

# Storageflex

NETWORK DATA STORAGE SOLUTIONS

## Using Microsoft Active Directory (AD) with HA3969U in Windows Server

Application Note

### ***Abstract***

This application note describes how to use Microsoft Active Directory (AD) service with HA3969U systems in Windows Server environments.



## **Table of Contents**

<b>Product Models Covered by This Document</b> .....	<b>3</b>
<b>HA3969U Family of Unified Storage Systems</b> .....	<b>4</b>
<b>Using Microsoft Active Directory (AD) with HA3969U</b>	
<b>Systems in Windows Server</b> .....	<b>5</b>
<i>Step 1: Preparing the Environment</i> .....	6
<i>Step 2: Verifying AD Server DNS</i> .....	10
<i>Step 3: Configuring AD User Account Settings for Import into HA3969U</i> .....	18
<i>Step 4: Adding AD server to HA3969U</i> .....	19
<i>Step 5: Importing Users from AD Server</i> .....	22
<i>Step 6: Allowing Users to Access Folders</i> .....	23
<b>Appendix</b> .....	<b>25</b>
<i>HA3969U System Recovery Procedure</i> .....	25
<i>Troubleshooting</i> .....	25



## **Product Models Covered by This Document**

This document applies to the following product models:

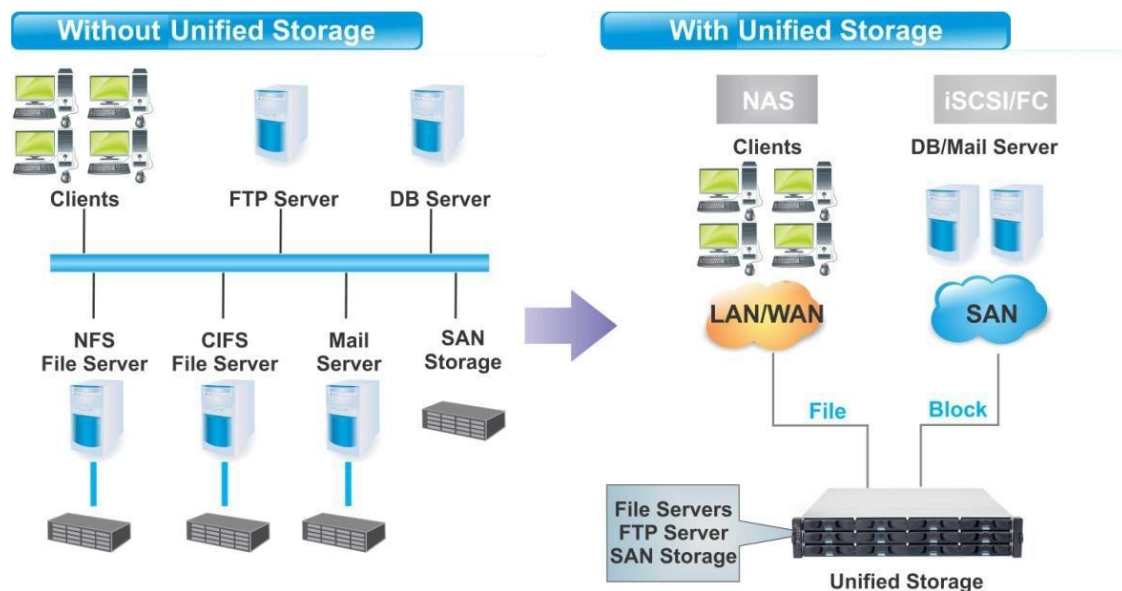
- **HA3969U 12 Bay Single Controlled**
- **HA3969U 12 Bay Dual Controlled**
- **HA3969U 16 Bay Single Controlled**
- **HA3969U 16 Bay Dual Controlled**

For more information about deduplication (dedupe), compression, virtualization, snapshot, remote replication, ZFS, backup, storage, network-attached-storage, file-sharing and WORM (Write Once, Read Many), please consult the HA3969U User Manual.

## HA3969U Family of Unified Storage Systems

IT environments often feature multiple types of storage infrastructures to accommodate various types of data and achieve different service levels. The scattered boxes for DAS (Direct-Attached Storage), SAN (Storage Area Network) and NAS (Network-Attached Storage) configurations lead to poor utilization and complicated management.

Storageflex HA3969U simultaneously serves file and block-based applications with a unified storage platform, and features easy management, optimized resource utilization, high availability, flexible scalability and competitive price/performance. In addition, HA3969U offers a comprehensive set of advanced software features at no additional costs. HA3969U systems help businesses effectively meet diverse and changing data demand while staying within budget.





## Using Microsoft Active Directory (AD) with HA3969U Systems in Windows Server

Microsoft Active Directory (AD) in Windows Server environments is a directory service designed for data management and resource distribution on network environments. Microsoft AD allows storing and sharing data, configuring storage parameters, and managing account information from a central location.

Using Microsoft AD with HA3969U systems offers the following benefits:

- **Simplified account management**  
The same Microsoft AD account name and password can be used for HA3969U; there is no need to manage separate sets of account information.
- **Consolidated access control**  
Read/write rights to shared directories on the network can be controlled from the HA3969U.
- **Enhanced security**  
HA3969U can also benefit from the enhanced data protection protocol integrated in Microsoft AD.

