites lesz! Annak érdekében, hogy a lehető legkevesebb módosítás legyen szükséges, a LAN1 szegmens fogja megkapni a felső címtartományt és a LAN2 az alsót. Így a LAN1 (bal oldal) és LAN2 (jobb oldal) interfészek konfigurációja az alábbi lesz.

Internet Protocol Version 4 (TCP/IPv4) Properties	Internet Protocol Version 4 (TCP/IPv4) Properties		
General	General		
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.		
O Obtain an IP address automatically	Obtain an IP address automatically		
• Use the following IP address:	Use the following IP address:		
IP address: 192 . 168 . 15 . 254	IP address: 192 . 168 . 15 . 126		
Subnet mask: 255 . 255 . 255 . 128	Subnet mask: 255 . 255 . 255 . 128		
Default gateway:	Default gateway:		
$\bigcirc$ Obtain DNS server address automatically	Obtain DNS server address automatically		
• Use the following DNS server addresses:	• Use the following DNS server addresses:		
Preferred DNS server: 127 . 0 . 0 . 1	Preferred DNS server: 127 . 0 . 0 . 1		
Alternate DNS server:	Alternate DNS server:		
Validate settings upon exit Ad <u>v</u> anced	Validate settings upon exit		
OK Cancel	OK Cancel		

A DNS kiszolgálón állítsuk be, hogy mindkét alhálózat számára nyújtson névfeloldási szolgáltatást.



#### 2.8.2. DHCP kiszolgáló konfigurálása

Konfiguráljunk egy DHCP kiszolgálót, ami a LAN1 szegmensbe a 192.168.1.129..254 tartományból, míg a LAN2 szegmensbe a 192.168.15.1..126 címtartományból oszt címeket. A 250..254 és a 122..126 címtartományokat zárjuk ki a dinamikus címkiosztásból. A kiadott átjárócím és a DNS kiszolgáló cím mindig egyezzen meg azzal a címmel, amivel a szerverünk az adott szegmensbe csatlakozik.

A Server Managerben Dashboard, majd Add Roles and Features, Next, Role-based or feature based installation, Next, Next, DHCP Server

es		DESTINATION SERVER Belzebub.gyakorlat.local			
		🗕 🔁 Add Roles and Features Wizard	:		
	Select one or more roles to install on the selected server.		٦		
	Roles	Add features that are required for DHCP Server?			
	<ul> <li>Active Directory Certificate Services</li> <li>Active Directory Domain Services (Installed)</li> <li>Active Directory Federation Services</li> <li>Active Directory Lightweight Directory Services</li> <li>Active Directory Rights Management Services</li> <li>Application Server</li> <li>DHCP Server</li> <li>DNS Server (Installed)</li> <li>Fax Server</li> </ul>	The following tools are required to manage this feature, but do not have to be installed on the same server.			
	File and Storage Services (2 of 12 installed)      Hyper-V      Network Policy and Access Services      Print and Document Services	✓ Include management tools (if applicable)			
	Remote Access (2 of 3 installed)     Remote Desktop Services	Add Features Cancel			

Next, Next, Next, Install, Close A telepítést követően

	n a chuir a ch		DHCP Post-Install configuration wizard	
		Description		
		Description Authorization	The following steps will be performed to complete the configuratic target computer:	on of the DHCP Server on the
Server Manager • (3)	<b> </b>		Create the following security groups for delegation of DHCP Serve - DHCP Administrators - DHCP Users Authorize DHCP server on target computer (if domain joined).	r Administration.
Post-deployment Configuration     Configuration required for DHCP Server at B     Complete DHCP configuration	ELZEBUB			
Online - Performanc			< <u>P</u> revious <u>N</u> ext >	Commit Cancel
L DHCP Post-Install configuration wizard	_ 🗆 🗙	2	DHCP Post-Install configuration wizard	_ 🗆 X
Authorization         Authorization         Summary         Use the following user's credentials         User Name:         O Use alternate credentials         User Name:         Statemate         Skip AD authorization		Summary Description Authorization Summary	The status of the post install configuration steps are indicated bel Creating security groups Done Plass retart the DHCP server service on the target computer f effective. Authorizing DHCP server Failed The authorization of DHCP server failed with Error Code. 20079. already present in the directory service. If the DHCP server is not authorized by AD DS, it cannot respon	ow: for the security groups to be . The specified servers are wit to DHCP requests.
< Previous Next > Commit	Cancel		< <u>P</u> revious <u>N</u> ext >	Close

• 🕝   📕 Manage Tools V	/iew H				
Active Directory Administrative Center					
Active Directory Domains and Trusts					
Active Directory Module for Windows Po	owerShell				
Active Directory Sites and Services					
Active Directory Users and Computers					
ADSI Edit					
Component Services					
Computer Management					
Connection Manager Administration Kit					
Defragment and Optimize Drives					
DHCP					
Player 🔻 🔛 🖛 🚍					
쁖.					
File Action View Help					
🔮 DHCP	Con				
	<b>E</b>				
Display Statistics					
New Scope      New Multicast Scope					
	Configure Failover				
Replicate Failover Scopes					
Define User Classes					
Define Vendor Classes					
Reconcile All Scopes					
Set Predefined Options					
Predefined Options and Va	alues ? X				
Option class: DHCP Standard Options	-				
Option name: 015 DNS Domain Name	-				
Add Edit	Delete				
Description: DNS Domain name for clien	t resolutions				
- Value					
String					
gyakorlat.local					
ОК	Cancel				

Hozzuk létre a LAN1 szegmenshez tartozó hatókört.

<b>9</b>	
File Action View Help	
🗢 🔿 🙍 🗊 🖾 🕼	
🦞 DHCP	
belzebub.gyakorlat.local	
⊿ IP Display Statistics	
New Second	
New Scope	
New Scope Wizard	New Scope Wizard
Welcome to the New Scope Wizard	You have to provide an identifying scope name. You also have the option of providing a description.
This wizard helps you set up a scope for distributing IP addresses to computers on your network.	Type a name and description for this scope. This information helps you quickly identify
To continue, click Next.	how the scope is to be used on your network. Name: LAN1
	Description:
< Back Next > Cancel	< <u>B</u> ack <u>Next</u> Cancel
New Scope Wizard	New Scope Wizard
IP Address Range You define the scope address range by identifying a set of consecutive IP addresses.	Add Exclusions and Delay Exclusions are addresses or a range of addresses that are not distributed by the server. A delay is the time duration by which the server will delay the transmission of a DHCPOFFER message.
Configuration settings for DHCP Server	Type the IP address range that you want to exclude. If you want to exclude a single address, type an address in Start IP address only.
Enter the range of addresses that the scope distributes. Start IP address: 192.168.15.129	Start IP address: End IP address:
End IP address: 192 . 168 . 15 . 254	Excluded address range:
Configuration settings that propagate to DHCP Client	Remoye
Length: 25÷	Subnet delay in milli second:
Subnet mask: 255 . 255 . 128	
< <u>B</u> ack <u>N</u> ext > Cancel	<back next=""> Cancel</back>
New Scope Wizard	New Scope Wizard
The lease duration specifies how long a client can use an IP address from this scope.	You have to configure the most common DHCP options before clients can use the scope.
Lease durations should typically be equal to the average time the computer is connected to the same physical naturals. For mobile naturals that consist match of	When clients obtain an address, they are given DHCP options such as the IP addresses of muters (default national) DNS services and WINS estimate for that
portable computers or dial-up clients, shorter lease durations and build unlike the useful. Likewise, for a stable network that consists mainly of desktop computers at fixed	scope. The settings you select here are for this scone and override settings configured in the
souduoris, roriger rease ourarions are more appropriate.	Server Options folder for this server. Do you want to configure the DHCP ontions for this scope now?
Limited to:	Yes, I want to configure these options now
Days: Hours: Minutes:	C No. I will configure these options later
< <u>B</u> ack <u>Next</u> Cancel	< <u>B</u> ack <u>N</u> ext > Cancel

New Scope Wizard	New Scope Wizard
Router (Default Gateway) You can specify the routers, or default gateways, to be distributed by this scope.	Domain Name and DNS Servers The Domain Name System (DNS) maps and translates domain names used by clients on your network.
To add an IP address for a router used by clients, enter the address below.	You can specify the parent domain you want the client computers on your network to use for DNS name resolution.
IP address: 192 . 168 . 15 . 254 Add	Parent domain: gyakorlat.local
<u>R</u> emove	To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers.
<u>Шр</u>	Server name: IP address:
Down	Resolution 192 168 15 126 Permanen
	D <u>o</u> wn
< <u>B</u> ack <u>N</u> ext > Cancel	< <u>B</u> ack <u>N</u> ext > Cancel
New Scope Wizard	New Scope Wizard
Domain Name and DNS Servers The Domain Name System (DNS) maps and translates domain names used by clients on your network.	WINS Servers Computers running Windows can use WINS servers to convert NetBIOS computer names to IP addresses.
You can specify the parent domain you want the client computers on your network to use for DNS name resolution.	Entering server IP addresses here enables Windows clients to query WINS before they use broadcasts to register and resolve NetBIOS names.
Parent domain: gyakorlat.local	Server name: IP address:
To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers.	Resolve 192.168.80.2 Remove
Server name: IP address:	
Hesolve Remove	D <u>o</u> wn
	To change this behavior for Windows DHCP clients modify option 046, WINS/NBT Node
Down	Type, in Scope Options.
< <u>B</u> ack <u>N</u> ext > Cancel	< <u>B</u> ack <u>N</u> ext > Cancel
New Scope Wizard	New Scope Wizard
Activate Scope Clients can obtain address leases only if a scope is activated.	Completing the New Scope Wizard
Do you want to activate this scope now?	You have successfully completed the New Scope wizard.
⊙ Yes, I want to activate this scope now	
<ul> <li>vg, i wii activate this scope later</li> </ul>	
	To provide high availability for this scope, configure failower for
	the newly added scope by right clicking on the scope and clicking on configure failover.
	To close this wizard, click Finish.
< <u>B</u> ack <u>N</u> ext > Cancel	< Back Finish Cancel

A fentiekhez hasonló módon hozzuk létre a LAN2 szegmenshez tartozó hatókört.

A konfigurálást követően az IPv4 előtti ikon még mindig piros lefele nyilat mutat, azaz a szolgáltatás még nem működik. Utolsó lépésként a szolgáltatást engedélyeznünk kell a tartományban.

"	
File Action View Help	
🗢 🔿 🙍 🗮 📷 🗙 🗐 🙆 📑 🛽	
🕎 DHCP	Name
⊿ i belzebub.gy=korlat.local	IPv4
Add/Remove Bind	ings
📲 Serve 🛛 Authorize	
▷ Cop Backup	
Polic Restore	
Filter All Tasks	•
▷ 📑 IPv6 View	•

Kattintsunk az eszköztáron a Refresh ikonra. Ezt követően IPv4 előtti ikon már zöld hátterű pipát tartalmaz, azaz működik a szolgáltatás.



Mindkét hatókör esetében meg kell adnunk még az alapértelmezett átjárót. Ehhez jobb egérgomb a fehér területen (Scope Options), majd Configure Options...

