Installation and configuration Microsoft Clustering Service service for 2-node cluster.

Network configuration:

Each of the nodes should have two network adapters (one for connection to public network and the other one for direct connection with second node)

a.) check the connections with public and private network.

b.) configure addresses for both network interfaces.

Configuration of network adapters for private network:

a.) click right mouse button on My Network Places and next Properties

**b.**) click on icon **Local Area Connections 2** (having in mind, that through this connection we will configure network interface connected direct to second node), and next **Properties**.



c.) click on Internet Protocol (TCP/IP) and next Properties.

cal Area Connection Properties	
neral Authentication Advanced	
onnect using:	
👜 Intel(R) PRO/100+ Management Ada	<u>C</u> onfigure
nis connection uses the following items:	7
Client for Microsoft Networks	
🗌 🌉 Network Load Balancing	
🗹 🚽 File and Printer Sharing for Microsoft Ne	etworks
M Trotocol CP/IP	
The second of the second se	
Install	P <u>r</u> operties
Description	
Transmission Control Protocol/Internet Protoc	ol. The default
wide area network protocol that provides com	nmunication
across diverse interconnected networks.	
Show icon in polification area when connect	ted
Notifu me when this connection has limited o	r no connectivitu
Trody me then the connection has inneed o	a no connecting
	1
04	Canor

d.) Check the SelectBox **Use the following IP address** and enter such IP address: 10.1.1.1 As an NetMask enter: 255.0.0.0 (for the second node the Ip address: 10.1.1.2, NetMask: 255.0.0.0)

u can get IP settings assigned s capability. Otherwise, you n r the appropriate IP settings.	automaticali eed to ask yo	y if ' our r	your hetw	r nei iork	two adı	rk suppo ministrati	or or
O Obtain an IP address autor	natically						
Use the following IP addres	s:						
IP address:	10	, Ì	į.,	1	123	1	
Sybnet mask:	255	. C	),	0	-	0	
Default gateway:		8	1		- 65		
C Obtain DNS server address	automatical	ÿ.					
Use the following DNS service	er addresses	;—					
Preferred DNS server:	127	. 0	•	0	16	1	
<u>A</u> lternate DNS server:			Ţ		93		

1. Prepare shared data magazine

a) create necessary volumes

Additionally create an volume (size about 500Mb) which will be used as quorum disk for cluster service.

If you would like to know more about Quorim disk please visit: http://support.microsoft.com/?id=280345

Volume: vg0			
Function:	Units Assigne	d	7
Unit	S	ize (GB)	
Unit H2		115.04	
Eunction:	ISCSI Volume	Manager	2
	Volume	Size (GB)	
tgv	000	0.66	
tgv	001	40.59	
Reserved	for snapshot	0.00	
Reserve	d for swap	0.00	_
F	ree	73.75	
			_
ō		73	1.75
	Volume: vgD Function: Unit Unit H2 Function: Logical tgv Reserved Reserved F	Volume: vg0         Function:       Units Assigned         Unit       S         Unit H2       Image: Comparison of the symbol         Function:       iSCSI Volume         Logical Volume       Image: Comparison of the symbol         tgv000       tgv001         Reserved for snapshot       Reserved for swap         Free       Image: Comparison of the symbol         0       Image: Comparison of the symbol	Volume: vg0         Function:       Units Assigned         Unit       Size (GB)         Unit H2       115.04         Function:       ISCSI Volume Manager         Logical Volume       Size (GB)         tgv000       0.66         tgv001       40.59         Reserved for snapshot       0.00         Free       73.75         0       73

# b) create targets

open-e	( iqn.2005-1	D:iscsi.targe	tO		
	Function:	Target V	olume Mana	ger	2
	Volume	Size (GB)	LUN:	Action:	
E Co targets	tgv000	0.66	0	Remove	
™¥4 targetu	tgv001	40.59		Add	
	Function:	Target A Target Pass Target II cess	ccess Passy word Access	word apply	5 2
	Allowed ac	cess		apply	logout

# c.) asocciate targets with volumes

	ign.2005-10:iscsi.target1
Open-E iSCSI ENT Output outpu	Function:     Target Volume Manager     ?       Volume     Size (GB)     LUN:     Action:       tgv001     40.59     Image: Remove
- ₽8 target0 - ₽4 target1	Function:     Target Access Password     ? <ul> <li>Enable Target Password Access</li> </ul>
	Allowed access
	Eurotian Taxat Bacama

Login On created targets using Microsoft iSCSI Inititor.