The HA3969U systems are compatible with Microsoft AD for the following versions of Windows OS:

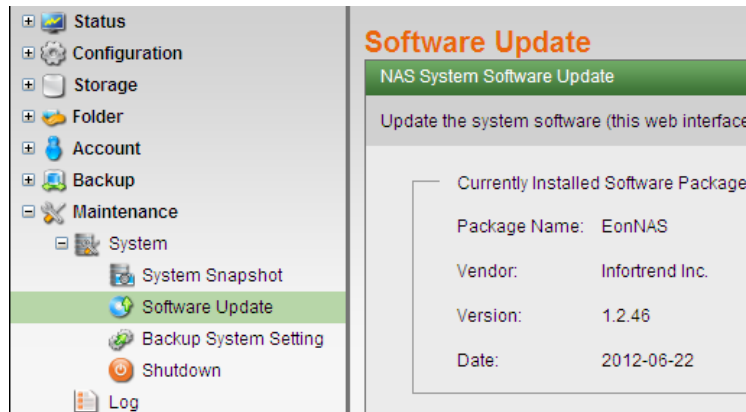
- **Windows Server 2003, 2003 R2**
- **Windows Server 2008, 2008 R2**
- **Windows Server 2012**

## Step 1: Preparing the Environment

### 1.1 Confirm the HA3969U software version.

The procedure described in this application note is applicable to software version 1.2.46 or later. To check the software version and update it (if necessary), follow these steps.

Go to *Maintenance > System > Software Update*.



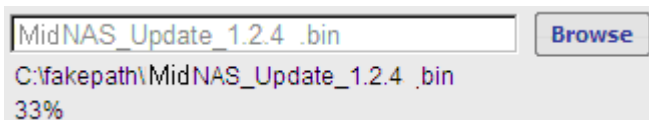
Check the software version in the *Currently Installed Software Package* corner.

- If the version is 1.2.46 or later, jump to Section 1.2 and continue from there.
- If the version is older than 1.2.46, update the software to the latest version following these steps.

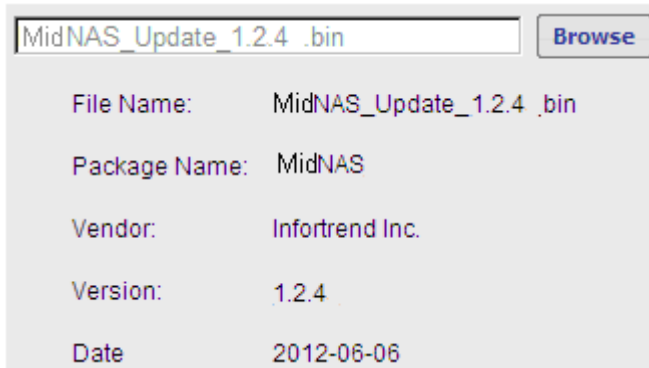
1. Obtain the latest software file from your vendor and store it in your computer.
2. Click the *Browse* button to select the downloaded software file.



3. Click the *Upload to NAS* button to upload the software file into your NAS system. The upload progress will appear.



4. When uploading the software has been completed (a message will appear), the new software package information will appear in the screen.

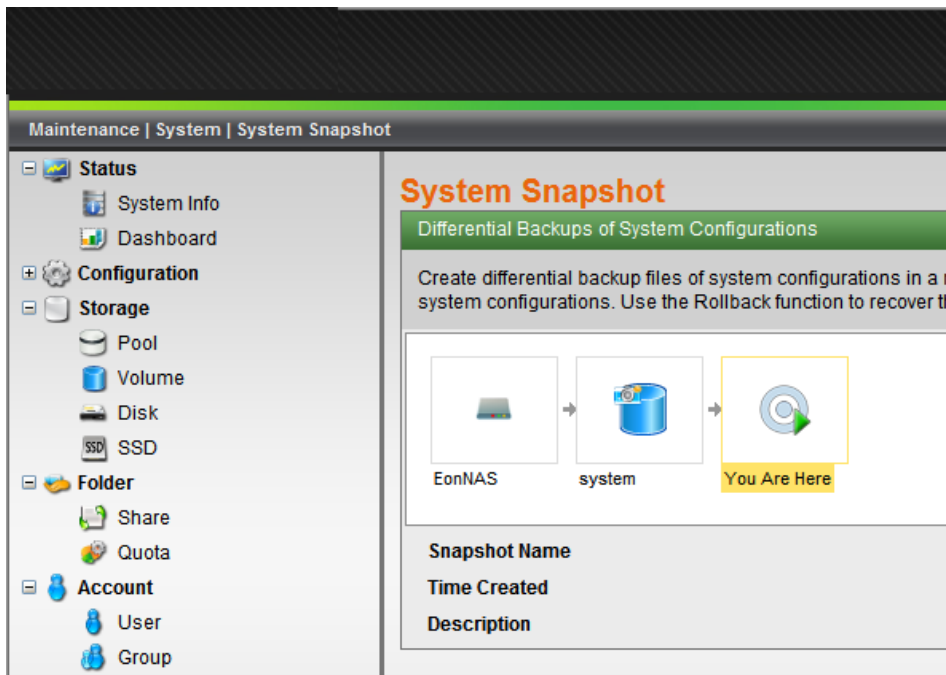


5. Click the *Install* button to install the software file. The NAS system will reboot after the new version is installed.
6. Close the browser, open it, and log into the NAS system again (it might take several minutes before the NAS system gets back online.)