12	DHC	.P				
File Action View Help						
🗢 🔿 🙍 🗔 🤷 🚔	⇔ ⇒ 🖄 🖬 @ 🕞 🖉 📷 🖑					
<ul> <li>DHCP</li> <li>belzebub.gyakorlat.local</li> <li>IPv4</li> <li>Scope [192.168.15.0] LAN2</li> <li>Address Pool</li> <li>Address Leases</li> <li>Reservations</li> <li>Scope Options</li> <li>Policies</li> <li>Scope [192.168.15.128] LAN1</li> <li>Address Pool</li> <li>Address Pool</li> <li>Address Pool</li> <li>Address Pool</li> <li>Mathematical Address Pool</li> <li>Address Pool</li> <li>Scope [192.168.15.128] LAN1</li> <li>Address Pool</li> <li>Address Leases</li> <li>Mathematical Address Pool</li> <li>Address Pool</li> <li>Address Leases</li> <li>Mathematical Address Pool</li> <li>Address Leases</li> <li>Mathematical Address Pool</li> <li>Reservations</li> </ul>	Option Name D06 DNS Servers D15 DNS Domain Name D15 DNS Domain Name O44 WINS/NBNS Servers D46 WINS/NBT Node Type Co	Vendor Standard Standard Standard Standard	Value 192.168.15.126 gyakorlat.local 192.168.80.2 0x8			
Cope Options	Fvr	port List				

Sc	ope Options	? X	
General Advanced			
Available Options 002 Time Offset 003 Router 004 Time Server		Description ^ UTC offset i Array of rot Array of time	
< U 005 Name Servers		Array of nam V	
- Data entry		Resolve	
192 . 168 . 15 . 126	A <u>d</u> d		
	<u>R</u> emove		
	Up		
	D <u>o</u> wn		
	ОК	Cancel <u>A</u> pply	

Teszteljük a szolgáltatást, úgy, hogy mindkét szegmensre becsatlakoztatunk egy-egy virtuális gépet, amely DHCP-vel várja a konfigurációt, majd ellenőrizzük le, hogy ténylegesen megkapta-e a konfigurációt.

04.	Administrator: Command Prompt	_	Administrator: Command Prompt = 🗠 📫
	Connection-specific DNS Suffix . :	^	Connection-specific DNS Suffix . :
<b>C</b> : '	\Users\Administrator>ipconfig /all	0	C:\Users\Administrator>ipconfig /all
Wi	ndows IP Configuration		Hindows IP Configuration
	Host Name : Thor Primary Dns Suffix : gyakorlat.local Node Type : Hybrid IP Routing Enabled : No WINS Proxy: Enabled : No DNS Suffix Search List : gyakorlat.local		Host Name : Thor Primary Dns Suffix : gyakorlat.local Node Type : Hybrid IP Routing Enabled : No WINS Proxy Enabled : No DNS Suffix Search List : gyakorlat.local
Et	hernet adapter Ethernet:	E	Ethernet adapter Ethernet:
	Connection-specific DNS Suffix .: gyakorlat.local Description Intel(R) 82574L Gigabit Network Connect	i	Connection-specific DNS Suffix . : gyakorlat.local Description Intel(R) 82574L Gigabit Network Connecti
n	Physical Address.         : 00-0C-29-DD-38-FC           DHCP Enabled.         : Yes           Autoconfiguration Enabled         : Yes           Link-loral IPU6 Address.         : f80::35f7-5f20:b177:4be%3(Preferred)           IPU4 Address.         : f92.168.15.129(Ip-eferred)           Subnet Mask.         : 255.255.258.128           Lease Obtained.         : Friday. March 14.           Lease Obtained.         : Friday. March 14.           Dif2 Jetateway         : 192.168.15.254           Dif2 Verer         : 192.166.15.254           Dif2 Verer         : 192.166.10.25.254           Dif2 Verer         : 192.166.10.25.254           Dif2 Verer         : 192.166.10.25.254	F	Physical Address.         : 00-0C-29-DD-3B-FC           DHCP Enabled. <td: td="" yes<="">           Autoconfiguration Enabled.         : Yes           Link-local PBu6 Address.         : 192 168 15.1(Preferred)           TPV4 Address.         : 192 168 15.1(Preferred)           Subnet Mask         : 255 255 255 255 128           Lease Obtained.         : Friday, March 14, 2014 5:23:36 PM           Lease Expires         : Saturday, March 22, 2014 5:23:36 PM           Default Gateway         : 192, 168.15.126           DHCPV6 CIDEN DUID         : 00-01-00-01-11R-R0-74-88-00-0C-29-DD-3B-F</td:>
	DNS Servers		DNS Servers
Tu	nnel adapter isatap.gyakorlat.local:	, I	funnel adapter isatap.gyakorlat.local:
<		<ul> <li></li></ul>	C > 1

Állítsuk be, hogy a Windows 8.1 gép számára minden alkalommal ugyanazt az IPv4 címet ossza ki a kiszolgáló. Ezt a legegyszerűbben úgy tehetjük meg, hogy megnyitjuk a hatókör Address Leases mappáját. Itt láthatjuk a dinamikusan kiosztott címeket. Válasszuk ki azt a gépet, amelyiknél rögzíteni szeretnénk az IPv4 címet (ez MAC cím alapján történik). Kattintsunk rajta jobb egérgombbal, majd Add to Reservation.

9	DHCP	Client IP Addr	ess Name Lea
⊿	ielzebub.gyakorlat.local IPv4	192.168.15	Add to Filter
	⊿ 🧮 Scope [192.168.15.0] LAN2		Add to Reservation
	<ul> <li>Address Pool</li> <li>Address Leases</li> <li>Reservations</li> </ul>		Delete Refresh
	Cope Options		Help
	a Scope [192.168.15.128] LAN1 Address Pool Address Leases		
	DHCP	< l	
	Lease converted successfully to reservation		
	OK		

A módszer hátránya, hogy nem határozhatjuk meg a kiosztott IPv4 címet, csak rögzítjük az automatikus kiosztás eredményét. Amennyiben egy általunk meghatározott címet szeretnék rendelni egy interfészhez, akkor kattintsunk jobb egérgombbal a Reservations mappán, majd New Reservation...

		Γ	New Reservation		
		Provide information for a reserved client.			
		Reservation name:	Thor		
		I <u>P</u> address:	192 . 168 . 15 . 252		
▲ ■ belzebub.gyakorlat.local		MAC address:	000c29dd3bfc		
▲ Cope [192.168.15.0] LAN2	A rese	Description:			
Address Pool	To ad	Supported types			
Reservations Scope Options	Note:	(• Both			
Policies	For m				
Address Pool					
Image: Construction of the second			Add Qlose		

# 3. Elosztott állományrendszer (DFS) (Johanyák Zsolt Csaba)

A gyakorlat célja az, hogy konfiguráljunk egy elosztott állományrendszert.

### 3.1. Előkészítés

A gyakorlat során Windows\_Server\_2012\_R2\_Alap, Windows\_Server\_2012\_R2\_Tartomanyban és a Windows 8.1\_Alap virtuális gépeket használjuk. Mindhárom virtuális gép kapcsolódjon a LAN1 alhálózatra. A DC 2 GB, a másik két gép 1-1 GB memóriát kapjon. Mindhárom gépnél állítsunk be rögzített IPv4 címet, A DC neve legyen Belzebub, a W8.1 gépé Thor, a második szerveré Ariadne.

Computer Name/Domain Changes	
You can change the name and the membership of this computer. Changes might affect access to network resources.	
Computer name: Ariadne	
Ariadne	Windows Security
More	Computer Name/Domain Changes Enter the name and password of an account with permission to join the domain.
Domain:     gyakorlat.local	Administrator
O <u>W</u> orkgroup: WORKGROUP	Domain: gyakorlat.local
OK Cancel	OK Cancel

A tartományba fűzés nem sikerül, mivel az alap virtuális gép nem telepítéssel, hanem a tartományvezérlőként használt virtuális gép egyszerű lemásolásával lett létrehozva, azaz a két gép SID-je (Security Identifier) azonos.

Computer Name/Domain Changes
The following error occurred attempting to join the domain "gyakorlat.local": The domain join cannot be completed because the SID of the domain you attempted to join was identical to the SID of this machine. This is a symptom of an improperly cloned operating system install. You should run sysprep on this machine in order to generate a new machine SID. Please see http://go.microsoft.com/fwlink/?Linkld=168895 for more information.
ОК

Megoldás: megváltoztatjuk az alap gép SID-jét a sysprep program segítségével. Nyissunk egy rendszergazdai parancsablakot.





Se	ttings		
Countr	ry or region Hun	gary 🗸	
App la	nguage Eng	lish (United States)	
Keyboa	ard layout Hun	garian 🗸	
		Next	ENG HU
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	Please read the license	terms.	
	· Micros	soft Pty Ltd, 1 Epping Road, North Ryde NSW 2113 Australia.	
	<ol> <li>Outside th the softwar the Microso</li> </ol>	<b>e United States, Canada, Europe, Middle East, Africa, and Australia.</b> If you acquired e outside the United States, Canada, Europe, the Middle East, Africa, and Australia, contact oft affiliate serving your country (see <u>www.microsoft.com/worldwide</u> ).	
	G. NO OTHER WAI Microsoft gives	RRANTIES. The limited warranty is the only direct warranty from Microsoft. s no other express warranties, guarantees, or conditions. Where allowed by your	
Ŷ		l accept	ENG HU
E	Setting	JS	
	Type a password for th	e built-in administrator account that you can use to sign in to this computer.	
	User name	Administrator	
	Password	•••••	
	Reenter password	••••••	
Ċ		Finish	ENG HU

A bejelentkezést követően előfordulhat, hogy nem sikerül csatlakoztatni gépünket a tartományhoz.



A második és a harmadik közül az egyik hibás cím. Távolítsuk el a DNS adatbázisból! Lépjünk be a tartományezérlőre, és kérdezzük le az aktuális IPv4 címeket.

Administrator: Command Prompt	_ 🗆 X
Connection-specific DNS Suffix .: Link-local IPv6 Address : fe80::84af:2f4:b6e8:40d4%15 IPv4 Address : 192.168.1.254 Subnet Mask : 255.255.0 Default Gateway :	^
Ethernet adapter NAT:	=
Connection-specific DNS Suffix . : localdomain Link-local IPv6 Address : fe80::c07d:5e26:2ca0:2e17%12 IPv4 Address : 192.168.80.136 Subnet Mask : 255.255.255.0 Default Gateway : 192.168.80.2	
Tunnel adapte <del>r</del> isatap.localdomain:	
Media State Media disconnected Connection-specific DNS Suffix . : localdomain	
Tunnel adapter isatap.{3149ACA6-F29C-4DFE-A771-BDF51C95F52E}:	
Media State Media disconnected Connection-specific DNS Suffix . :	
C:\Windows\system32>	~

Láthatjuk, hogy a 192.168.220.139 volt a hibás cím. Indítsuk el a DNS Manager alkalmazást.

