DHCP FAILOVER

The main goal of DHCP Failover is to provide DHCP service availability at all times on the enterprise network.

If a DHCP server is no longer reachable, the DHCP client is able to extend the lease on its current IP address by contacting another DHCP server on the enterprise network.

HOW DOES THIS WORK?

The DHCP server failover feature provides the ability to have two DHCP servers provide IP addresses and option configuration to the same subnet or scope.

The two DHCP servers replicate lease information between them, allowing one server to assume responsibility for servicing of clients for the entire subnet when the other server is unavailable.

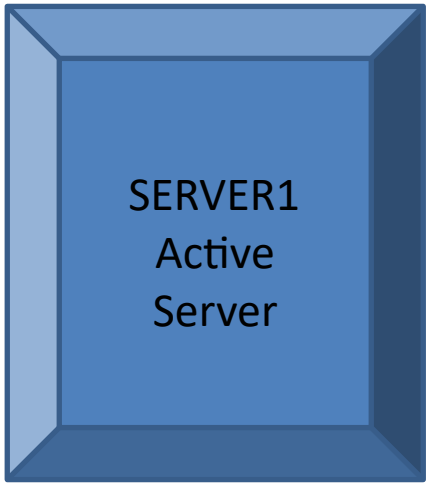
It is also possible to configure failover in a load-balancing configuration with client requests distributed between the two servers in a failover relationship

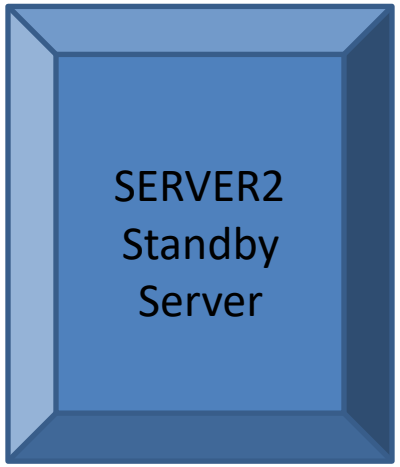
DHCP failover in Windows Server 2012 provides support for a maximum of two DHCP servers, and the failover relationship is limited to IPv4 scopes and subnets Administrators can deploy DHCP servers running Windows Server 2012 as failover

partners in either hot standby mode or load sharing mode.

Hot standby mode

- Two servers operate in a failover relationship
- One active server is responsible for leasing IP addresses and configuration information to all clients in a scope or subnet
- The secondary server assumes this responsibility if the primary server becomes unavailable.





The free Ip Address Pool is owned by free IP address pool of the active Server1. Server1 will service all the server only after the active server clients, giving Out IP addresses and transitions into **Partner Down state.** renewing leases.