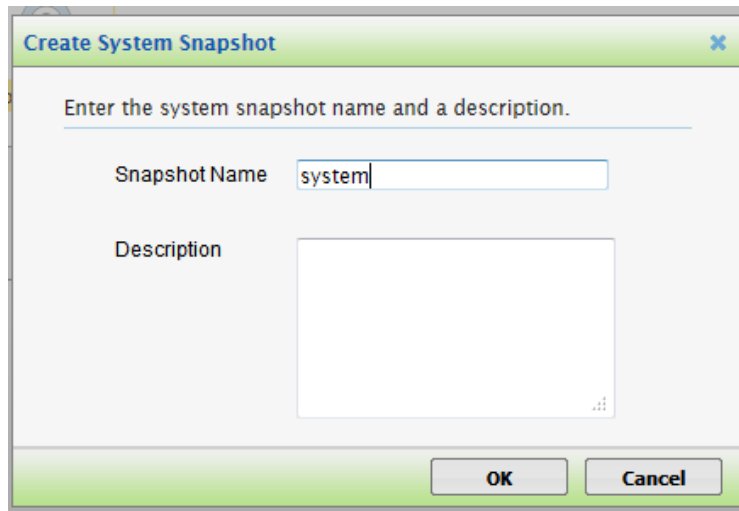
### 1.2 Take an HA3969U system snapshot.

This snapshot image will be of use in case the HA3969U system encounters errors during user import.

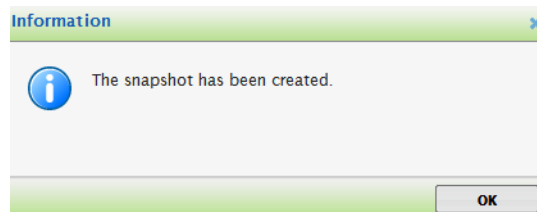
Go to *Maintenance > System > System Snapshot*.



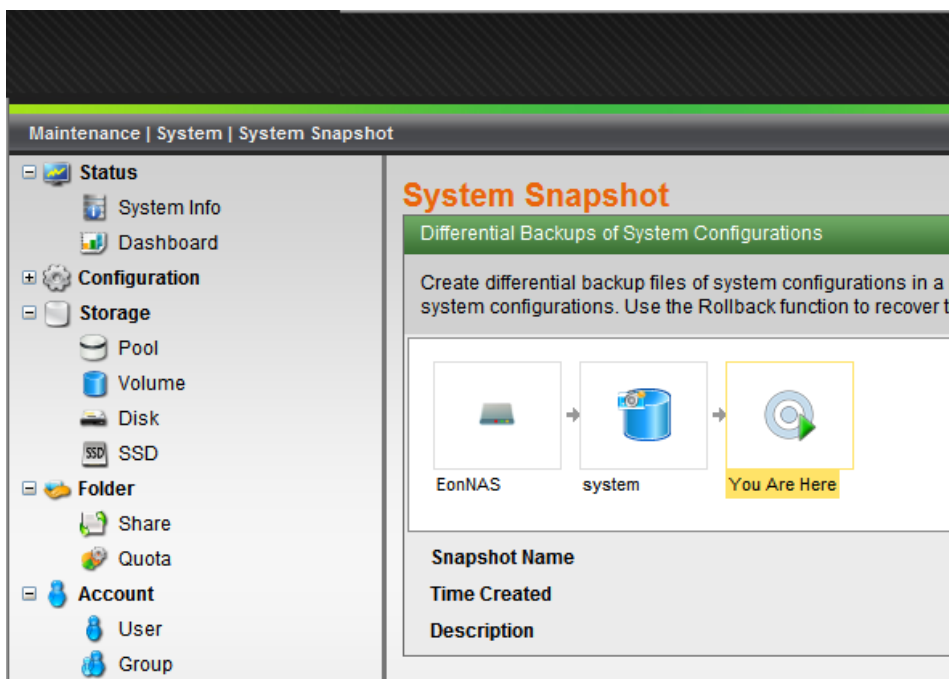
Click on *Take Snapshot*. Enter a snapshot name and add a description.



Click on *OK*.



After creation, the snapshot can be found in the system snapshot list.



In the event this system snapshot has to be used (system recovery), this recovery will require a short amount of downtime in the form of an HA3969U system reboot. Make sure to properly plan this recovery so that the reboot downtime does not interfere with business applications. For more information about system recovery, please refer to the [Appendix](#).





1.3 The HA3969U and AD server should be synchronized, with a time difference of no more than 5 minutes. To check the date/time settings of the HA3969U, go to *Configuration > System > Date/Time* in the HA3969U GUI.