	SZERVER2-DC.gyakorlat.local Properties		
File Action View Help	Debug Logging         Event Logging         Monitoring         Security           Interfaces         Forwarders         Advanced         Root Hints           Forwarders are DNS servers that this server can use to resolve DNS queries for records that this server cannot resolve.         DNS		
DNS SZERVER2-DC Configure a DNS Server Create Default Application Directory Partitions Create Default Application Directory Partitions Set Aging/Scavenging for All Zones Set Aging/Scavenging for All Zones Clear Cache Launch nslookup All Tasks View Delete Refresh Export List	e         privation         IP Address         Server FQDN         192.168.220.2 <attempting resolve="" to="">         ✓         Use root hints if no forwarders are available         Edit         Note: If conditional forwarders are defined for a given domain, they will be used instead of server-level forwarders. To create or view conditional forwarders, navigate to the Conditional Forwarders node in the scope tree.</attempting>		
Properties			

	Edit For	warders	X	ſ	
IP addresses of forwar	ding servers:				
IP Address	Server FQDN	Validated	Delete		
<click add<br="" here="" to="">192.168.220.2</click>	la				
			Down		
Number of seconds bef	fore forward queries time out:	3			
The server FQDN will ne configured.	ot be available if the appropri-	ate reverse lookup zor	nes and entries are not		
		C	OK Cancel		
2					
<u>8</u>					
File Action	View Help				
🗢 🔿 🖄	🖬 🗙 🗐 🖸	1 🗟 🛛			
🚊 DNS				Name	
SZERVE	R2-DC			📄 📔 Forwa	
	DC muskadat	local .			
⊿ 🚞	Configure a Div	15 Server			
⊿	Create Default	Application I	Directory Partitions	i	
	New Zone				
	Set Aging/Scav	enging for A	All Zones		
	Scavenge Stale Resource Records				
	Update Server I	Data Files			
	Clear Cache				

Próbáljuk újra az alap virtuális gépről.



Próbáljunk újra csatlakozni a tartományhoz.



## 3.2. DFS szolgáltatás telepítése és konfigurálása

Server Manager- Dashboard ->Add roles & features -> Role-based or feature-based installation -> belzebub.gyakorlat.local. ->



🚡 🛛 Add Re	oles and Features Wizard	x	
Add features that a The following tools are r have to be installed on t	are required for DFS Namespaces? required to manage this feature, but do not the same server.		
<ul> <li>▲ Remote Server Adn</li> <li>▲ Role Administra</li> <li>▲ File Services</li> <li>[Tools] D</li> </ul>	ninistration Tools tion Tools Tools FS Management Tools		
✓ Include manageme	nt tools (if applicable) Add Features Cancel		
≧ Select server roles	Add Roles and Features Wizard		DESTINATION SERVER
Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	Select one or more roles to install on the selected server.  Roles  DHCP Server  DNS Server (Installed)  Fax Server  Server (Installed)  File And Storage Services (Installed)  File and iSCSI Services (Installed)  File Server Resource Manager File Server VSS Agent Service Server for NEC  Current Server for NEC  Current Server Server Server for NEC  Current Server Server Server Server	<ul> <li>▲ DF rep to ser net Coi Dif prof las be Na</li> </ul>	scription S Replication is a multimaster plication engine that enables you synchronize folders on multiple vers across local or wide area twork (WAN) network nnections. It uses the Remote fiferential Compression (RDC) plocol to update only the portions files that have changed since the t replication. DFS Replication can used in conjunction with DFS imespaces, or by itself.
	< <u>P</u> revious	<u>N</u> ext >	Install Cancel

<b>a</b>	Add Roles and Features Wizard	_		x
Confirm installation	on selections Szerver-1	NATION .GYAKO	I SERV	'ER HU
Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	To install the following roles, role services, or features on selected server, click Install.           Image: Restart the destination server automatically if required           Optional features (such as administration tools) might be displayed on this page because been selected automatically. If you do not want to install these optional features, click Pr their check boxes.           File And Storage Services         File and iSCSI Services           DFS Namespaces         DFS Replication           Remote Server Administration Tools         Role Administration Tools           File Services Tools         DFS Management Tools	t they levious	have to cle	zar
	Export configuration settings Specify an alternate source path           < Previous		Cancel	
è	Add Roles and Features Wizard	x		
Installation progress Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	S DESTINATION SERVE Szerver-1.GYAKORLAT.H View installation Feature installation Installation started on Szerver-1.GYAKORLAT.HU File And Storage Services File and iSCSI Services DFS Namespaces DFS Namespaces DFS Replication Remote Server Administration Tools Role Administration Tools File Services Tools DFS Management Tools File Services Tools DFS Management Tools You can close this wizard without interrupting running tasks. View task progress or open this page again by clicking Notifications in the command bar, and then Task Details. Export configuration settings	RJ		
	< <u>P</u> revious <u>N</u> ext > Close Cancel			



Tools	View Help			
	Active Directory Administrative Center			
	Active Directory Domains and Trusts			
	Active Directory Module for Windows PowerShell			
	Active Directory Sites and Services			
	Active Directory Users and Computers			
8	ADSI Edit			
	Component Services			
	Computer Management			
	Defragment and Optimize Drives			
	DFS Management			
	DNS			
	Event Viewer			
	C DE M			

Sector DFS Management	_ 🗆 X
Cile Action View Window Help	_ 8 ×
DFS Management DFS Management	Actions
Replication Getting Started	DFS Management 🔺
Use this snap-in to create and manage Distributed File System (DFS) namespaces and replication groups.	New Namespace
	New Replication Group
DFS Management Tasks	Add Namespaces to Di
Dublich Data to Multiple Servers	View
Create a namespace to make shared folders located on multiple servers appear as a single tree of folders. To	New Window from Here
increase redundancy of the folders or make them available to users in remote locations, use DFS Replication to keep the content synchronized on multiple servers.	P Help
Collect Data for Backup Purposes	<b>-</b> .
Use DFS Replication to replicate data from a server in a branch office to a server in a hub office or data center	
for backup purposes. You can optionally publish the content in a namespace to ensure that branch clients always connect to the branch server or fail over to a hub server if the branch server is unavailable.	
Manage Namespaces and Replication Groups	
Manage existing namespaces and replication groups by adding them to the console display.	



<u>6</u>	New Namespace Wizard	_ <b>D</b> X
Namespace Se	erver	
Steps:	Enter the name of the server that will host the namespace. The server you specify	
Namespace Server	will be known as the namespace server.	
Namespace Name and Settings	<u>S</u> erver:	
Namespace Type	<u>B</u> rowse	
Review Settings and Create Namespace		
Confirmation		
	< Previous Next >	Cancel

Select Computer	x
<u>S</u> elect this object type:	
Computer	Object Types
From this location:	
gyakorlat.local	Locations
Enter the object name to select ( <u>examples</u> ):	
BELZEBUB	Check Names
Advanced OK	Cancel

# 3.2. DFS szolgáltatás telepítése és konfigurálása

<b>6</b>	New Namespace Wizard	<b>a</b>	New Namespace Wizard	_ 🗆 X
Namespace S	erver	Namespace N	lame and Settings	
Steps: Namespace Server Namespace Name and Settings	Enter the name of the server that will host the namespace. The server you specify will be known as the namespace server. Server: belicebub Browse	Steps: Namespace Server Namespace Name and Settings	Enter a name for the namespace. This name will appear after the server or domain name in the namespace path, such as \\Server\Name or \\Domain\Name. Name:	
Review Settings and Create Namespace Confirmation		Namespace Type Review Settings and Create Namespace Confirmation	Impupue Example: Public If necessary, the witzerd will create a shared folder on the namespace server. To modify the settings of the shared folder, such as its local path and permissions, click Edit Settings.	
			Est Settings	
	< Brevious Next > Cancel		< Previous Next	Cancel
	Edit Settings			
Namespace ser	iver:			
Shared folder:				
mappak				
Local path of st	nared folder:			
C:\DFSRoots\r	nappak Browse			
Shared folder p	<u>e</u> missions:			
◯ <u>A</u> ll users	have read-only permissions			
O All users	have read and write permissions			
⊖ A <u>d</u> minist permissi	rators have full access; other users have read-only ons			
Administ permission	rators have full access; other users have read and write ons			
⊖ <u>U</u> se cus	tom permissions: Customize			
	OK Cancel			
8 #	New Namespace Wizard	Salar	New Namespace Wizard	_ <b>_</b> ×
Namespace Ty	/pe	Review Settin	gs and Create Namespace	
Steps: Namespace Server	Select the type of namespace to create.	Steps: Namespace Server	You selected the following settings for the new namespace. If the settings are correct, click Create to create your new namespace. To change a setting, click pervious or select the anomality angue in the standard lice area.	
Namespace Name and Settings	Domain-based namespace     A domain-based namespace is stored on one or more namespace servers and in Active Directory     Domain-based namespace by using	Namespace Name and Settings	Namespace settings:	
Namespace Type Review Settings and Create Namespace	multiple servers. When created in Windows Server 2008 mode, the namespace supports increased scalability and access-based enumeration.	Namespace Type Review Settings and Create Namespace	Namespace Namespace name: \\gyakorlat.local\mappak Namespace type: Domain (Windows 2000 Server mode) Namespace server.bet/shuh	



4	New Namespace Wi	izard	_ 🗆 X
Confirmation			
Steps: Namespace Server Namespace Name and Settings Namespace Type	You have successfully completed the Ne	ew Namespace Wizard.	
Review Settings and Create	Task	Status	
Namespace	Create namespace.	Success	
Continuation			Cose
			Glose

# 3.3. Megosztások létrehozása és elhelyezése egy DFS névtérben

Elsőként a Belzebub gépen majd az Ariadne gépen hozunk létre egy-egy megosztást. Mindkét megosztást beillesztjük a tartományi DFS névtérbe (mappak).

💁 DFS Management 💶	
🐴 <u>F</u> ile <u>A</u> ction <u>V</u> iew <u>W</u> indow <u>H</u> elp	_ <i>6</i> ×
Superior Content Service Conte	s 2000 Server mode) Actions
A Samespaces	\\gyakorlat.local\mappak
▶ 🥸 Replication 0 entries	👫 New Folder
Type Name	Add Namespace Server
	Delegate Management Permissions
	Remove Namespace from Display
	View 🕨
	New Window from Here
	🔀 Delete
	C Refresh
	Properties
	Heln
New Folder	
News	
Name:	
szortver	
Preview of namespace:	
\\gyakorlat.local\mappak\szoftver	
Folder targets:	
	Add Folder Target
	Path to folder target:
Add Edit Remove	Earrie folder talget.
	Example: \\Server\Shared Folder\Folder
OK Cancel	OK Cancel
H.	

