

Re: Is it safe to use a DHCP to assign the IP addresses to the servers

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<http://www.tech-archive.net/Archive/Windows/microsoft.public.windows.server.networking/2008-09/msg00364.html>

- *From:* Meinolf Weber <meiweb(nospam)@gmx.de>
 - *Date:* Tue, 30 Sep 2008 06:20:28 +0000 (UTC)
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Hello Giuseppe,

1. Domain Controllers should not be multi-homed
2. Being a VPN Server and even simply running RRAS makes it multi-homed.
3. DNS,..even just all by itself, is better on a single homed machine.
4. Domain Controllers with the PDF Role are automatically Domain Master Browser. Master Browsers should not be multi-homed

272294 – Active Directory Communication Fails on Multihomed Domain Controllers
<http://support.microsoft.com/default.aspx?scid=kb:en-us:272294>

191611 – Symptoms of Multihomed Browsers
<http://support.microsoft.com/default.aspx?scid=kb:EN-US:191611>

Phillip Windell
www.wandtv.com

The views expressed, are my own and not those of my employer, or Microsoft, or anyone else associated with me, including my cats. -----

See also:

Multihomed DCs, DNS, RRAS servers.

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Below are the manual steps in more detail, which I had outlined in the above paragraph:

Honestly, multi-homed DCs are not recommended because of the associated issues that can occur, as you've encountered. We usually recommend purchasing an inexpensive Linksys, DLink, etc, Cable/DSL router to perform NAT for you, take out the extra NIC off the DC, but still let the DC handle DHCP (and not the router).

Little background on AD and DNS:

First, just to get this out of the way, if you have your ISP's DNS addresses in your IP configuration (DCs and clients), they need to be REMOVED.

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If the ISP's DNS is in there, this will cause additional problems.

Also, AD registers certain records in DNS in the form of SRV records that signify AD's resource and service locations. When there are multiple NICs, each NIC registers. IF a client, or another DC queries DNS for this DC, it may get the wrong record. One factor controlling this is Round Robin. If a DC or client on another subnet that the DC is not configured on queries for it, Round Robin will kick in offering one or the other. If the wrong one gets offered, it may not have a route to it. On the other hand, Subnetmask Prioritization will ensure a querying client will get an IP that corresponds to the subnet it's on, which will work. To insure everything works, stick with one NIC.

Since this DC is multi-homed, it requires additional configuration to prevent the public interface addresses from being registered in DNS. This creates a problem for internal clients locating AD to authenticate and find other services and resources such as the Global Catalog, file sharing and the SYSVOL DFS share and can cause GPO errors with Userenv 1000 events to be logged, authenticating to shares and printers, logging on takes forever, among numerous other issues.

But if you like, there are some registry changes to eliminate the registration of the external NIC. Here's the whole list of manual steps to follow.

But believe me, it's much easier to just get a separate NAT device or multihome a non-DC then having to alter the DC. – Good luck!

1. Insure that all the NICS only point to your internal DNS server(s) only and none others, such as your ISP's DNS servers' IP addresses.

2. In Network & Dialup properties, Advanced Menu item, Advanced Settings, move the internal NIC (the network that AD is on) to the top of the binding order (top of the list).

3. Disable the ability for the outer NIC to register. The procedure, as mentioned, involves identifying the outer NIC's GUID number. This link will show you how:

246804 – How to Enable–Disable Windows 2000 Dynamic DNS Registrations (per NIC too):

<http://support.microsoft.com/?id=246804>

4. Disable NetBIOS on the outside NIC. That is performed by choosing to disable NetBIOS in IP Properties, Advanced, and you will find that under the "WINS" tab. You may want to look at step #3 in the article to show you how to disable NetBIOS on the RRAS interfaces if this is a RRAS server.

296379 – How to Disable NetBIOS on an Incoming Remote Access Interface [Registry Entry]:

<http://support.microsoft.com/?id=296379>

Note: A standard Windows service, called the "Browser service", provides the list of machines, workgroup and domain names that you see in "My Network Places" (or the legacy term "Network Neighborhood"). The Browser service relies on the NetBIOS service. One major requirement of NetBIOS service is a machine can only have one name to one IP address. It's sort of a fingerprint. You can't have two brothers named Darrell. A multihomed machine will cause duplicate name errors on itself because Windows sees itself with the same name in the Browse List (My Network Places), but with different IPs. You can only have one, hence the error generated.

5. Disable the "File and Print Service" and disable the "MS Client Service" on the outer NIC. That is done in NIC properties by unchecking the respective service under the general properties page. If you need these services on the outside NIC (which is unlikely), which allow other machines to connect to your machine for accessing resource on your machine (shared folders, printers, etc.), then you will probably need to keep them

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enabled.

6. Uncheck "Register this connection" under IP properties, Advanced settings, "DNS" tab.

7. Delete the outer NIC IP address, disable Netlogon registration, and manually create the required records

a. In DNS under the zone name, (your DNS domain name), delete the outer NIC's IP references for the "LdapIpAddress". If this is a GC, you will need to delete the GC IP record as well (the "GcIpAddress"). To do that, in the DNS console, under the zone name, you will see the _msdcs folder. Under that, you will see the _gc folder. To the right, you will see the IP address referencing the GC address. That is called the GcIpAddress. Delete the IP addresses referencing the outer NIC.

i. To stop these two records from registering that information, use the steps provided in the links below:

Private Network Interfaces on a Domain Controller Are Registered in

DNS <http://support.microsoft.com/?id=295328>

ii. The one section of the article that disables these records is done with this registry entry:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters

(Create this Multi-String Value under it):