The standby server will take over the

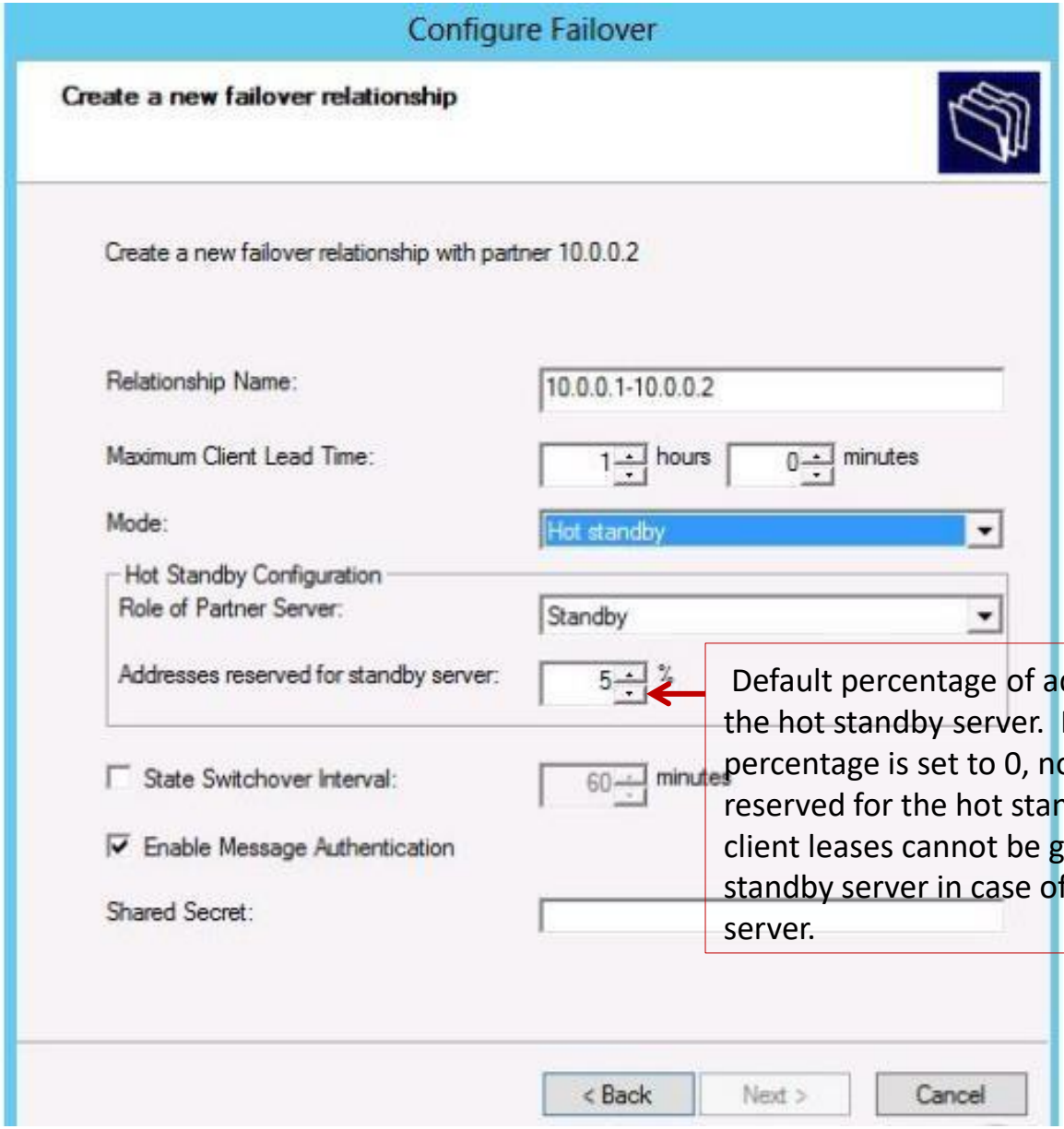
To enable the standby server to serve

new IP address leases to clients during

If there is an outage the standby server this interim period – i.e. till it needs to Start renewing or extending transitions to Partner Down and takes leases as well as giving Out IP adddesses

over the entire free IP address pool of a scope – a **percentage of free IP address pool needs to be available to**

standby server. This can be provided by the configuration parameter – **reserve address percentage**.



Default percentage of addresses reserved for the hot standby server. If address reserve percentage is set to 0, no addresses will be reserved for the hot standby server and new client leases cannot be granted by the hot standby server in case of outage of active server.

Once the active server is up, the standby server retreats into standby mode and stops responding to clients. This facilitates failback of the clients back to the active server.

Load Balance Mode

In load-balance mode of operation both the servers respond to client requests.
This is the default mode. In this mode both servers supply IP configuration to clients simultaneously. The server that responds to IP configuration requests depends on how the administrator configures the load distribution ratio. The default ratio is 50:50.

The administrator configures the MCLT parameter to determine the amount of time a DHCP server should wait when a partner is unavailable, before assuming control of the address range. This value cannot be zero, and the default is one hour

The administrator can also enable automatic transition to partner down state by configuring the auto state switchover interval.