	Create Share
Browse for Shared Folders  Shared Folders Shared Folders Shared folders	Create Share       Server name:       BELZEBUB       Share name:       szoftver       Local path of shared folder:       Brgwse   Shared folder permissions:     Only users have read-only permissions
New Shared Folder OK Cancel	<ul> <li>All users have read and write permissions</li> <li>Administrators have full access; other users have read-only permissions</li> <li>Administrators have full access; other users have read and write permissions</li> <li>Use custom permissions: Customize</li> </ul>

	Create Share X
Browse For Folder	Server name: BELZEBUB
Select a folder	Snare name:  szoftver  Local path of shared folder:  DS500 at Jacon of the start of
BELZEBUB   c\$   DFSRoots   mappak   szoftver   PerfLogs   Program Files   Program Files (x86)   Users	c:\DFSRoots\mappak\szoftver       Browse         Shared folder permissions:       All users have read-only permissions         All users have read and write permissions       All users have read and write permissions         Administrators have full access; other users have read-only permissions       Administrators have full access; other users have read and write permissions         Administrators have full access; other users have read and write permissions       Administrators have full access; other users have read and write permissions
Eolder: New folder           Make New Folder         OK         Cancel	OK Cancel

Browse for Shared Folders – 🗖 🗙	
Server	
BELZEBUB Browse	
Show Shared Folders	
Shared folders:	
Im Imappak	
	Add Folder Target
	Path to folder target:
	Example: \\Server\Shared Folder\Folder
New Shared Folder OK Cancel	OK Cancel
New Folder 🛛 🗙	
Name:	
szoftver	
Preview of namespace:	
\\gyakorlat.local\mappak\szoftver	
Folder targets:	
\\BELZEBUB\szoftver	
Add Edit <u>R</u> emove	
OK Cancel	
a de la constante de	
Now Folder X	Π
Name:	
review or namespace:	
Folder targets:	
	Add Folder Target 🛛 🗙
	Path to folder target:
Add Edit Remove	Fain to tolder target: Browse
	Example: \\Server\Shared Folder\Folder
OK Cancel	OK Cancel
L	
Browse for Shared Folders 📃 🗖 🗙	
---------------------------------------------	------------------------------------------------------------------------------------------------------
Server: BELZEBUB	
Show Shared Folders	
snared holders. ■ mappak ■ szoftver	
	Select Computer X
	Select this object type:
	Computer Qbject Types
	gyakorlat.local
	Enter the object name to select ( <u>examples</u> ):
	ARIADNE
New Shared Folder OK Cancel	Advanced OK Cancel
	Create Share
Drawna fay Charad Faldam 📃 🗖 🗙	Server name:
	ARIADNE
Server:	Share name:
	Local path of shared folder:
Show Shared Folders	Browse
Sh <u>a</u> red folders:	Shared folder permissions:
No shared folders were found on the server.	
	Ail users have read and <u>write</u> permissions
	Agministrators have full access; other users have read-only permissions
	<ul> <li>Administrators have full access; other users have read and write permissions</li> </ul>
	O Use custom permissions: Customize
New Shared Folder OK Cancel	OK Cancel

Browse For Folder	Browse For Folder
Select a folder	Select a folder
ARIADNE CS PerfLogs Pigram Files Pigram Files (x86) Discuss Windows	ARIADNE  ARIADNE  CS  Kozos_munka  PerfLogs  Program Files  Program Files (x86)  Users  Windows
Eolder: C\$ (\\Ariadne)  Make New Folder OK Cancel	Eolder: New folder Make New Folder OK Cancel
Create Share	
Local path of shared folder:	Browse for Shared Folders – – ×
Shared folder p <u>e</u> missions:	ARIADNE Browse
All users have read-only permissions     All users have read and <u>w</u> rite permissions	Shared folders:
<ul> <li>Administrators have full access; other users have read-only permissions</li> <li>Administrators have full access; other users have read and write permissions</li> <li>Use custom permissions: Customize</li> </ul>	
OK Cancel	New Shared Folder OK Cancel

#### 3.3. Megosztások létrehozása és elhelyezése egy DFS névtérben

	New Folder 🛛 🗙
	Name:         kozos_munka         Preview of namespace:         \\gyakorlat.local\mappak\kozos_munka         Folder targets:         \\ARIADNE\kozos_munka
Add Folder Target	
Path to folder target:          \\ARIADNE\kozos_munka       Browse         Example: \\Server\Shared Folder\Folder	Add Edit <u>R</u> emove
OK Cancel	OK Cancel



STIT FICE USZCUSUK KUZZ		intar ball					
			A	Active Di	rectory	Users	and Computers
	File Action View	w Help					
	🗢 🄿 🔁 📊	i 🧕 🗐	3 🛛	1 🙁 🐮	1	' 🗾 🗿	Ł
CO     Active Directory Administrative Center Active Directory Domains and Trusts Active Directory Module for Windows Pov Active Directory Sites and Services	<ul> <li>Active Directory</li> <li>Active Directory</li> <li>Saved Querie</li> <li>gyakorlat.loc</li> <li>Built</li> <li>Con</li> <li>Don</li> <li>Fore</li> <li>Mar</li> <li>User</li> </ul>	Lusers and Com     S     S     Delegate Cont     Find     Change Doma     Change Doma     Change Doma     Raise domain f     Operations Ma     New     All Tasks     View     Refresh     Export List     Properties	Name Builtin in in Controlle functional I isters	er	ype uiltinDo inei inei inei	Comp Conta Group InetOr MSMC	Description Default container for up Default container for do Default container for se Default container for mi Default container for up uter ct gPerson aging-PSPs Q Queue Alias
Active Directory Users and Computers		Help				Organ	izational Unit
New Object - Organizational         Image:         Megosztások         Image:         Image: <th>al Unit X</th> <th>File Action View File Action View File Active Directory U: Active Directory U: Saved Queries Saved Queries Builtin Bui</th> <th>Help iers and Com N ntrollers urityPrincipal: evice Accour bk</th> <th>Active D</th> <th>elegate Cont Type I a a a a a a Type I Type I Tasks efresh iew rrange lcons ine up lcons roperties lelp</th> <th>rol</th> <th>tion tion Computer Contact Group InetOrgPerson msImaging-PSPs MSMQ Queue Alias Organizational Unit Printer User User Shared Folder</th>	al Unit X	File Action View File Action View File Active Directory U: Active Directory U: Saved Queries Saved Queries Builtin Bui	Help iers and Com N ntrollers urityPrincipal: evice Accour bk	Active D	elegate Cont Type I a a a a a a Type I Type I Tasks efresh iew rrange lcons ine up lcons roperties lelp	rol	tion tion Computer Contact Group InetOrgPerson msImaging-PSPs MSMQ Queue Alias Organizational Unit Printer User User Shared Folder
New Object - Share	d Folder	x		New C	bject - :	Shared F	Folder
Create in: gyakorlat.local/Megosztá Name: Szoftver Ngtwork path (\server\share): \gyakorlat.local\mappak\szoftver	sok		Treat ame: ozos_munka gtwork path (\\ gyakorlat.loca	e in: gyakor server\share): \/mappak\koz	at.local/M	egosztások	

OK Cancel

Cancel

ОК

## 3.4. Megosztások közzététele a címtárban

Activ	e Directory Users and Computers	_ 🗆 X
<u>File Action View H</u> elp		
	] @ 🗟   🛛 🖬 🕇 🧏 📽 🎽 🍸 🖉 🎕	
📃 Active Directory Users and C 🔨	Name Type Description	
Saved Queries	Kozos_munka Shared Folder	
▲       ∰ gyakorlat.local         ▷       Builtin         ▷       Computers         ▷       Domain Controllers         ▷       ForeignSecurityPrinci         ▷       Managed Service Acc         <	Szoftver Shared Folder	

# 3.5. A DFS megosztások elérése a Windows 8.1 gépről

🗣 l 💽 🚹 = l	Network – 🗆 🗙
File Network View	^ <b>(</b> )
Properties Open Connect with Remote Desktop Connection Location Network	rinters levice webpage Active Directory K
	✓ C Search Network $ ho$
<ul> <li>★ Favorites</li> <li>■ Desktop</li> <li>▶ Downloads</li> <li>™ Recent places</li> <li>™ This PC</li> <li>♥ Network</li> </ul>	This folder is empty.
Find Shared Folders –	X Eind Shared Folders - X
Eile Edit View	File Edit View
Find:     Shared Folders     In:     Im:     Im:	Find:     Shared Folders     In:     Imit grave     Browse       Shared Folders     Advanced     Find Now     Stop       Mame:     szoftver     Stop       Keywords:     Qear All
Search results:	Search results:
Name Share Name Keywords           Stare Name         Keywords           Szoftver         \\gyakorlat.local\mappak\szoftver	Name         Share Name         Keywords           Szoftver         Explore         Explore           Find         Map Network Drive

×	(# 1 🕞 🖪 = 1	Th	nis PC	- 🗆 ×
A P Man Naturark Drive	File Computer V	lew		^ 🕜
	🗋 🗋 🏹	1 🖉 🔮 🖉	Uninstall or change a program	
	Properties Open Rename	Access Map network Add a network C media • drive • location	Panel Manage	
What network folder would you like to map?	Location	Network	System	
Specify the drive letter for the connection and the folder that you want to connect to:	€ 🦻 * ↑ 👰 F T	his PC →	V 🖒 Search This PC	م ر
	4 🔆 Favorites	Desktop	Documents	^
<u>D</u> rive: S: ✓	Desktop			
Folder \ \   \                                                                                                                                                                                                                                                                                                                                         \q	Downloads     Recent places	Downloads	Music	
Example: \\server\share	I I This PC	Pictures	Videos	
✓ <u>R</u> econnect at sign-in	Documents	A Devices and drives (4)		
Connect using different credentials	Downloads	Devices and drives (4)		
Connect to a Web site that you can use to store your documents and pictures.	▷ @ G1-19300 ▷ ₩ Music	GT-19300	Floppy Disk Drive (A:)	
	Pictures	Local Disk (C:)	<b>F</b> A	
	Videos	90.4 GB free of 99.6 GB	DVD RW Drive (D:)	
	Signature State	<ul> <li>Network locations (1)</li> </ul>		
	<b>B</b> No.	szoftver (\\gyakorlat.local\m	nappak)	
Finish Cancel	Network	🥰 (S:)	· · · · · · · · · · · · · · · · · · ·	~
	11 items			800 🖬

A fentiekben ismertetett mintát követve csatoljuk fel a kozos\_munka megosztást M: meghajtóként. Ellenőrzésként hozzunk létre állományokat mindkét megosztáson, majd próbáljuk ki tartományi rendszergazda és egyszerű felhasználóként a hozzáférés szabályozást.

## 4. Munka a címtárban (Johanyák Zsolt Csaba)

A gyakorlat célja az, hogy a címtárban grafikus felületen létrehozzunk szervezeti egységet, felhasználói fiókot, felhasználói csoportot. Megosszuk a felhasználói könyvtárakat, és beállítsuk, hogy bejelentkezéskor automatikusan csatolódjon fel S: meghajtóként a felhasználó saját könyvtára. Emellett létrehozunk egy Dokumentumok nevű megosztást, ami minden tartományi felhasználó számára csak olvasható jelleggel elérhető legyen O: meghajtóként, valamint egy Kozos\_Munka nevűt, ami írható-olvasható legyen és M: meghajtóként jelenjen meg minden tartományi felhasználó számára.

#### 4.1. Előkészítés

A gyakorlat során Windows\_Server\_2012\_R2\_Tartomanyban és a Windows 8.1\_Alap virtuális gépeket használjuk. Mindkét virtuális gép kapcsolódjon a LAN1 alhálózatra. A Windows 8.1 gép neve legyen Thor és DHCP-vel fogadja a konfigurációt.



## 4.2. Szervezeti egység, csoport és fiók létrehozása

Hozzuk létre az Informatika Tanszék nevű szervezeti egységet.

	Active Directo	ory Users and Computers
File Action View	Help	
🦛 🔿 🖬 🖬 🗟	2 🖬 % 🐮 👕 🖉 🎘	
Active Directory Use	ers and Com Name Type	Description
<ul> <li>▷ Saved Queries</li> <li>☑ gyakorla</li> <li>▷ ☑ Builti</li> <li>▷ ☑ Com</li> <li>▷ ☑ Dom</li> <li>○ ☑ Dom</li> <li>○ ☑ Forei</li> <li>○ ☑ Mani</li> <li>▷ ☑ Users</li> </ul>	Delegate Control Find Change Domain Change Domain Controller Raise domain functional level Operations Masters	in Folder to store your favo
1	lew 🕨	Computer
A	All Tasks 🕨	Contact
F	lefresh	Group
F	Properties	InetOrgPerson
H	lelp	msImaging-PSPs
		Organizational Unit
New Create in: Name: Informatika Tanszék	gyakorlat.local/	
	OK Cancel	Help

Hozzunk létre egy Hallgatók nevű csoportot a szervezeti egységen belül.