#### 1.4 Conduct a Test Run

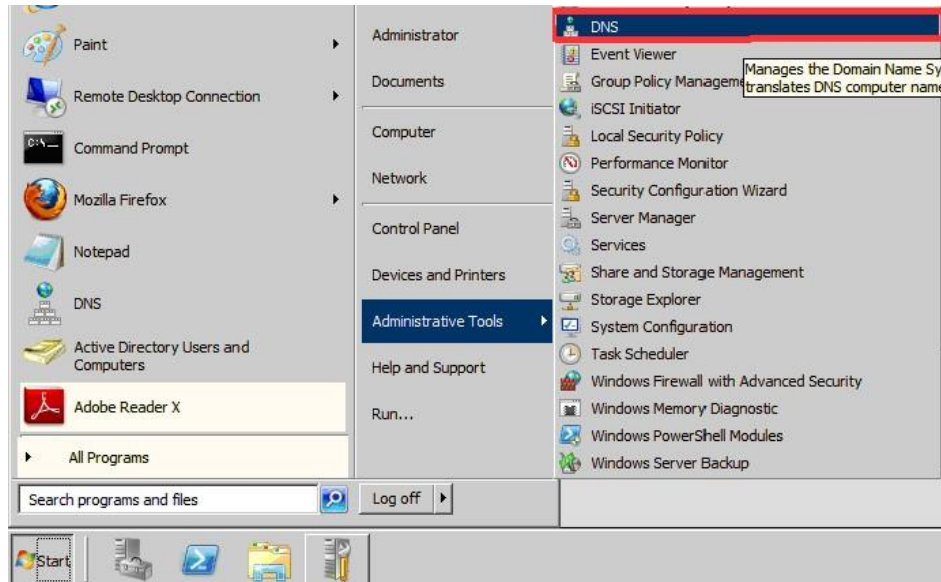
Prepare a test AD server to conduct a practice run before doing the configurations on the operational AD server. In this way, users can ensure that the configurations highlighted in this document work in their specific environments and avoid any damage from unexpected errors that may occur when doing these configurations for the first time.

- This AD server should include all user accounts.
- This AD server will be the target server for HA3969U.

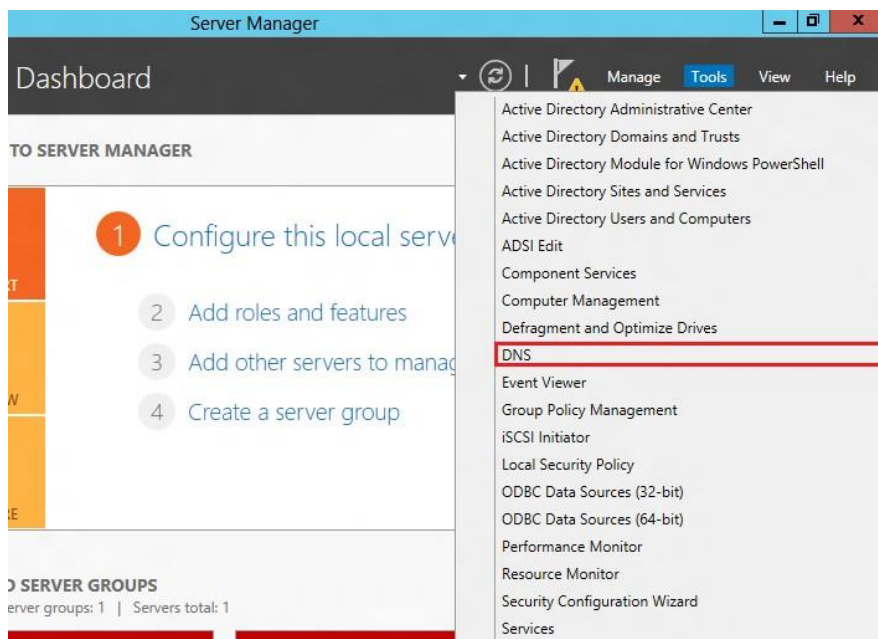
## Step 2: Verifying AD Server DNS

### 2.1 Open DNS Manager.

(Windows Server 2003/2008) Go to *Start > Administrative Tools > DNS*.

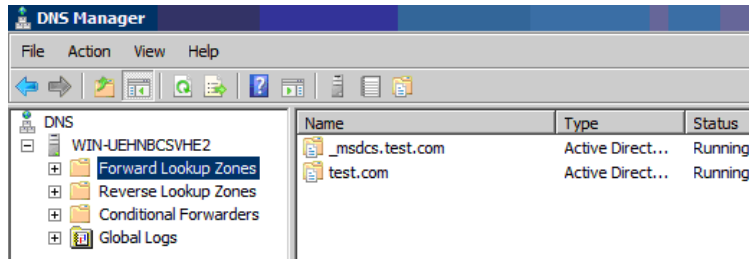


(Windows Server 2012) Open *DNS Manager* by going to *Tools > DNS*.