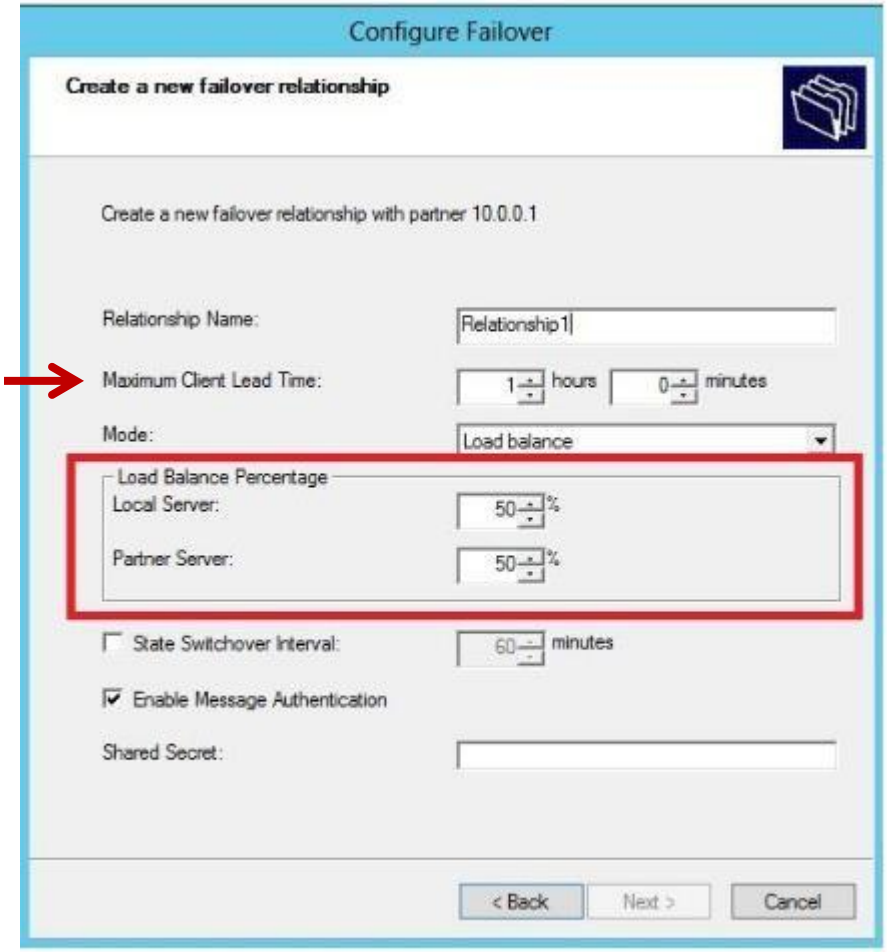
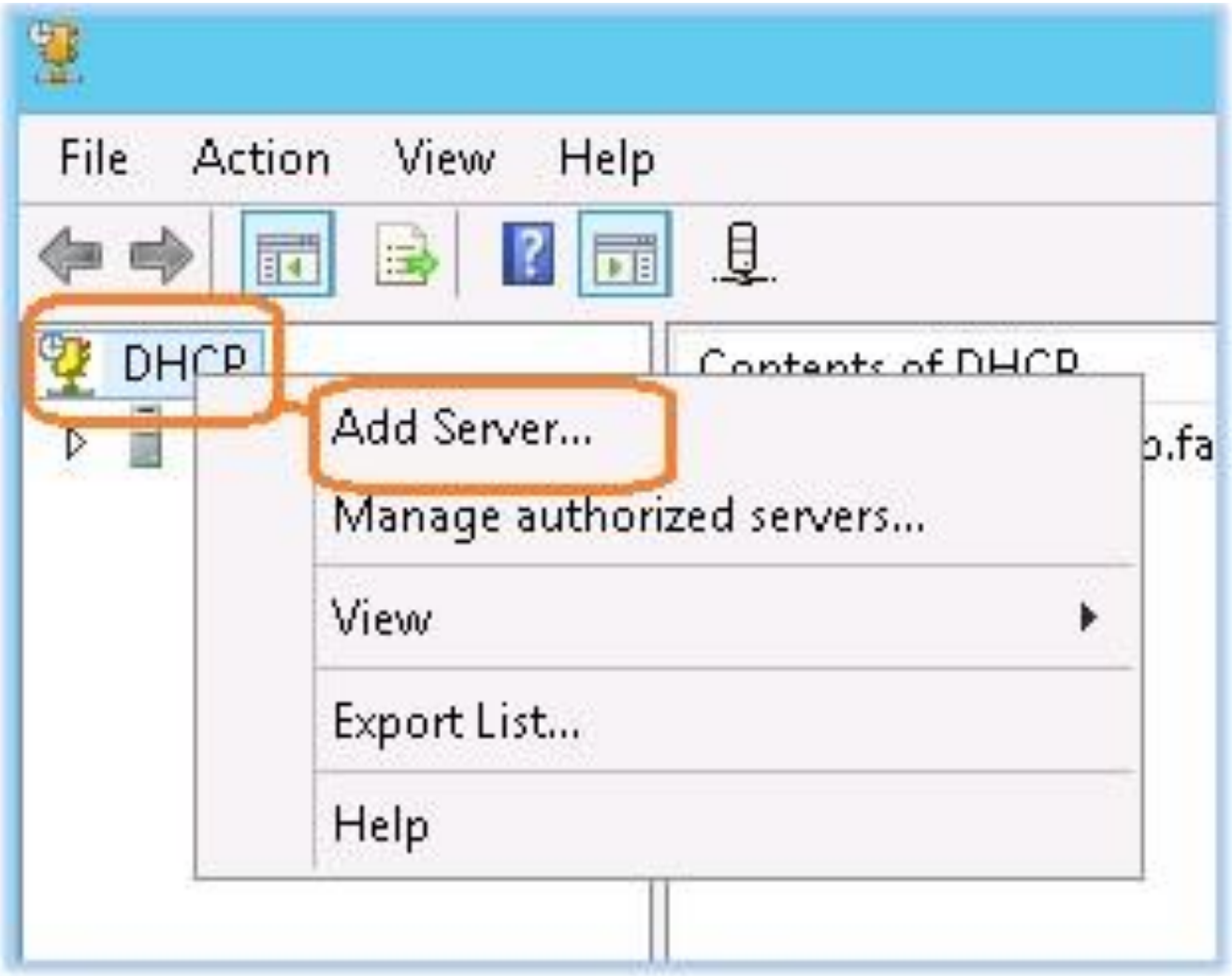