3	A	Active Directory l	Jsers and	d Computers
File Action View Help				
🗢 🏟 🙍 📰 📋 🖾 🖬	3	1 🙎 🐮 🝸	ي کي	
Active Directory Users and Com	Name	Туре	De	escription
<ul> <li>▷ Saved Queries</li> <li>☑ gyakorlat.local</li> <li>▷ □ Builtin</li> <li>▷ □ Computers</li> <li>▷ □ Domain Controllers</li> <li>▷ □ ForeignSecurityPrincipal:</li> <li>▷ □ Managed Service Accour</li> </ul>		Delegate Control Move Find	There are	no items to show in this view.
Users Users Informatika Tanczék		New	•	Computer
		All Tasks	•	Contact
		Refresh		Group
Create in: gyakorlat. Group n <u>a</u> me: Hallgatók Group name (pre- <u>W</u> indows 2000): Hallgatók	ocal/Informa	atika Tanszék		
Group scope Domain local Global Universal	Group ③ Sec ○ Dist	type surity tribution		
		ОК	Cancel	

A fenti mintát követve hozzuk létre az Oktatók nevű csoportot is. Osszuk meg a C:\Users mappát teljes hozzáféréssel az összes tartományi felhasználó számára.

#### 📥 | 💽 🚺 🖛 I Local Disk File Home Share View <u>т</u> ► This PC ► Local Disk (C:) ► (←) Ŧ ٠ Date modified Name Туре 🔆 Favorites Desktop 🃗 PerfLogs 8/22/2013 5:52 PM File folder L Downloads 퉬 Program Files 2/11/2014 9:45 PM File folder 🖳 Recent places Program Files (x86) 8/22/2013 5:39 PM File folder . Upon 2/11/2014 9:35 PM File folder Open 💻 This PC W 2/11/2014 1:44 PM File folder . Open in new window 📬 Network Share with Advanced sharing... ۲ 22 x **Users Properties** General Sharing Security Previous Versions Customize Network File and Folder Sharing Users х Not Shared Advanced Sharing Network Path: ✓ Share this folder Not Shared Share .. Settings Share name: Advanced Sharing Users Set custom permissions, create multiple shares, and set other advanced sharing options. <u>A</u>dd <u>R</u>emove Limit the number of simultaneous users to: 16777. 🗘 🚱 Advanced Sharing... Comments: Permissions Caching ОК Cancel Apply OK Cancel Apply

	Permissions for Users
	Share Permissions
	Group or user names:
	A Domain Users (GYAKORLAT\Domain Users)
	Add Percus
Select Users, Computers, Service Accounts, or Groups	Full Control
Select this object type:	Change 🔽
Users, Groups, or Built-in security principals Qbject Types	Read 🗹
From this location: gyakoriat local Locations	
Enter the object names to select ( <u>examples</u> ):	
Domain Users Qheck Names	
Advanced OK Cancel	UK Cancei <u>A</u> pply

Hozzuk létre a C:\Dokumentumok és C:\Kozos\_Munka nevű mappákat. Osszuk meg őket úgy, hogy az Oktatók csoport tagjai írhassák és olvashassák őket, és a Hallgatók csoport tagjai csak olvashassák a Dokumentumok megosztást, valamint írhassák és olvashassák a Kozos\_Munka megosztást.

		👃 Dokumentumok Properties 💌
🕮 l 💽 🚯 = l		General Sharing Security Previous Versions Customize
File Home Shar	e View	Object pame: C:\Dokumentumok
€ 🗇 ד ↑ 🏪 ו- ד	This PC 🕨 Local Disk (C:)	
★ Favorites ■ Desktop ▶ Downloads ₩ Recent places	Name PerfLogs Program Files Program Files (x86)	Group or user names:           Dat         CREATOR OWNER           8/2         SYSTEM           2/1         Administrators (GYAKORLAT\Administrators)           8/2         Lisers (GYAKORLAT\Lers)
🌉 This PC	Users Windows	2/1 2/1 To change permissions, click Edit.
🙀 Network	Dok Open Open in new window Share with Restore previous versions Include in library Pin to Start Send to Cut Copy Create shortcut Delete	Permissions for CREATOR     Allow     Deny       Full control     ^       Modify     Read & execute     =       List folder contents     Read
	Properties	OK Cancel Apply

lame:	C:\Dokumentumok			
)wner:	Administrators (GYAKORLAT\)	Administrators)  🛞 🖸	hange	
Permission	Auditing Effective Ac	cess		
or addition ermission e	al information, double-click a perm entries:	nission entry. To modif	y a permission entry, select	the entry and click Edit (if available).
Туре	Principal	Access	Inherited from	Applies to
🔏 Allow	SYSTEM	Full control	C:\	This folder, subfolders and files
🔏 Allow	Administrators (GYAKORLAT\	Full control	C:\	This folder, subfolders and files
🔏 Allow	Users (GYAKORLAT\Users)	Read & execute	C:\	This folder, subfolders and files
🔏 Allow	Users (GYAKORLAT\Users)	Special	C:\	This folder and subfolders
🔏 Allow	CREATOR OWNER	Full control	C:\	Subfolders and files only
A <u>d</u> d	<u>R</u> emove <u>V</u> iew			
Disable <u>i</u> n Re <u>p</u> lace a	heritance Il child object permission entries w	ith inheritable permissi	on entries from this object	

	Block Inheritance X					
<u>^</u>	What would you like to do with the current inherited permissions? You are about to block inheritance to this object, which means that permissions inherited from a parent object will no longer be applied to this object.					
	<ul> <li>Convert inherited permissions into explicit permissions on this object.</li> </ul>					
	<ul> <li>Remove all inherited permissions from this object.</li> </ul>					
	Cancel					

	Advar	ced Security Setti	ngs for Dokumentumo	k 💷 🗆	
Name:	C:\Dokumentumok				
Owner:	Administrators (GYAKORLAT\Administrators) 🛛 🛞 Change				
Dermissions Auditing Effective Access					
Permissions	Additing Effective A	ccess			
For addition	al information, double-click a per	mission entry. To mod	ify a permission entry, select	the entry and click Edit (if available).	
Permission e	entries:				
Туре	Principal	Access	Inherited from	Applies to	
Allow	SYSTEM	Full control	None	This folder, subfolders and files	
Allow	Administrators (GYAKORLAT\	Full control	None	This folder, subfolders and files	
Allow	Users (GYAKORLAT\Users)	Read & execute	None	This folder, subfolders and files	
	CREATOR OWNER	Special Full control	None	I his folder and subfolders	
A <u>d</u> d	<u>R</u> emove <u>E</u> dit				
Enable <u>i</u> nł	heritance				
Replace al	II child object permission entries v	vith inheritable permis	sion entries from this object		
				OK Cancel <u>A</u> pply	
			L		
	Advar	ced Security Setti	ngs for Dokumentumo	k – 🗖 🤉	
Name:	C:\Dokumentumok				
Name: Owner:	C:\Dokumentumok Administrators (GYAKORLAT)	Administrators) 🔞	Change		
Name: Owner: Permissions	C:\Dokumentumok Administrators (GYAKORLAT\ s Auditing Effective A	Administrators) 😵 🤉	_hange		
Name: Owner: Permissions	C:\Dokumentumok Administrators (GYAKORLAT\ s Auditing Effective Ar	Administrators) 😵 🤇	Change		
Name: Owner: Permissions For additiona	C:\Dokumentumok Administrators (GYAKORLAT\ Auditing Effective A al information, double-click a peri	Administrators) 🛞 🤇 ccess mission entry. To mod	_hange ify a permission entry, select	the entry and click Edit (if available).	
Name: Owner: Permission: For addition: Permission e	C:\Dokumentumok Administrators (GYAKORLAT\ S Auditing Effective A al information, double-click a peri entries:	Administrators) 😵 🤇 ccess mission entry. To mod	_hange ify a permission entry, select	the entry and click Edit (if available).	
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Name: Owner: Permissions For addition: Permission e Type & Allow	C:\Dokumentumok Administrators (GYAKORLAT\ Auditing Effective Ar al information, double-click a per entries: Principal SYSTEM	Administrators) 🛞 🤇 ccess mission entry. To mod Access Full control	Change ify a permission entry, select Inherited from None	the entry and click Edit (if available). Applies to This folder, subfolders and files	
Name: Owner: Permissions For addition: Permission e Type & Allow & Allow	C:\Dokumentumok Administrators (GYAKORLAT\ Auditing Effective Ar al information, double-click a per entries: Principal SYSTEM Administrators (GYAKORLAT\	Administrators) 🛞 🤇 ccess mission entry. To mod Access Full control Full control Full control	hange ify a permission entry, select Inherited from None None None	the entry and click Edit (if available). Applies to This folder, subfolders and files This folder, subfolders and files	
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Name: Owner: Permissions For addition: Permission e Type & Allow & Allow & Allow & Allow	C:\Dokumentumok Administrators (GYAKORLAT\ Administrators (GYAKORLAT\ Administrator, double-click a peri- entries: Principal SYSTEM Administrators (GYAKORLAT\ Users (GYAKORLAT\Users) CREATOR OWNER	Administrators) 😵 🤇 ccess mission entry. To mod Access Full control Full control Special Full control	Thange ify a permission entry, select Inherited from None None None None None	the entry and click Edit (if available). Applies to This folder, subfolders and files This folder, subfolders and files This folder and subfolders Subfolders and files only	
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## 4. Munka a címtárban (Johanyák Zsolt Csaba)

👃 Dokumentumok Properties 🗙	
General Sharing Security Previous Versions Customize	Permissions for Dokumentumok
General Sharing       Security       Previous Versions       Customize         Object name:       C:\Dokumentumok         Group or user names:       Group or user names:         CREATOR OWNER       SYSTEM         SYSTEM       Administrators (GYAKORLAT\Administrators)         To change permissions, click Edit.       Edit         Permissions for CREATOR       OWNER         Winter       Allow       Deny         Full control       Modify         Read       Verte         For special permissions or advanced settings, click Advanced.       Advanced	Security         Object name:       C:\Dokumentumok         Group or user names:         CREATOR OWNER         SYSTEM         SYSTEM         Administrators (GYAKORLAT\Administrators)         Add         Remove         Permissions for CREATOR         OWNER       Allow         Point         Modify         Read & execute         List folder contents         Read
OK Cancel Apply	OK Cancel Apply

Select Users, Computers, Service Accounts, or	Groups 🛛 🗙
Select this object type:	
Users, Groups, or Built-in security principals	Object Types
From this location:	
gyakorlat.local	Locations
Enter the object names to select (examples):	
Oktatók; Hallgatók	Check Names
Advanced OK	Cancel

## 4.2. Szervezeti egység, csoport és fiók létrehozása

Permissions for Dokumentumok	🔋 🖟 Permissions for Dokumentumok 🛛 🗙		
Security	Security		
Object name: C:\Dokumentumok	Object name: C:\Dokumentumok		
Group or user names: CREATOR OWNER Hallgatók (GYAKORLAT\Hallgatók) Cktatók (GYAKORLAT\Oktatók) SYSTEM Administrators (GYAKORLAT\Administrators)	Group or user names: CREATOR OWNER SYSTEM Hallgatók (GYAKORLAT\Hallgatók) Soltatók (GYAKORLAT\Oktatók) Administrators (GYAKORLAT\Administrators)		
A <u>d</u> d <u>R</u> emove Permissions for Oktatók Allow Deny	A <u>d</u> d <u>R</u> emove Permissions for Hallgatók Allow Deny		
Modify       ✓       △         Read & execute       ✓       □         List folder contents       ✓       □         Read       ✓       □         Write       ✓       □	Modify		
OK Cancel Apply	OK Cancel Apply		