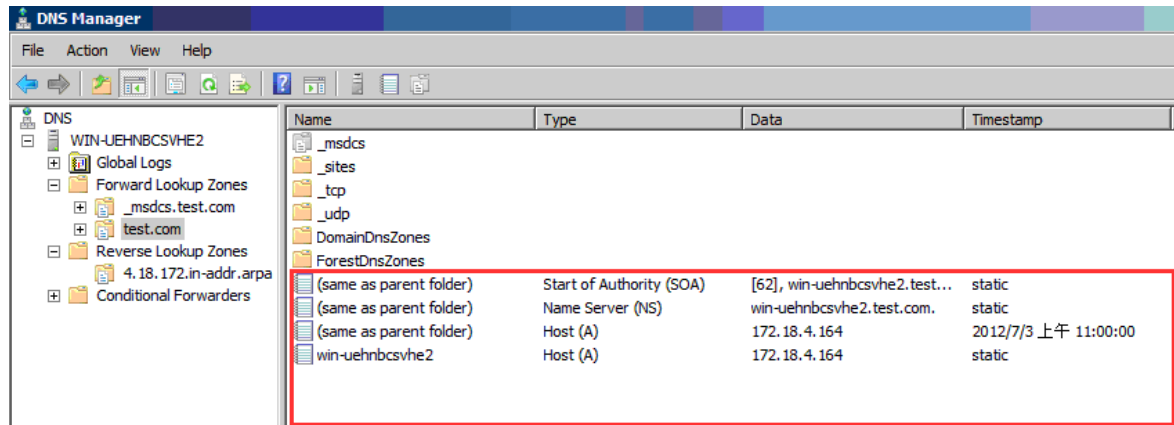


### 2.2 Check the forward lookup zone.

The DNS Manager will appear. Locate the DNS server and expand the tree in the sidebar.



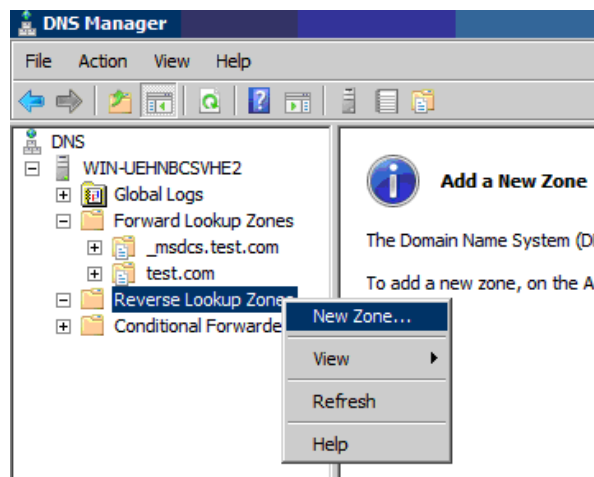
Check the AD server IP settings in the *Forward Lookup Zones*. In this example, the IP address is *172.18.4.164*.



- Start of Authority (SOA): Make sure this item is included in the list.
- Name Server (NS): Make sure this item is included in the list.
- Host (A): The IP address must match that of the AD server.

### 2.3 Add a reverse lookup zone.

Add a zone in *Reverse Lookup Zones* by right-clicking and selecting *New Zone*, as shown below.

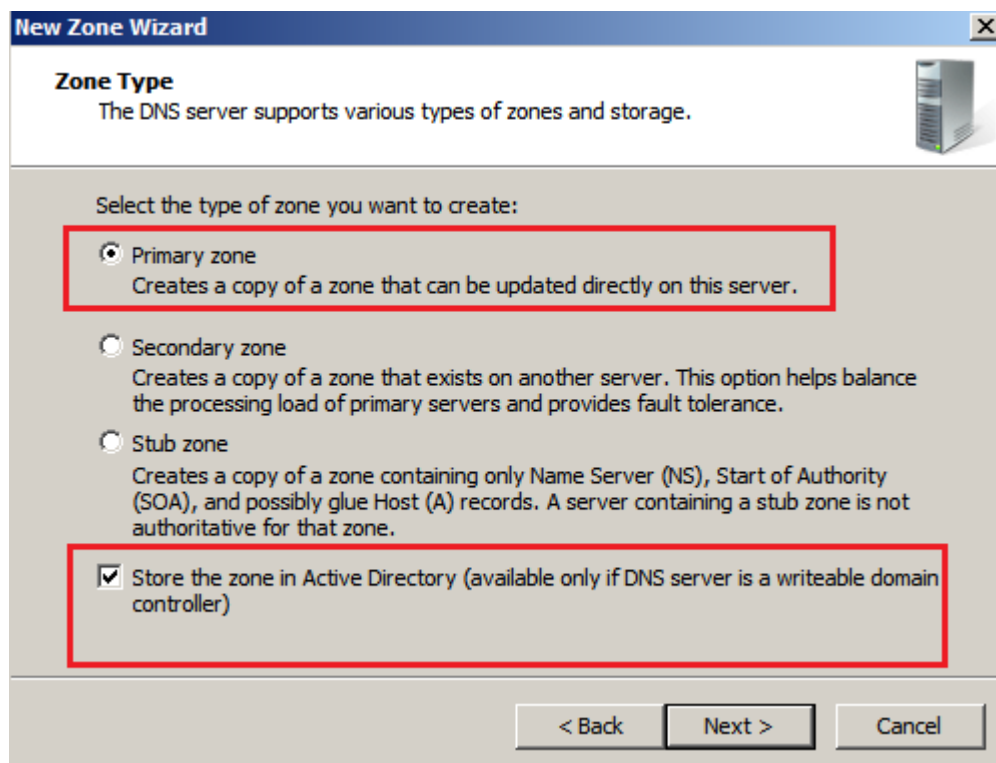


The *New Zone Wizard* will appear. Click *Next* to proceed.