10. 11.	Address 192.168.0.19	Port 9 3260	Adapter Default	IP Address Default
	Add		<u>R</u> emove	Refresh
	SNS Servers			
	Name			]
	l A <u>d</u> d	1	Remove	Refresh

Select a target and click Log On to acce target. Click details to see information ab devices for that target.	ess the storage devices for that bout the sessions, connections and
Targets:	la
Name	Status
ign 2005-10:iscsi target1	Connected
Detelle	Lon De Dafersk
	Log Un Rerresn

1. Through **Disk Management** give your new disks letters and make file systems.

📮 Computer Management									_ 🗆 🗙
Eile Action View Window H	elp								_8×
← → 🖻 🖬 😫 🖾 🗙 🖆	' 🗃 🔯 😼								
Computer Management (Local)	Volume	Layout	Туре	File System	Status	Capacity	Free Space	% Free	Fault Tolerar
🖻 🎬 System Tools	🕮 (C:)	Partition	Basic	NTFS	Healthy (System)	9.77 GB	7.56 GB	77 %	No
Event viewer      Event Folders		Partition	Basic	CDEC	Formatting : (	40.59	40.59 GB	100 %	No
🗄 🎆 Performance Logs and Alert:	New Volume (E:)	Partition	Basic	NTES	Healthy	667 MB	0 MB 661 MB	99.%	No
Device Manager		1 di cicion	Dasie	and by	noacty	007 110	001110	22.10	1905
E- 🚰 Storage									
Disk Defragmenter									
Disk Management									
🗄 😼 Services and Applications	<u> </u>								<u> </u>
	🗇 Disk ()								
	Basic	(C:)				2			
	232,84 GB Online	9.77 GB NTF Healthy (Svs	S stem)		223.07 GB Unallocate	d			
		1.1	and all		11				
	Basic	New Yolup	o (E)						
	667 MB	667 MB NTF:							
	Online	Healthy	////	///////////////////////////////////////					
	🗇 Disk 2								
	Basic	(F:)							_
	Online	40.59 GB Formatting :	(100%	)					
	() () () () () () () () () () () () () (		02 O	s	1				-
	Unallocated Pr	imary partitio	n						-
						1		4 <b>M</b>	

- 1. Check if both nodes are in the same domain.
- a.) click right mouse button on My Computer, next Properties.
- b.) click Network Identification, and in this moment you can connect to the domain.

## 2. Create Cluster User Account

## a) go to start->Programs->Administrative Tools->Active Directory Users and Computers

- b) click right mouse button on Users, next New->User
- c) fill the required data, and click Next

<i>á</i> Active Directory Users and Comp	uters			
🧹 Eile Action Yiew Window He	lp			_8×
	6 🖪 😰 🧚	7 📆 🐚 🖓 🍕	°a	
Active Directory Lisers and Computer	Users 17 objects			
E Saved Queries	Name	Type	Description	
W       Builtin         Computers       Computers         Obmain Controllers       ForeignSecurityPrincipals         Delegate Control       Find         Find       New         All Tasks       View         New Window from Here       Refresh         Export List       Properties	Administrator Cert Publishers DnsAdmins DnsUpdatePr Domain Admins Domain Com Domain Cont Domain Cont Computer Contact Group InetOrgPerson MSMQ Queue A Printer User Shared Fower TelnetClients	User Security Group Security Group Security Group Security Group Security Group Security Group / Group / Group / Group / Group / Group / Group / Group / Group	Built-in account for admini Members of this group are DNS Administrators Group DNS clients who are permi Designated administrators All workstations and serve All domain controllers in th All domain guests All domain users Designated administrators Members in this group can Built-in account for guest Group for the Help and Su Servers in this group can Designated administrators This is a vendor's account Members of this group ha	
Help				

v Object - User	ht	
Creat	ein: w/Users	
<u>F</u> irst name:	cluster	Initials:
Last name:		
Full name:	cluster	
User logon name		
cluster	@w	•
User logon name	(pre- <u>W</u> indows 2000):	
W1	cluster	
	( Back	Nevt \ Cancel
	* Edox	

d) select User Cannot Change Password and Password Never Expires

Password:				
 Confirm pa	ssword:			
- Hear m	ust obendo o	, te brouwee	neut logon	
✓ Userc	annot change pa	password	nexclogon	
✓ Pass <u>w</u>	ord never expi	ires		
Acc <u>o</u> u	nt is disabled			

f) click right mouse button on created user Add Members to a Group and add group Administrators

literation and Composite Active Directory Users and Compo	uters			
G Eile Action View Window He	lp			X
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 📆 🐚 🖓 🍕	6	
Active Directory Users and Computer	Users 18 objects			
🗄 🧰 Saved Queries	Name	Туре	Description	
Builtin	Administrator	User Security Group	Built-in account for admini Members of this group are	
Computers	cluster     DonsAdmins     DonsUpdatePr.     Domain Admin:     Domain Com.,     Domain Cont.,     Domain Guests     Domain Users     Enterprise A.,     Group Policy .,     Guest     HelpServices.,     RAS and IAS,     Schema Admin     SUPPORT_38,     TelnetClients _	Copy Add to a group Disable Account Reset Password Moye Qpen Home Page Send Mail All Tasks Cut Delete Rename Properties Help	<ul> <li>Administrators Group</li> <li>clients who are permi</li> <li>ignated administrators</li> <li>vorkstations and serve</li> <li>domain controllers in th</li> <li>domain guests</li> <li>domain users</li> <li>ignated administrators</li> <li>nbers in this group can</li> <li>-in account for guest</li> <li>up for the Help and Su</li> <li>vers in this group can</li> <li>ignated administrators</li> <li>is a vendor's account</li> <li>nbers of this group ha</li> </ul>	
Allows you to add the selected objects to a	group you select.			