		Dokumentumok Properties		
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☆ Favorites	Name C	Not Shared		
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Recent places	Program Files (x86)	lared		
	Users 2	are		
🌉 This PC	Windows 2			
Retwork	Wildows       2         Dobustic Advance       Advance         Open in new window       Set cu         Share with       *         Restore previous versions       Include in library         Include in library       *         Pin to Start       Send to         Send to       *         Cut       Copy         Create shortcut       Delete         Rename       Properties	ced Sharing         stom permissions, create multiple shares, and set other         ced sharing options.         Advanced Sharing         OK       Cancel         Apply		

Advanced Sharing X	
Share this folder	
Settings	
Share name:	
Dokumentumok	
<u>A</u> dd <u>R</u> emove	
Limit the number of simultaneous users to:	Select Users, Computers, Service Accounts, or Groups
Comments:	Select this object type:
	Users, Groups, or Built-in security principals Qbject Types
	From this location:
	gyakonatuoCal
Permissions Caching	Enter the object names to select (examples):
	Haligatok; Oktatok]
OK Cancel Apply	Advanced OK Cancel
Permissions for Dokumentumok	
Share Permissions	
Group or user names:	
Hallgatók (GYAKORLAT Hallgatók)	
A <u>d</u> d <u>R</u> emove	
Permissions for Oktatók Allow Deny	
Full Control	
Change 🗹	
Read 🗹 🗌	
OK Cancel <u>A</u> pply	

A fenti mintát követve hozzuk létre a C:\Kozos\_Munka mappát és állítsuk be a rá vonatkozó NTFS és megosztási engedélyeket. Hozzunk létre egy szkriptet login.bat néven, ami bejelentkezéskor felcsatolja a két mappát.

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File Home SI	hare View			
<ul> <li>← <ul> <li>← ↑ </li> <li>↓ Favorites</li> <li>■ Desktop</li> <li>↓ Downloads</li> <li>↓ Recent places</li> </ul> </li></ul>	\localhost\NETLOGON \\localhost\Dokumentumok \\localhost\Kozos_Munka \\localhost\NETLOGON \\localhost\SYSVOL \\localhost\Users			
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File     Home     Share     View       Image: Preview pane pane v       Navigation pane v     Panes     Image: Preview pane pane v     Image: Preview pane pane v       Image: Preview pane v     Image: Preview pane pane v     Image: Preview pane pane v     Image: Preview pane pane v       Pane v     Pane v     Image: Preview pane pane v     Image: Preview pane pane v       Image: Preview pane v     Pane v     Image: Preview pane pane v       Image: Preview pane v     Pane v     Image: Preview pane pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v     Image: Preview pane v       Image: Preview pane v     Pane v <th>v tra large icons 🖺 Large icons 🕌 Mediu mall icons 👫 List 📴 Detail les 🗮 Content Layout · localhost &gt; NETLOGON</th> <th>um icons is ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓</th> <th>oup by - Id columns - te all columns to fit rent view</th> <th><ul> <li>Item check boxes</li> <li>File name extensions</li> <li>Hidden items</li> <li>Show/hide</li> </ul></th>	v tra large icons 🖺 Large icons 🕌 Mediu mall icons 👫 List 📴 Detail les 🗮 Content Layout · localhost > NETLOGON	um icons is ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	oup by - Id columns - te all columns to fit rent view	<ul> <li>Item check boxes</li> <li>File name extensions</li> <li>Hidden items</li> <li>Show/hide</li> </ul>
View  Sort by  Sort by  Group by  Refresh Customize this folder Paste Paste shortcut Share with		► Network ► localhost	► NETLOGON	
Properties	Shortcut	Name	•	Date m
	Bitmap image       Contact       Rich Text Document       aces	iogin.ba▲	Open Edit	<u> </u>
Open File - S         We can't verify who created this file         Image: State of the sta	Security Warning    Are you sure you want to run this file?			

net use S:  $\sec{scalar}$  net use M:  $\sec{$ 

Hozzunk létre egy minta felhasználói fiókot

3	Active Directory Users and Computers	
File Action View Help		
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ForeignSecurityPrincipal:     Managed Service Accour     Sers	Find  New Computer	
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Active Directory Users and Computers						
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		Member of:			65510115	
<u>P</u> rofile path:		Name	Active Directory Do	main Services Folder		
Logon <u>s</u> cript: login.bat		Domain U	sers gyakonat.iocai/Use	15		
⊂ Home folder						
◯ <u>L</u> ocal path:						
● <u>C</u> onnect: S: ∨ <u>I</u> o: erver2-dc\Users\%	USERNAME쐲					
		A <u>d</u> d	<u>R</u> emove			
		Primary grou	up: Domain Users			
	<u>S</u> et Prima	There is no nee you have Macir applications.	d to change Primary group itosh clients or POSIX-cor	o unless npliant		
OK Cancel App	y Help		OK Cance	Apply	Help	

\\szerver2-dc\Users\%USERNAME%

		Se	lect Group:	5	x	]	
Select this	object type:						
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From this I	ocation:						
gyakorlat	local				Locations		
<u>E</u> nter the Hallqatók	object names to s	select ( <u>examp</u>	l <u>es</u> ):		Check Names		
Advan	ced			ОК	Cancel		
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<ul> <li>Active Directory Users and Com</li> <li>Name</li> <li>Saved Queries</li> <li>J gyakorlat.local</li> <li>Builtin</li> <li>Computers</li> </ul>	Type Copy Add to a group
Copy Object - User	Conv Object User
Create in:       gyakorlat.local/Informatika Tanszék         Eirst name:       Egon       Initials:         Last name:       Borziak         Full ngme:       Egon Borziak         User logon name:       Dorziak.egon       @gyakorlat.local         User logon name:       @gyakorlat.local       v         User logon name:       Dorziak.egon       @gyakorlat.local       v         User logon name (pre-Windows 2000):       GYAKORLAT\       borziak.egon	Copy Object - User  Copy Object - User  Create in: gyakofat.local/Informatika Tanszék
Copy Object - User X	
Copy Object - Oser  Create in: gyakorlat.local/Informatika Tanszék  When you click Finish, the following object will be created:  Copy from: _Hallgató Minta_ Full name: Egon Borziak User logon name: borziak.egon@gyakorlat.local The user must change the password at next logon.	
< <u>B</u> ack Finish Cancel	

Ellenőrzés:

Ego	on Borziak Pro	perties	? X			Egon Borz	iak Prop	perties	? X
Member Of Di	Dial-in Environment Sessions		Sessions	Remote control		Remote Desktop Services Profile		COM+	
Remote control	Remote control Remote Desktop Services Profile CON		COM+	General	Address	Account	Profile	Telephones	Organization
General Address A	ccount Profile	Telephones	Organization	Member	r Of	Dial-in	Envi	ironment	Sessions
User profile				<u>M</u> ember of	f:				
Profile path:			Name		Active Directory Domain Services Folder				
			Domain	Users	gyakorlat.local/Users				
Logon <u>s</u> cript: login.	Logon <u>s</u> cript: login.bat			Hallgatół	k	gyakorlat.local/Informatika Tanszék			
Home folder          Local path:         O Local path:         O Connect:         S:	▼ <u>T</u> o: \\szerv	er2-dc\Users\br	orziak.egor	Add Primary gro Set Prin	. E Doup: Do nary Group	emove	o need to Macintosh ns.	change Primary g clients or POSIX	group unless -compliant
ОК	Cancel	Apply	Help		0	к	Cancel	<u>A</u> pply	Help

Az előzőekben ismertetett lépéseket követve hozzunk létre még két hallgatói felhasználói fiókot (okoska.torp és duli.fuli).

Hallgatók Properties ?							
General Members Member Of Ma	anaged By						
Members:							
Name	Active Directory Domain S	ervices Fo					
Hallgató Minta_ Egon Borziak Fuli Duli Törp OT. Okoska	gyakorlat.local/Informatika gyakorlat.local/Informatika gyakorlat.local/Informatika gyakorlat.local/Informatika	Tanszék Tanszék Tanszék Tanszék					
< III		>					
A <u>d</u> d <u>R</u> emove							
0	K Cancel	<u>A</u> pply					

Hozzunk létre egy sablon felhasználói fiókot oktatók számára. A fiók legyen tagja az Oktatók csoportnak. A sablon felhasználásával hozzuk létre a Gipsz Jakab nevű fiókot.

A Windows 8.1 gépen jelentkezzünk be a tartományba először okoska.torp majd gipsz.jakab fióknévvel, majd ellenőrizzük le, hogy megtörtént-e a megosztások felcsatolása, és tudunk-e állományt létrehozni az egyes könyvtárakban.

## 5. Munka a címtárban parancssorból (Johanyák Zsolt Csaba)

A gyakorlat célja, hogy parancssori eszközökkel oldjuk meg a következő feladatokat: paramétereket átvevő szkript készítése, gép átnevezése, gép befűzése a tartományba, szervezeti egység és felhasználói fiók létrehozása, könyvtár megosztása és felcsatolása. A feladatok többségét hagyományos parancssori (CMD.EXE) eszközökkel fogjuk megoldani. Az átnevezéshez és a tartományba fűzéshez PowerShell utasításokat használunk.

#### 5.1. Előkészítés

A gyakorlat során Windows\_Server\_2012\_R2\_Tartomanyban és a Windows 8.1\_Alap virtuális gépeket használjuk. Mindkét virtuális gép kapcsolódjon a LAN1 alhálózatra.

### 5.2. TCP/IP konfigurációt beállító szkript

Készítsünk egy szkriptet, ami beállítja a Windows 8.1-es gép TCP/IP konfigurációját statikusan. A beállítandó cím értékeket (IPv4 cím, hálózati maszk, átjáró, DNS kiszolgáló) vegye át paraméterként.

Indítsuk el a Windows Intézőt, majd állítsuk be a kiterjesztések megjelenítését. View menü:



Hozzunk létre egy beallit.bat nevű szöveges állományt a hallgato felhasználó Dokumentumok könyvtárában, majd nyissuk meg szerkesztésre.



@echo off

rem IPv4 cím, maszk és átjáró

netsh interface ip set address name="Ethernet" source=static addr=%1 mask=%2 gateway=%3 gwmetric=1 rem DNS kiszolgáló netsh interface ip add dnsservers name="Ethernet" %4 ipconfig /all Nyissunk egy rendszergazdai parancsablakot.

cd \Users\Hallgato\Documents Próbáljuk ki a szkriptet beallit.bat 192.168.1.21 255.255.255.0 192.168.1.254 192.168.1.254

#### 5.3. Gép átnevezése és tartományba fűzése

A Windows 8.1 gépet nevezzük át Thor-nak és csatlakoztassuk a tartományba. Az átnevezéshez indítsunk egy Power Shell parancsablakot.

Második lehetőség:



A gép átnevezése:

(Get-WmiObject win32\_computersystem).Rename("Thor")

A gép újraindítása:

Restart-Computer

Az újraindítást követően Power Shell-ből fűzzük be a gépet a tartományba, majd indítsuk újra a gépet.