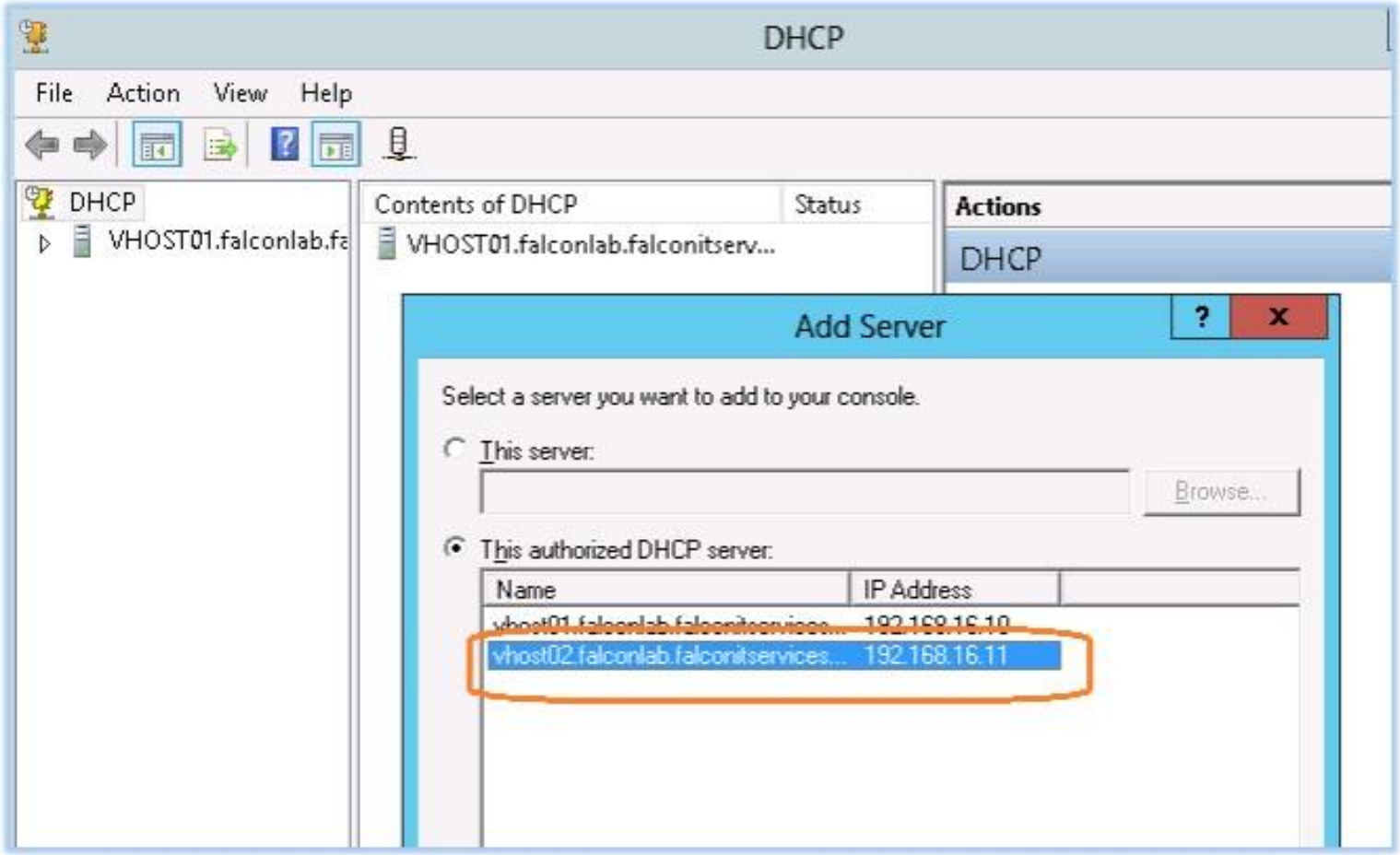