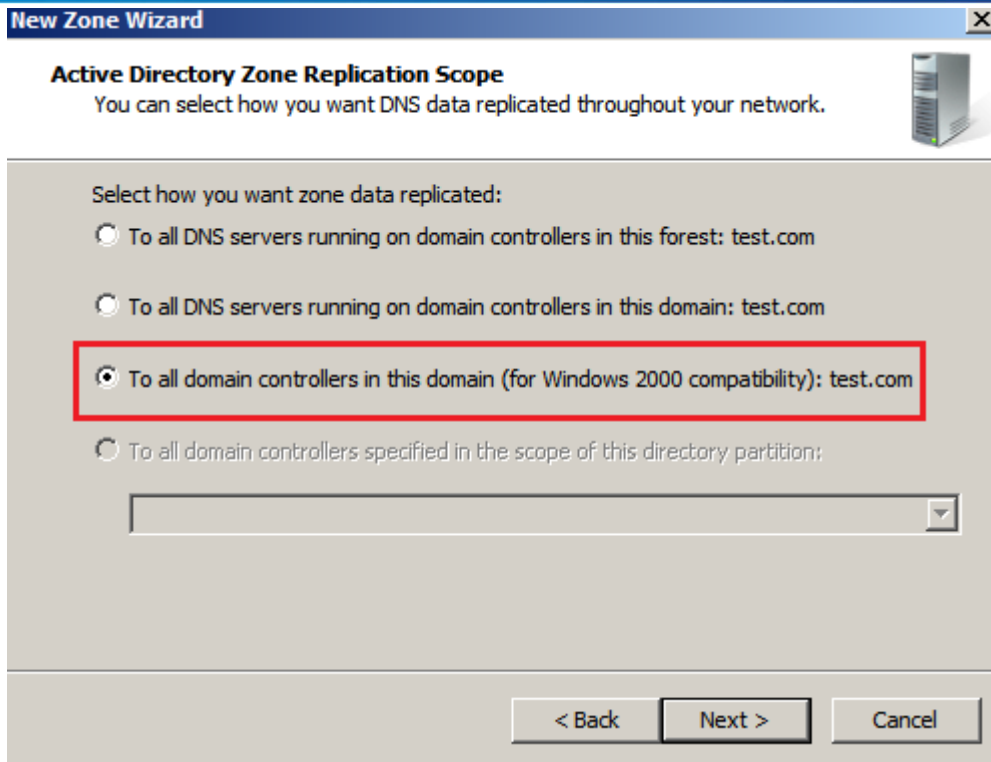
Select the following options and click *Next*:

- **Primary zone**
- **Store the zone in Active Directory**



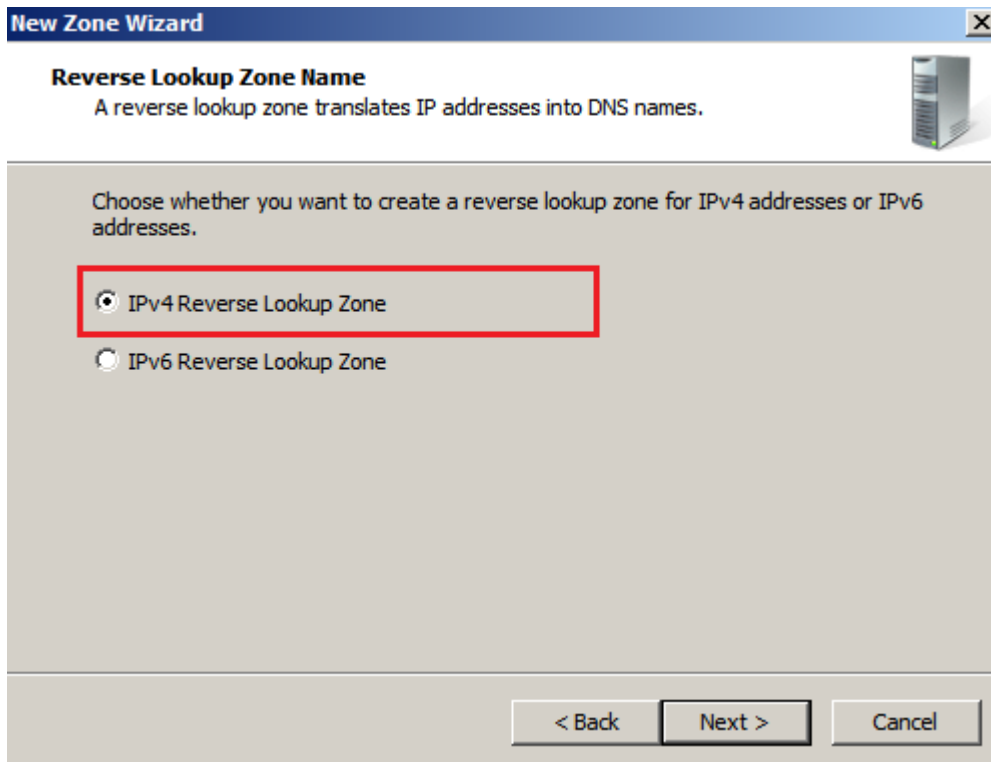
Select the following option and click *Next*:

- **To all domain controllers in this domain**

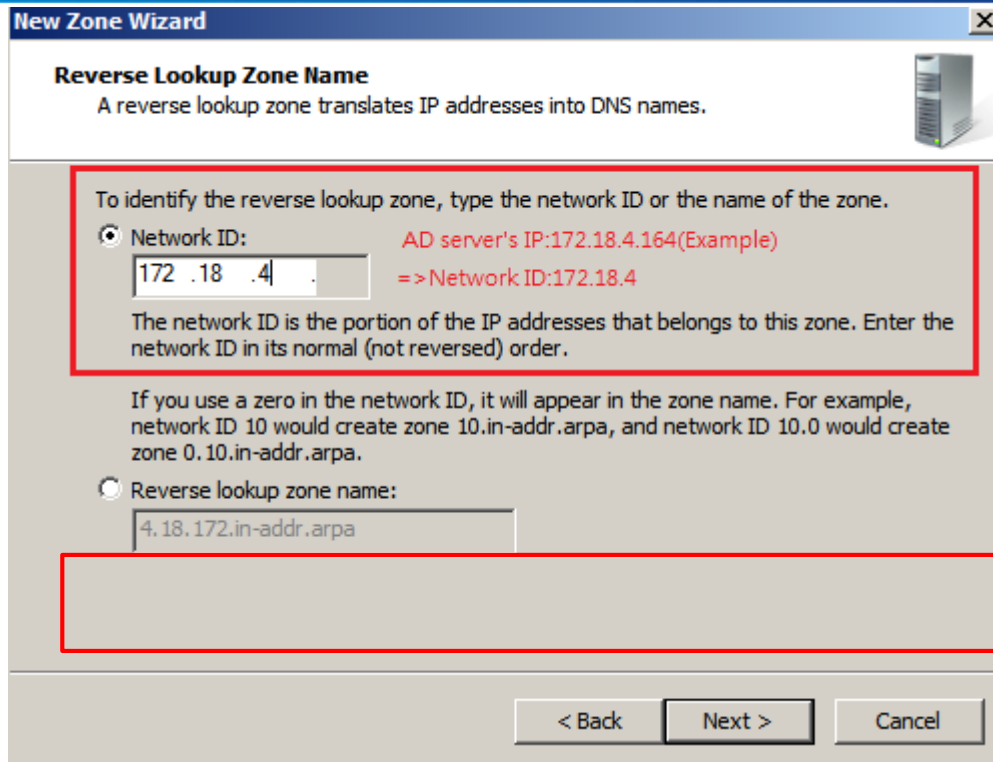


(For Windows Server 2008/2012) Select the following option and click *Next*:

- **IPv4 Reverse Lookup Zone**

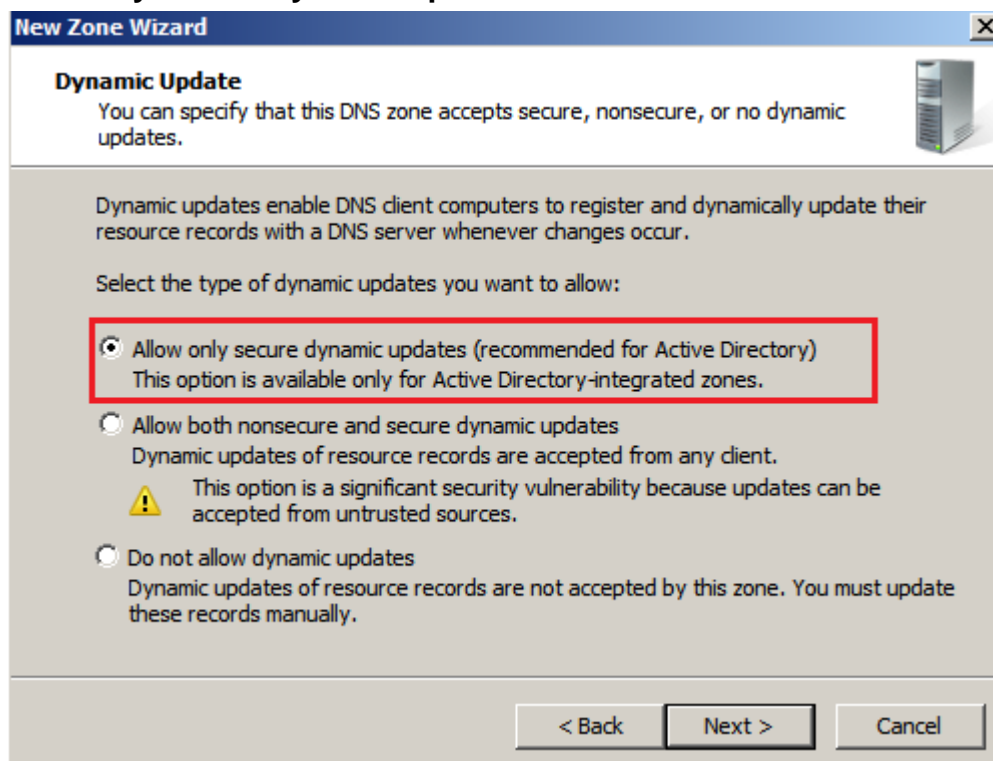


Enter the first three portions of the server's IP address as the Network ID and click *Next*.