Add-Computer -Credential gyakorlat\Administrator -DomainName gyakorlat.local

Windows PowerShell credential req ? ×					
	Ger				
Enter your credentials.					
<u>U</u> ser name:	😰 gyakorlat\Administrator 🗸 🔐				
Password:	•••••				
	OK Cancel				

#### **Restart-Computer**

A szerveren rendszergazdai parancsablakban ellenőrizzük le a tartományba fűzés eredményét úgy, hogy lekérdezzük a tartományban levő számítógépek listáját.

dsquery computer

#### 5.4. Felhasználói fiók és bejelentkezési szkript, NTFS engedélyek

Lépjünk be a szerverre tartományi rendszergazdaként. Nyissunk egy rendszergazdai parancsablakot. Hozzuk létre a Konyveles nevű szervezeti egységet a címtárban.

dsadd ou "ou=Konyveles,dc=gyakorlat,dc=local"

Ellenőrizzük le.

dsquery ou

Hozzunk létre egy Konyvelok nevű biztonsági csoportot a szervezeti egységben dsadd group "cn=Konyvelok,ou=Konyveles,dc=gyakorlat,dc=local"

Osszuk meg a hálózaton a szerver C:\Users könyvtárát a tartományi felhasználóknak teljes hozzáféréssel.

net share Users=C:\Users /GRANT:"Domain Users",FULL /UNLIMITED /REMARK:"Felhasznaloi konyvtarak"

Ellenőrizzük le.

net share

Hozzuk létre a C:\Info könyvtárat a szerveren, majd osszuk meg olvasásra a tartományi felhasználók számára. mkdir C:\Info

net share Info=C:\Info /GRANT:"Domain Users",READ /UNLIMITED /REMARK:"Hasznos dokumentumok

Hozzunk létre egy bejelentkezési szkriptet belep.bat néven, ami felcsatolja I: meghajtóként az Info megosztást. Magát a szkriptet is parancssorból hozzuk létre. C:\>copy con C:\Windows\SYSVOL\sysvol\gyakorlat.local\scripts\belep.bat net use I: \\SZERVER2-DC\Info ^Z

Hozzunk létre egy tartományi felhasználót a Konyveles szervezeti egységben úgy, hogy a Konyvelok csoport tagja legyen, legyen saját könyvtára a szerveren, ami S: meghajtóként csatolódik fel, a jelszava soha ne járjon le, a fiók soha ne járjon le, valamint bejelentkezéskor fusson le az előzőleg létrehozott szkript.

dsadd user "cn=gipsz.jakab,ou=Konyveles,dc=gyakorlat,dc=local" -samid gipsz.jakab -upn gipsz.jakab@gyakorlat.local -pwd xX12345 -fn Jakab -ln Gipsz -mi GJ -display "Gipsz Jakab" -memberof "cn=Konyvelok,ou=Konyveles,dc=gyakorlat,dc=local" -pwdneverexpires yes -acctexpires never -disabled no -hmdir "\\SZERVER2-DC\Users\Gipsz.Jakab" -hmdrv S: -loscr belep.bat

Ellenőrizzük le a felhasználó létrejöttét.

dsquery user

A felhasználó saját könyvtára még nem jött létre, hozzuk létre azt most parancssorból.

mkdir C:\Users\Gipsz.Jakab

Állítsuk be az NTFS hozzáférés szabályozást (engedélyeket) úgy, hogy a felhasználónak és a tartománygazdáknak teljes hozzáférése legyen, és más ne kapjon engedélyt.

cacls C:\Users\Gipsz.Jakab /t /g Gipsz.Jakab:F "Domain Admins":F

Készítsünk egy szkriptet, amiben

- létrehozunk egy Hallgatok nevű szervezeti egységet
- létrehozunk 9 könyvtárat C:\Users\H1..H9
- létrehozunk 9 felhasználót H1..H9, saját könyvtáruk legyen a fenti H1..H9, mindegyik jelszava legyen xX12345
- teljes hozzáférést adunk a 9 felhasználónak és a tartománygazdáknak az előzőekben létrehozott könyvtárakhoz

@echo off
rem Szervezeti egyseg letrehozasa
dsadd ou "ou=Hallgatok,dc=gyakorlat,dc=local"

rem Felhasznaloi fiokok letrehozasa for /L %%i IN (1,1,9) DO ( echo %%i-felhasznalo letrehozasa

```
)
```

rem Konyvtarak letrehozasa for /L %%i IN (1,1,9) DO ( echo %%i-mappa letrehozasa md c:\Users\H%%i )

rem NTFS engedelyek beallitasa for /L %%i IN (1,1,9) DO ( echo %%i-jogosulsagkiosztas cacls c:\Users\H%%i /G H%%i:F "Domain Admins":F )

Ellenőrizzük le a felhasználók létrehozását.

dsquery user

Ellenőrizzük le az NTFS engedélyek meglétét.

cacls C:\Users\H1

Eredmény:

C:\Users\H1 GYAKORLAT\H1:(OI)(CI)F GYAKORLAT\Domain Admins:(OI)(CI)F

A rövidítések jelentése:

OI: This folder and files CI: This folder and subfolders

Ellenőrizzük a Windows 8.1 gépre történő bejelentkezéssel a konfigurálás eredményét.

#### 5.5. Ajánlott irodalom

- http://www.techotopia.com/index.php/Using\_NET\_SHARE\_to\_Configure\_Windows\_Ser ver\_2008\_File\_Sharing
- http://technet.microsoft.com/en-us/library/cc731279.aspx
- http://technet.microsoft.com/en-us/library/bb490872.aspx

6. Biztonsági házirend (*Göcs László*)

7. Web és FTP szerver telepítése és konfigurálása (*Göcs László*)

## 8. Power Shell alapok (Johanyák Zsolt Csaba)

## 8.1. Munka a konzolon

# Számológép **512/8** 

# Mértékegység átváltás - van három merevlemezem, mennyi az összes kapacitás GB-ban? (40gb+2tb+250gb)/1gb

# Hagyományos konzolparancsok használata álnevekkel (nem teljes az egyezés!) dir cd C:\windows cls # Minek az álneve? Get-Alias cd

# Parancsok listájának lekérdezése (3 kategória)

# - Cmdlet - PS beépített parancsok
# - Alias
# - Function - PS utasításokból álló blokk, aminek nevet adunk, és ezzel névvel hívható
Get-Command -CommandType cmdlet

# Parancsok felépítése
# Ige-Főnév
# Szűrés az ige alapján
Get-Command -Verb get

# Szűrés főnév alapján Get-Command -Noun process

# Automatikus kiegészítés Tabulátorral
# Többszöri lenyomással váltogathatunk a lehetőségek között
# pl. Get-

# Paraméterek/kapcsolók Parancs -kapcsoló

# Súgó -alap Get-Help Get-Acl # Súgó - csak példák Get-Help Get-Acl -examples # Részletesebb példákkal get-help Get-Acl -detailed # Minden get-help Get-Acl -full

# Konzolablak törlése Clear-Host

# PowerShell szkript engedélyezés korlátozás nélkül
# RemoteSigned - távolról csak aláírt
# Restricted - semmilyen szkript futtatását nem engedjük
Set-ExecutionPolicy unrestricted

# Számítógép leállítása # Stop-Computer -computername Gép1, Gép2, localhost **Stop-Computer** 

# Számítógép újraindítása Restart-Computer

### 8.2. Dátum és idő

# Lekérdezés Get-Date Get-Date -DisplayHint Time Get-Date -DisplayHint Date # Beállítás - ha virtuális gépben adjuk ki a parancsot, 1-2 mp múlva vissza szinkronizál # a hoszt op. rendszerhez Set-Date "2011. március 15. 8:30:00"

8.3. Objektumok használata

# Szöveg kiíratása "Ez itt egy szöveg" # Változók definiálása **\$p=Get-Command \$p** 

# *Típusosan* [int]\$db=\$p.Count \$db

# Milyen tagjai vannak egy osztálynak/objektumnak? [int]| Get-Member \$s="Ez itt egy szöveg" \$s | Get-Member

## 8.4. Gyűjtemények

# -----

# Gyűjtemények kezelése/lekérdezése - általában parancscsatolással # egy másik parancs kimenetét kapja meg, azon hajt végre műveletet

# Minden objektumra egyesével - ciklus
# ForEach-Object { parancs(ok)} - röviden: foreach

# Oszlopok szűrése # Select-Object { parancs(ok)} - röviden: select

# Sorok szűrése
# Where-Object { parancs(ok)} - röviden: where
# Sorra megkapja a gyűjtemény összes objektumát. Az aktuális objektumra a
# parancsban \$\_ névvel tudunk hivatkozni. pl. \$\_.Name -eq "Okoska"

# Összehasonlítás # **Compare-Object ob1 ob2** - röviden: compare

# Megszámlálás # **Measure-Object** - röviden: measure

# Csoportosítás # **Group-Object** - röviden: group # Sorba rendezés # **Sort-Object** - röviden: sort # ------

8.5. Munka az állományrendszerben

# Elérhető meghajtók (ún. gyökérpontok) lekérdezése Get-PSDrive

# Aktuális hely lekérdezése Get-Location

# Aktuális hely beállítása Set-Location C:\

# Könyvtár létrehozása és törlése valamint változó használata \$K=New-Item -Name "Munka" -Type directory # Remove-Item Munka # Remove-Item \$K

# Aktuális hely beállítása Set-Location C:\Windows

# Könyvtár tartalomjegyzéke (Rejtett állományok csak a -force kapcsolóval jelennek meg)
# Rövidített változat : gci
Get-Childltem -Recurse | Out-File C:\Munka\windows-lista.txt
# Próbáljuk ki most a Munka mappa törlését - figyelmeztető ablak jelenik meg

Remove-Item \$K

# Hozzuk létre a Munka könyvtárat
Set-Location C:\
\$K=New-Item –Path . -Name "Munka" -Type directory
# –Path . ez az aktuális könyvtárban hozza létre

# Állomány létrehozása és törlése Set-Location C:\Munka \$ÁII=New-Item -Name "szoveg.txt" -Type file Remove-Item \$ÁII # Attribútumok beállítása - először újból létrehozzuk \$Áll=New-Item -Name "szoveg.txt" -Type file \$Áll.Attributes="archive, readonly"

# Írjunk bele valamit pl. a Jegyzettömb programmal

# Állomány tartalmának megtekintése (type) Get-Content C:\Munka\szoveg.txt

# Többsoros szöveges állomány létrehozása
"Első sor", "Második sor", "Harmadik sor" > proba.txt
Get-Content proba.txt
\$p=Get-Item proba.txt
\$p=Get-Item proba.txt
\$p | Format-List

#Tulajdonság módosítása \$p.LastWriteTime \$p.LastWriteTime=[DateTime]"2011.01.01. 11:00:00"

# Állomány másolása Copy-Item –Path proba.txt –Destination uj.txt \$p.CopyTo("puj.txt")

# Csoportos állomány másolás New-Item –Path . -Name "Biztonsagi" -Type directory Get-ChildItem –Name \*.txt | Copy-Item –Destination .\Biztonsagi

#Töröljük az összes olyan állományt az aktuális könyvtár alatti könyvtárszerkezetben, ami nulla hosszúságú. #Törlés előtt az esetleges readonly attríbútumot archive-ra cseréljük. dir -r | where-object{\$\_.length -eq 0}| foreach-object{ \$\_.attributes = "archive" ; \$\_ | Remove-Item}

#### 8.6. NTFS engedélyek

# NTFS biztonsági leíró (security descriptor) lekérdezése
# Engedélyek megtekintése
Get-Acl szoveg.txt | Format-List
\$MAcl=Get-Acl C:\Munka

# Engedélyek beállítása. Feltételezzük, hogy van egy proba.gerzson # azonosítójú felhasználói fiókunk.

# Kiadható engedélyek: ListDirectory, ReadData, WriteData, CreateFiles,
# CreateDirectories, AppendData, ReadExtendedAttributes,
WriteExtendedAttributes,