Figure 1: Load Balance Ratio in a Failover Relationship

In the DHCP manager window, right click on DHCP and select add server from the menu.

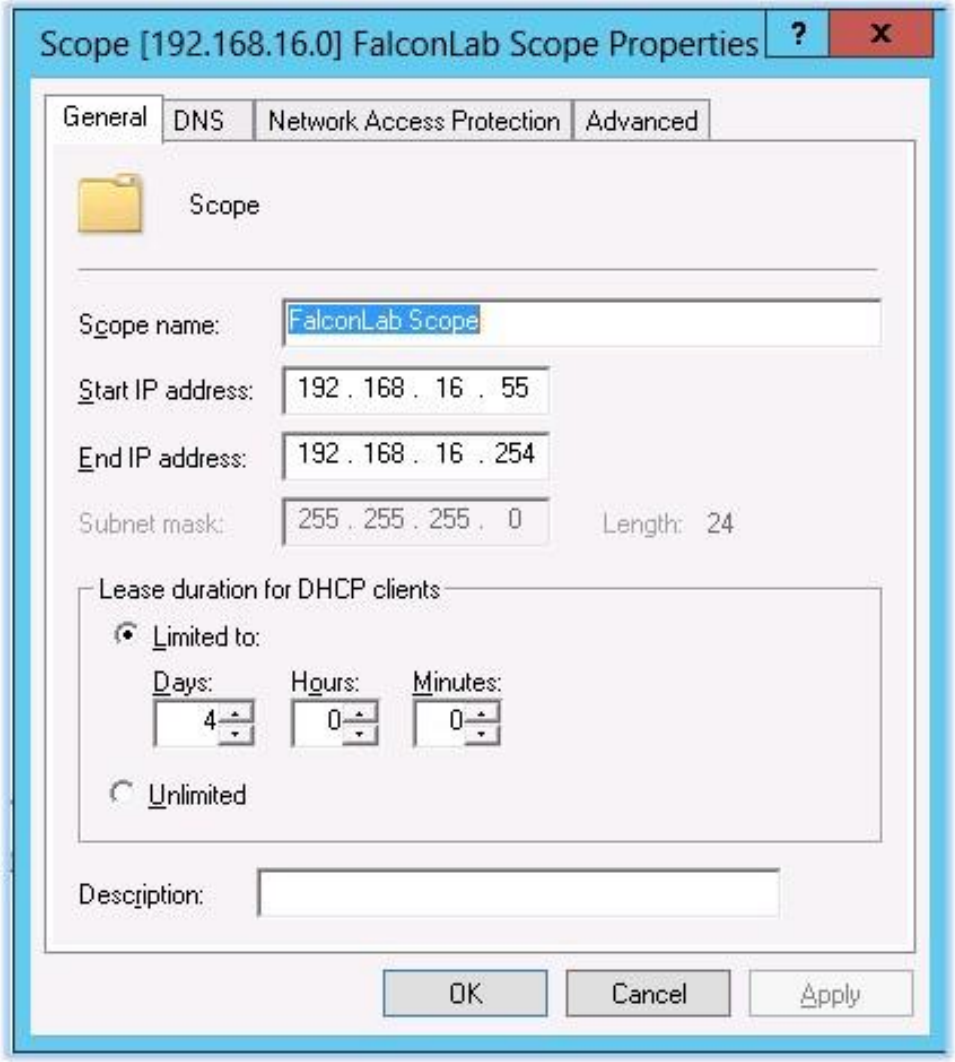


Select the secondary DHCP server to add. This will allow you to view and manage both DHCP servers from the DHCP MMC.