Registry value: DnsAvoidRegisterRecords

Data type: REG_MULTI_SZ

Values: LdapIpAddress

GcIpAddress

iii. Here is more information on these and other Netlogon Service records:

Restrict the DNS SRV resource records updated by the Netlogon service

[including GC]:

<http://www.microsoft.com/technet/treeview/default.asp?url=/technet/prodtechnol/windowsserver2003/proddocs/standa>

b. Then you will need to manually create these two records in DNS with the IP addresses that you need for the DC. To create the

LdapIpAddress, create a new host under the domain, but leave the "hostname" field blank, and provide the internal IP of the DC, which results in a record that looks like:

(same as parent) A 192.168.5.200 (192.168.5.200 is used for illustrative purposes)

i. You need to also manually create the GcIpAddress as well, if this is a GC. That would be under the _msdcs._gc SRV record under the zone. It is created in the same fashion as the LdapIpAddress mentioned above.

8. In the DNS console, right click the server name, choose properties, then under the "Interfaces" tab, force it only to listen to the internal NIC's IP address, and not the IP address of the outer NIC.

9. Since this is also a DNS server, the IPs from all NICs will register, even if you tell it not to in the NIC properties. See this to show you how to stop that behavior (this procedure is for Windows 2000, but will also work for Windows 2003):

275554 – The Host's A Record Is Registered in DNS After You Choose Not to Register the Connection's

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Address:

<http://support.microsoft.com/?id=275554>

10. If you haven't done so, configure a forwarder. You can use 4.2.2.2 if not sure which DNS to forward to until you've got the DNS address of your ISP.

How to set a forwarder? Good question. Depending on your operating system, choose one of the following articles:

300202 – HOW TO: Configure DNS for Internet Access in Windows 2000

<http://support.microsoft.com/?id=300202&FR=1>

323380 – HOW TO: Configure DNS for Internet Access in Windows Server 2003 (How to configure a forwarder):

<http://support.microsoft.com/d/id?=323380>

Active Directory communication fails on multihomed domain controllers

<http://support.microsoft.com/kb/272294>

<==*** Some additional reading ***==>

More links to read up and understand what is going on:

292822 – Name Resolution and Connectivity Issues on Windows 2000 Domain Controller with Routing and Remote Access and DNS Insta {DNS and RRAS and unwanted IPs registering]:

<http://support.microsoft.com/?id=292822>

Active Directory communication fails on multihomed domain controllers

<http://support.microsoft.com/kb/272294>

246804 – How to enable or disable DNS updates in Windows 2000 and in Windows Server 2003

<http://support.microsoft.com/?id=246804>

295328 – Private Network Interfaces on a Domain Controller Are Registered in DNS

[also shows DnsAvoidRegisterRecords LdapIpAddress to avoid reg sameasparent private IP]:

<http://support.microsoft.com/?id=295328>

306602 – How to Optimize the Location of a DC or GC That Resides Outside of a Client's Site [Includes info LdapIpAddress and GcIpAddress information and the SRV mnemonic values]:

<http://support.microsoft.com/?id=306602>

825036 – Best practices for DNS client settings in Windows 2000 Server and in Windows Server 2003

(including how-to configure a forwarder): <http://support.microsoft.com/default.aspx?scid=kb:en-us:825036>

291382 – Frequently asked questions about Windows 2000 DNS and Windows Server 2003 DNS

<http://support.microsoft.com/?id=291382>

296379 – How to Disable NetBIOS on an Incoming Remote Access Interface [Registry Entry]:

<http://support.microsoft.com/?id=296379>

Rid Pool Errors and other multihomed DC errors, and how to configure a multihomed DC, Ace Fekay, 24 Feb 2006 <http://www.ureader.com/message/3244572.aspx>

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Regards,
Ace

This posting is provided "AS-IS" with no warranties or guarantees and confers no rights.

Ace Fekay, MCSE 2003 & 2000, MCSA 2003 & 2000, MCSE+I, MCT, MVP
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Microsoft Certified Trainer

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Instead of the website you're using, try using OEx (Outlook Express or any other newsreader), and configure a news account, pointing to news.microsoft.com. Anonymous access. It's free – no username or password required nor do you need a Newsgroup Usenet account with your ISP. It connects directly to the Microsoft Public Newsgroups. OEx allows you to easily find, track threads, cross-post, sort by date, poster's name, watched threads or subject. It's easy:

How to Configure OEx for Internet News
<http://support.microsoft.com/?id=171164>

Best regards

Meinolf Weber

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In my company we have at least 300 servers that are installed and managed by different people.

Sometime It happens that the person that installs the server forgets something when configuring the TCP/IP section of the network card; some

examples are:

They forget to configure the wins

They write a wrong wins address

They assign to the server an IP address that is out of our standard range

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So I was thinking to use the DHCP to deploy the TCP/IP configuration (Using a reservation to make the IP address ever the same).

I would like to know in your experience if this is a good way or if it is better to avoid this solution; what are the pros and the cons and if it is worth doing it.

Some drawbacks I have been told are the following:

1) if the DHCP fails we will not be able any more to access all the servers.

A solution could be a redundant DHCP structure (2 or more DHCP servers) and

to configure the "Alternate configuration" of the network card

2) If we have two network cards in teaming and one of them fails the server

will be no more work.

In my knowkedge if we have a team the only mac address that cares is the

Team mac address that is a software mac address so I should not have problems

3) I could have problems with multihomed computers

(I don't understand why; each computer should take its IP from the segment

it is connected to)

4) I can only assign one IP address

This is true but It is not a common scenario (and we can configure taht

machine manually)