# Traverse, ExecuteFile, DeleteSubdirectoriesAndFiles, ReadAttributes,

# WriteAttributes, Write, Delete, ReadPermissions, Read, ReadAndExecute,

# Modify, ChangePermissions, TakeOwnership, Synchronize, FullControl #

# Set-Acl -path AzÁllomány -AclObject BiztonságiLeíró #

# Készítünk egy-egy szabályt, amelyben a proba.gerzson

# felhasználóknak teljes hozzáférést adunk

\$Szabály1=New-Object

System.Security.AccessControl.FileSystemAccessRule( "proba.gerzson","FullControl","Allow")

# Hozzáadjuk a változó (Munka könyvtár) ACL listájához az új szabályt **\$MAcI.AddAccessRule(\$Szabály1)** 

# Készítünk egy-egy szabályt, amelyben a rendszergazda

# felhasználóknak teljes hozzáférést adunk

\$Szabály2=New-Object

System.Security.AccessControl.FileSystemAccessRule( "Rendszergazda","FullControl","Allow")

# Hozzáadjuk a változó (Munka könyvtár) ACL listájához az új szabályt \$MAcI.AddAccessRule(\$Szabály2)

# Az új ACL listát a könyvtárhoz rendeljük Set-Acl C:\Munka \$MAcl

# Ellenőrzés \$MAcl=Get-Acl C:\Munka \$MAcl | fl \*

# A cél az, hogy csak a proba.gerzson felhasználó rendelkezzen hozzáféréssel.

# Megszakítjuk az engedélyek öröklését (\$true), és nem tartjuk meg az # örökölt engedélyeket (\$false)

\$MAcl.SetAccessRuleProtection(\$true,\$false) \$MAcl | Set-Acl C:\Munka

# Ellenőrzés Get-Acl C:\Munka | fl \* # Utolsó hozzáférés lekérdezése
Set-Location C:\Munka
# A fájlt leíró objektum lekérdezése
\$ÁII=Get-Item "szoveg.txt"
\$ÁII.LastAccessTime
# Hozzáférésszabályozás lekérdezése
\$ÁII.GetAccessControl() | fl \*

# Mennyi helyet foglalnak el a lemezen a TXT állományok MB-ban? ((dir c:\ -R -filter \*.txt | measure -property length -Sum).Sum)/1mb

# -----

# Két könyvtárstruktúra összehasonlítása (csak az állományok meglétét, nem a tartalmat)

# -----

#### Set-Location C:\

# Hozzunk létre egy Biztonsagi nevű mappát a Munka mappa másolásával

Copy-Item c:\Munka c:\Biztonsagi

# Hozzunk létre egy új állományt a Munka könyvtárban "Új állomány" > c:\Munka\ujallomany.txt

# Másoljuk be egy-egy változóba a két mappa tartalmát jelképező objektumokat \$M="Munka" if(-not(Test-Path \$M)) {New-Item -Name \$M -Type Directory} # Létrehozunk néhány állományt a Munka könyvtárban ... # ... # Jöhet a szinkronizálás # Ha nem létezik a Biztonsagi könyvtár, akkor létrehozzuk azt \$B="Biztonsagi" if(-not(Test-Path \$B)) {New-Item -Name \$B -Type Directory} # Lekérdezzük rekurzívan a két könyvtár tartalmát \$KM=dir \$M \$KB=dir \$B

# Hasonlítsuk össze a két könyvtárat - megvannak-e ugyanazok az állományok?

if((\$KM -eq \$null) -and (\$KB -eq \$null)) {"Mindkét könyvtár üres!"}

```
elseif ($KB -eq $null) {copy ($M+"\*.*") $B\}
elseif ($KM -eq $null) {copy ($B+"\*.*") $M\}
compare $KM $KB -includeequal
foreach{
 if($ .SideIndicator -eq "<=")
 { ($M+"\"+$_.InputObject+"-->"+$B);
   copy ($M+"\"+$_.InputObject) $B;
 }
 elseif($ .SideIndicator -eq "=>")
 { ($M+"<--"+$B+"\"+$_.InputObject);
  copy ($B+"\"+$_.InputObject) $M;
 }
 else
 { ($M+"\"+$_.InputObject+"=="+$B+"\"+$_.InputObject);
 }
}
```

```
# Ha az utolsó módosítás időpontját is figyelembe akarjuk venni:
# (Get-Item "C:\Munka").LastWriteTime -gt (Get-Item "C:\UjMunka").LastWriteTime
```
8.7. Munka a rendszerleíró adatbázisban

Set-Location HKLM: cd software dir

8.8. Munka a környezeti változókkal

Set-Location ENV: dir

# Melyik tartományvezérlőről jelentkezett be az aktuális felhasználó? dir env: | where {\$\_.Name -eq "LOGONSERVER"}

# Milyen nevű számítógépen dolgozok?
dir env: | where {\$\_.Name -eq "COMPUTERNAME"}
# Érték alternatív lekérdezése
\$ENV:PATH

# Környezeti változó módosítása \$ENV:PATH=\$ENV:PATH+";C:\Munka"

# Ellenőrzés **\$ENV:PATH** 

## 8.9. Folyamatok

# Futó folyamatok listája Get-Process Get-Process -ComputerName 10.1.52.7

# Kapcsolódó parancsok

Start-Process Stop-Process Wait-Process # várakozás, amíg egy korábban kiadott folyamatleállítás végre nem hajtódik

# Szolgáltatások az aktuális vagy egy távoli gépen (állapot, név, magyarázat)

*# Hosszú távon futó alkalmazás, ami legtöbbször az op. rendszerrel indul és általában nem igényel felhasználói interakciót* **Get-Service** 

Get-Service -ComputerName 10.1.52.7

# Kapcsolódó parancsok Start-Service Stop-Service Restart-Service Resume-Service # A felfüggesztett állapotból újraindít Suspend-Service # Felfüggeszt Set-Service # Starts, stops, and suspends a service, and changes its properties. New-Service # Szolgáltatásként regisztrál egy programot

# Futtatás a háttérben
#
# WinRM szolgáltatás bekapcsolása (Windows Remote Management) http kommunikációt használ
winrm quickconfig

# Feladat elindítása - a C:\windows könyvtár alatt levő állományok és könyvtárak Start-Job -Name winlista -ScriptBlock {Set-Location C:\Windows;Get-ChildItem -Recurse | Out-File C:\Munka\wlista.txt}

# Állapot lekérdezése - paraméter nélkül listát kapunk Get-Job -Name winlista

# Háttérben tárolt eredmények lekédezése: receive-job - Name jobnév # Háttér munkamenet leállítása: remove-job -id 5

# Eredmény állomány megtekintése (type) Get-Content C:\Munka\wlista.txt

## 8.10. Eseménynapló olvasása

*# Milyen eseménynaplókat vezet az operációs rendszer?* **Get-EventLog -List** 

# A Rendszer eseménynapló Get-EventLog System

# Melyik alkalmazás ír a legtöbbet az Alkalmazás eseménynaplóba? Get-EventLog Application | group -property source -noelement | sort -property count -desc

# A PowerShell eseménynaplója Get-EventLog "Windows PowerShell"

# Sikertelen bejelentkezések október elsejét követően Get-EventLog Security -After ([DateTime]"2011.10.01")| where{\$\_.EntryType -eq "FailureAudit"}

## 8.11. Munka a címtárban

# Telepítve kell legyen az Active Directory modul a Windows PowerShell környezethez

# Távoli kiszolgálófelügyelet eszközei

- # Szerepkör felügyeleti eszközök
- # AD DS és AD LDS eszközök
- # Active Directory modul a Windows PowerShell környezethez

# Elérhető modulok listája Get-Module

# Ha nincs a listában, akkor betöltjük # Active Directory modul betöltése Import-Module activedirectory

# A rendelkezésre álló parancsok listája Get-Command -Module ActiveDirectory

# Kapcsolódás cd AD:

# A lista elemei a címtárpartíciók dir

# Információk az erdőről Get-ADForest # Tartományba lépés CD "DC=Gyakorlat, DC=HU"

# Információk az aktuális tartományról Get-ADDomain

# Lista táblázatosan úgy, hogy mindent kiírjon a tartomány legfelsőbb
# szintű tárolói (konténerek és szervezeti egységek)
DIR | Format-Table -Auto

# Információk a tartományvezérlőkről Get-ADDomainController

# Keresem azt a tartományvezérlőt, ami globális katalógus Get-ADDomainController -Filter {isglobalcatalog -eq \$true}

# A laborok szervezeti egység tartalmának kilistázása DIR ou=laborok

# Lista rekurzívan mindent Dir -Recurse | ft -a

# Az összes számítógép objektum kiíratása Get-ADObject -Filter {objectclass -eq "computer"} | ft -a

# A címtárban tárolt összes felhasználó fiók kiíratása Get-ADUser -Filter {name -like "\*"}

# Csak az "igazi" felhasználók, aiknek van családneve Get-ADUser -Filter {surname -like "\*"} | ft Name, SamAccountName

# A letiltott felhasználók listája Get-ADUser -Filter {name -like "\*"} | select Name, Enabled| Where-Object{!\$\_.Enabled} | ft -a

 # Egy konkrét felhasználói fiók keresése + az összes tulajdonság megjelenítése
 # -Properties \* nélkül kevesebb tulajdonság jelenik meg
 Get-ADUser -Identity proba.gerzson -Properties \*

# Az utóbbi 240 napban létrehozott felhasználók teljes neve és felhasználóneve

\$Időpont=(Get-Date).AddDays(-240)

Get-ADUser -Filter {created -gt \$Időpont} | ft Name, SamAccountName

# Azok a felhasználók, akik bejelentkeztek az elmúlt 100 napban \$Időpont=(Get-Date).AddDays(-100) Get-ADUser -Filter {LastLogonDate -gt \$Időpont} | ft Name, SamAccountName

# Azok a felhasználók, akiknél nincs megadva a profil helye Get-ADUser -Filter {ProfilePath -notlike "\*"} | ft Name, ProfilePath

# Csoportok keresése a fa egy ágában és az összes tulajdonság kiíratása

Get-ADGroup -SearchBase "DC=Gyakorlat, DC=HU" -SearchScope SubTree -Filter {Name -like "\*Felhasználók\*"} -Properties \*

# Felhasználó felvétele a Tartománygazdák csoportba # Először megkeressük a tartománygazdák csoport objektumát \$Tartománygazdák=Get-ADGroup -SearchBase "DC=Gyakorlat, DC=HU" -SearchScope SubTree -Filter {Name -like "\*Tartománygazdák\*"}

# Hozzáadjuk az új tagot

Add-ADGroupMember -Member "proba.gerzson" -Identity \$Tartománygazdák

# Ellenőrzés

Get-ADGroup -SearchBase "DC=Gyakorlat, DC=HU" -SearchScope SubTree -Filter {Name -like "\*Tartománygazdák\*"} -Properties "member"

# Felhasználó eltávolítása a tartománygazdák csoportból

Remove-ADGroupMember -Member "proba.gerzson" -Identity \$Tartománygazdák

# Ellenőrzés

Get-ADGroup -SearchBase "DC=Gyakorlat, DC=HU" -SearchScope SubTree -Filter {Name -like "\*Tartománygazdák\*"} -Properties "member"

8.12. Ajánlott irodalom

- PowerShell a technetklub.hu-n
   http://technetklub.hu/rendszerfelugyelet/powershell/
- •