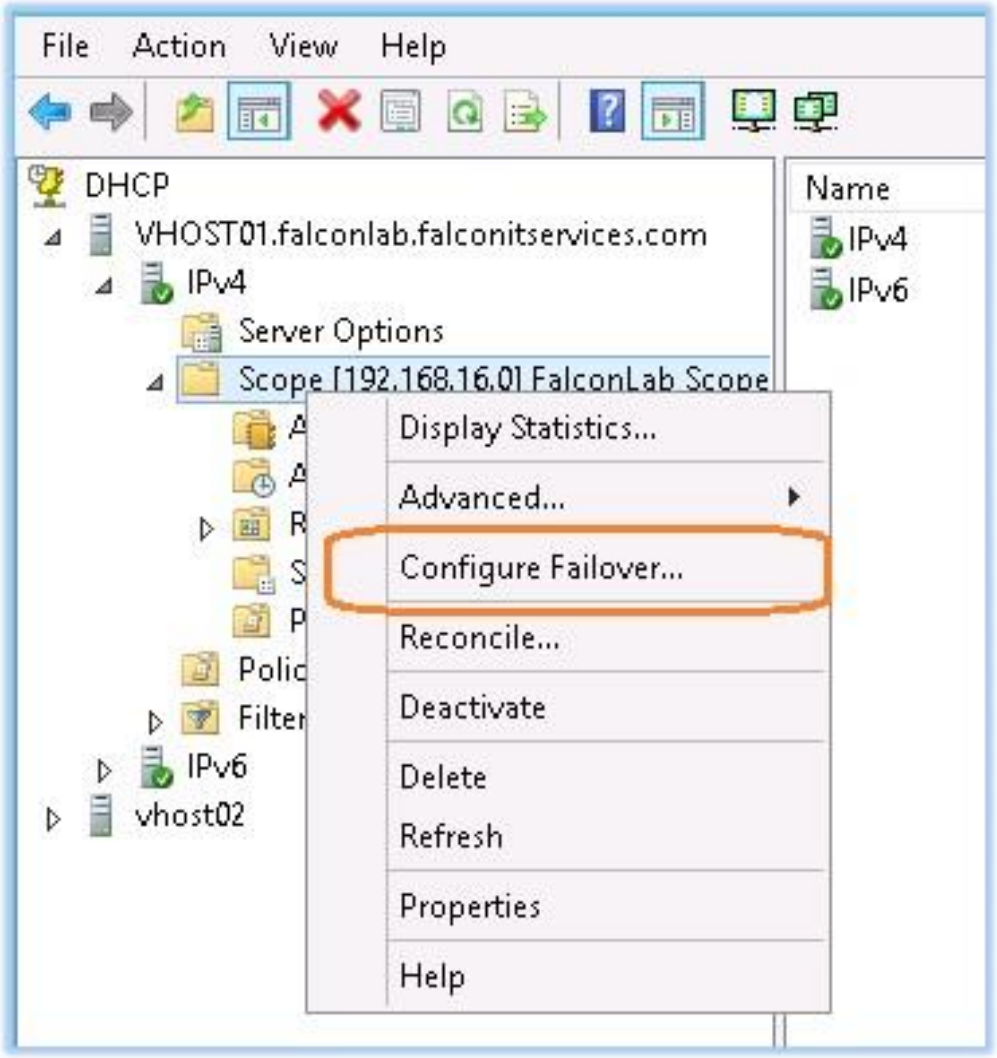

DHCP
File
Action
View
Help
DHCP
VHOST01.falconlab.fa
Contents of DHCP
Status
VHOST01.falconlab.falconitserv...
Actions
DHCP
Add Server
Select a server you want to add to your console.
This server:
Browse...
This authorized DHCP server:
Name
IP Address
vhost02.falconlab.falconitservices... 192.168.16.11

Right click on IPV4 and select new scope to configure your scope. Configure your scope options.