elect Group	?)
Select this object type:	
Group or Built-in security principal	<u>O</u> bject Types
Erom this location:	
w	Locations
Enter the object name to select ( <u>example</u>	<u>15</u> ]:
Administrators	<u>Check Names</u>

- 4. Run the Cluster Administrator
  - Click Start->Programs -> Administrative Tools->Cluster Administrator

6.	From th	e Action	menu cho	ose Create	e new clu	ster
----	---------	----------	----------	------------	-----------	------

🔓 Cluster Administrator	- 🗆 ×
Eile View Help	
Open Connection to Cluster       ? X         Action:       Create new cluster         Cluster or server name:	
For Help, press F1	

7. Click **Next**, next precise the name of the domain, in which the cluster will be created and the name of cluster

Cluster Name and Domain Specify the name of the new server clu created.	luster and the domain in which it will be	
Select or type the name of the domain computers in this domain can be memb	in which the cluster will be created. Only bers of the cluster.	
Domain:		
w	•	
This must be a valid computer name.		
S # 3 ( G # 5		
cluster		

8. Enter the name of the computer, which will be the first node. Click **Next**.

New Server Cluster Wizard		×
Select Computer The computer must be a member of the d	omain you specified.	
Enter the name of the computer that will b	e the first node in the new cluster.	
Computer name:	Browse	
	Adyanced	
	< <u>B</u> ack <u>N</u> ext >	Cancel

At this moment there will be done analysis of cluster configuration. If the test would be negative bo back and correct errors.

w Ser	ver Clus	ter Wizard				5
Ana	<b>lyzing Co</b> Please wa	onfiguration it while the wizar	d determines	the cluster configu	ration.	
± ± ±	<ul> <li>✓ Checl</li> <li>✓ Estab</li> <li>✓ Checl</li> <li>✓ Findin</li> <li>✓ Checl</li> <li>✓ Checl</li> <li>✓ Scomplet</li> </ul>	king for existing o lishing node con king node feasibi ig common resou king cluster feasi ed	cluster nection(s) lity rces on node bility	\$		
Click	Next to c	ontinue. Click Ba	ick to change	View Log	<u>D</u> etails	<u>R</u> e-analyze
CIICK		or an lac. Slick De	ion to change	ano contriguration.		

9. Enter an IP address under which the cluster will be available

New Server Cluster Wizard	×
IP Address Enter an IP address that cluster management tools cluster.	will use to connect to the
IP <u>A</u> ddress:	
	Back Next > Cancel

10. Precise the username from level of which will be started the cluster service

New Server Clu	ster Wizard
<b>Cluster Ser</b> Enter log be run.	vice Account jin information for the domain account under which the cluster service will
<u>U</u> ser name:	cluster
Password:	
<u>D</u> omain:	W
Ihis ac for prop	count will be given local administrative rights on all nodes of this cluster to allow er operation.
	< <u>B</u> ack <u>N</u> ext > Cancel

In next stage by clicking on Quorum is possibility to precise the localisation of Quorum on the disk

Cluster name:			<u>.</u>
Cluster IP add	Cluster Configuration Q	uorum	? ×
192.168.0.{	Select the resource or res	ource tune that you would like	to
Cluster networ	use for the quorum resour	ce.	
Local Area	Disk E		
Primary A	Local Quorum		
Cluster service	Disk E:		
Name:cluster	Disk F: Majority Node Set		
Password: **	***		

After clicking next there will be performed a configuration test, if anny error will occure, go back and enter correct data.

w Ser	ver Cluster Wizard			
Crea F	<b>ting the Cluster</b> Please wait while the cluster is confi	gured.		Î
	<ul> <li>Reanalyzing cluster</li> <li>Configure cluster services</li> <li>Configure resource types</li> <li>Configure resources</li> </ul>			
		View Log	Details	<u>R</u> etry
		< Back	Next >	Cancel

11. To finish the cluster installation, click Finish

New Server Cluster Wizard	X
	Completing the New Server Cluster Wizard You have successfully completed the New Server Cluster Wizard.
	<u>V</u> iew Log To close this wizard, click Finish.
	K. <u>B</u> ack <b>Finish</b> Cancel

Adding a node to the cluster

### 1. Run Cluster Administrator

2. In the Listed Menu check Add nodes to cluster.

3. After the start-up of the configurator set all values analogously to the configuration of first cluster.

Appendix A:

# How to make the Cluster service dependent on the Microsoft iSCSI Initiator service (MsiSCSI):

On the cluster node, click **Start**, click **Run**, type cmd, and then click **OK**.2.Type the following command, and then press ENTER:

#### sc config clussvc depend= clusnet/netman/Rpcss/w32time/msiscsi

The following results are returned:

[SC] ChangeServiceConfig SUCCESS

Appendix B:

If there will be any trouble with setting password for user 'cluster' run Domain Security Settings.

In Acount Policies->Password Policy is possibility to precise rules of passwords for users..