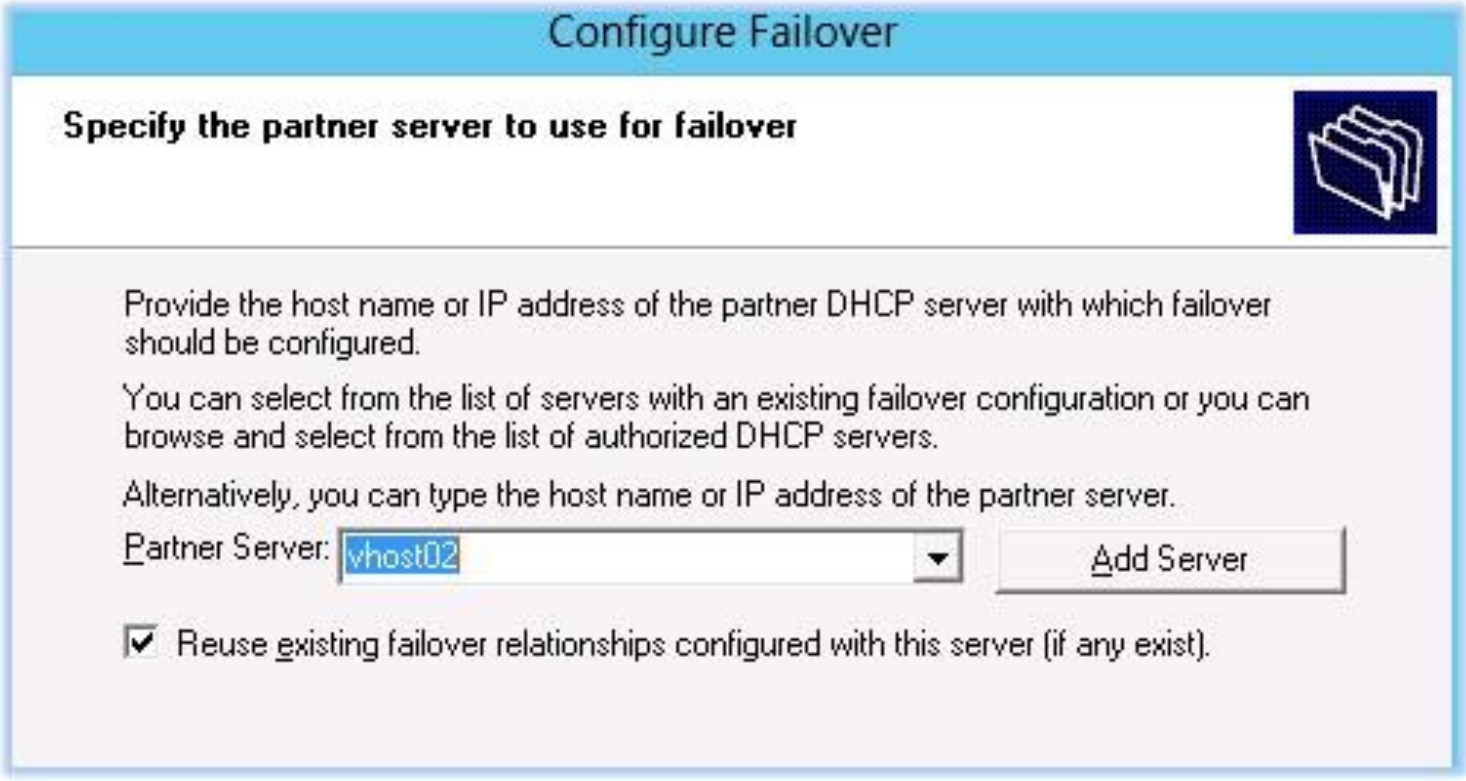
Configure the primary scope to have the entire range of leased addresses.



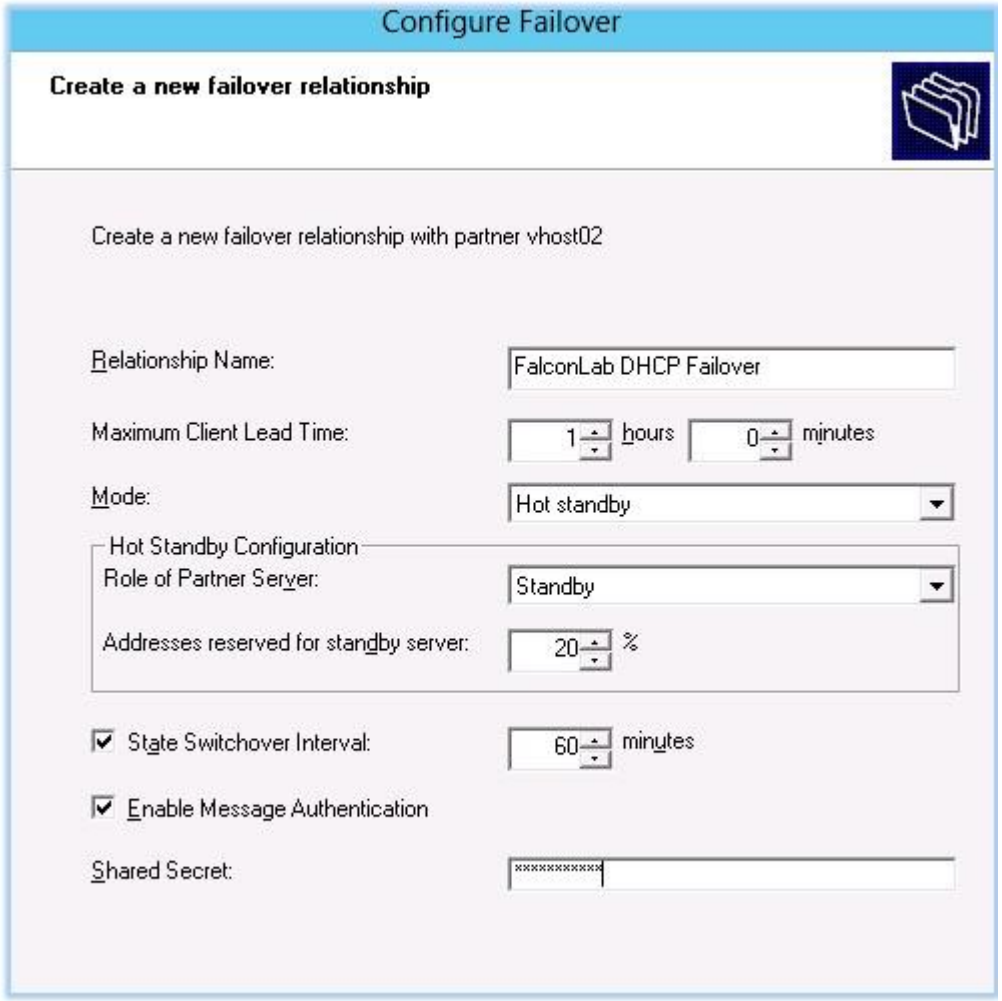
Right click on the primary server's scope and select ***configure failover***.



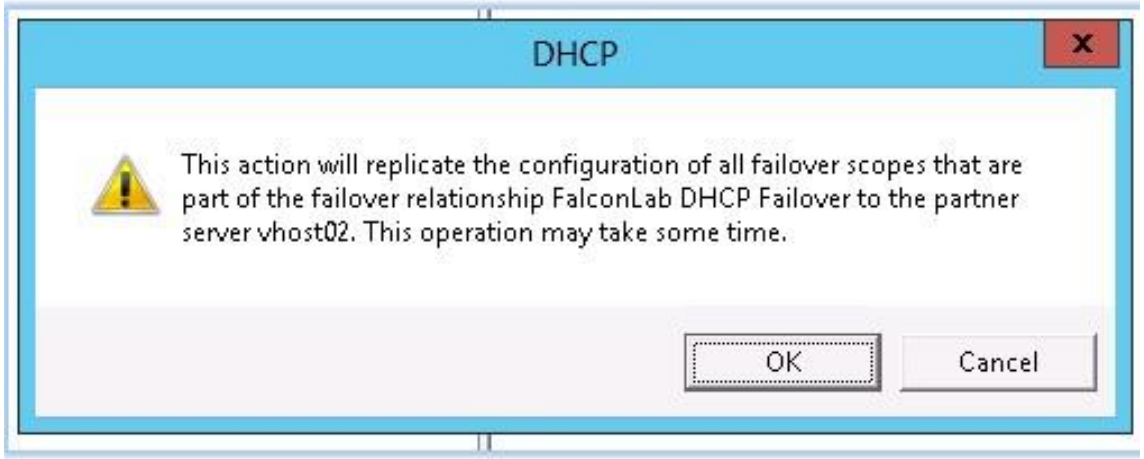
Select the secondary DHCP server as the partner server.



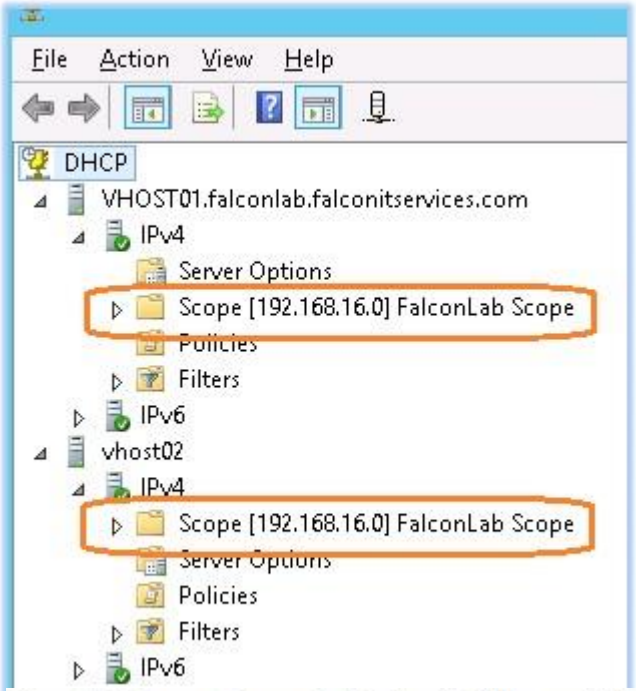
Configure your options as shown below and click next, then finish.



Right click on the primary DHCP server's scope and select *replicate relationship* and *replicate scope.*


DHCP
This action will replicate the configuration of all failover scopes that are part of the failover relationship FalconLab DHCP Failover to the partner server vhost02. This operation may take some time.
OK
Cancel

Close and re-open the DHCP manager and the scope should appear for both the primary and secondary DHCP servers.



Your DHCP scope is now fault tolerant. If the event that the primary DHCP server fails, the secondary server will lease out IP addresses.