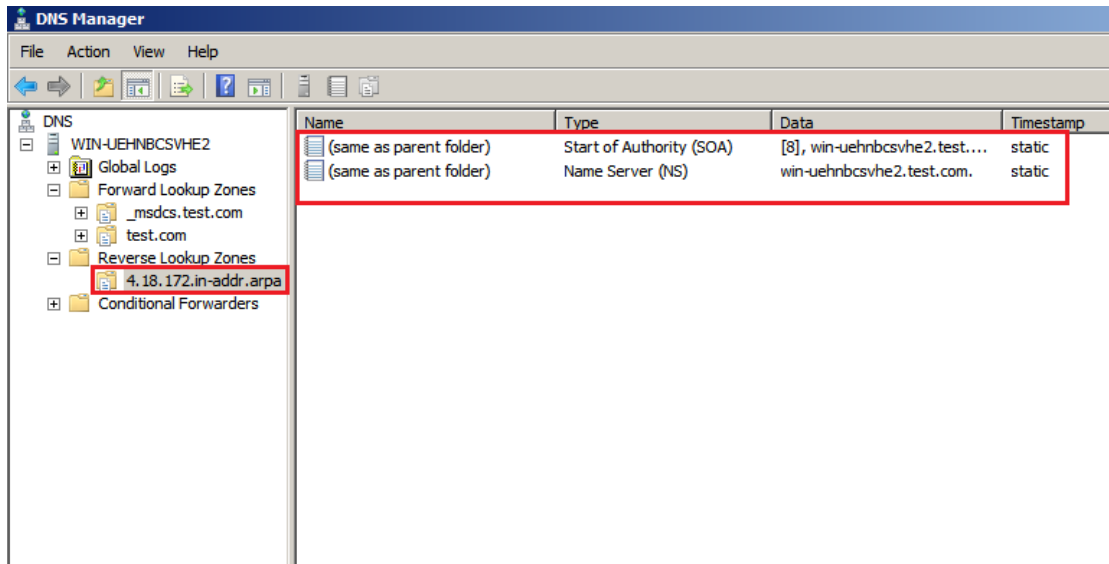


Select the following option and click *Next*:

- **Allow only secure dynamic updates**



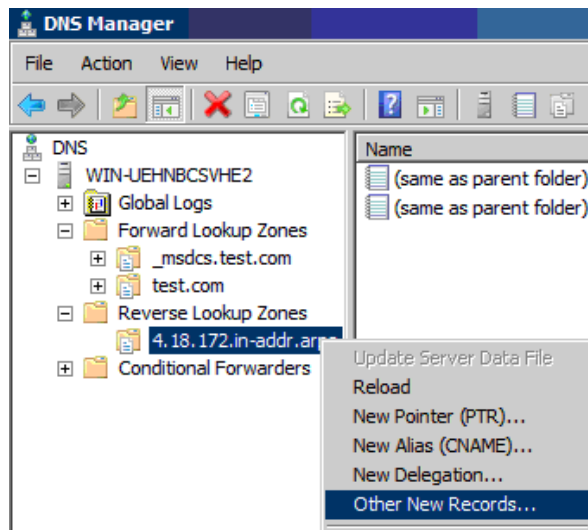
The reverse lookup zone will appear in the DNS Manager. Confirm the settings on the screen.



- Start of Authority (SOA): Make sure this item is included in the list.
- Name Server (NS): Make sure this item is included in the list.

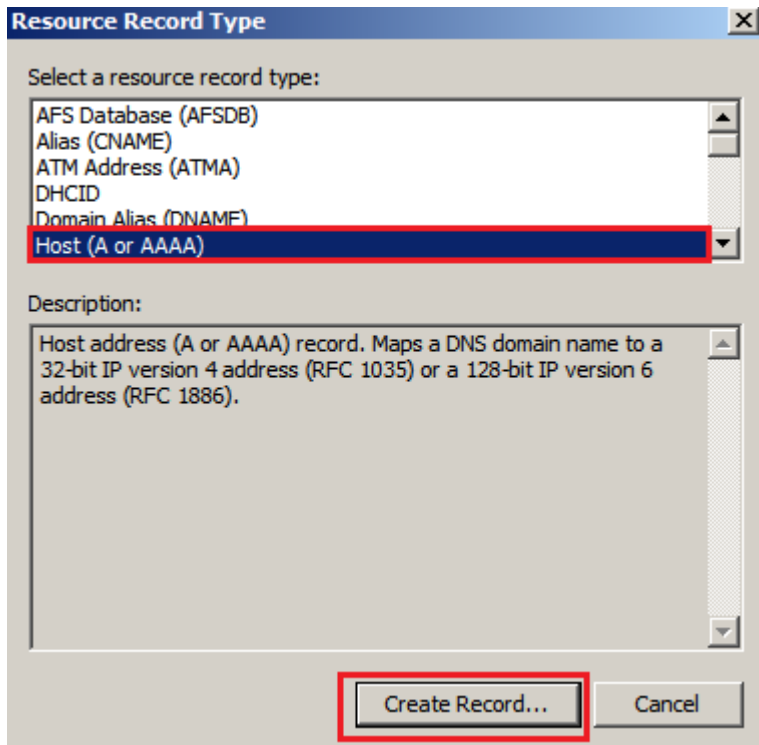
#### 2.4 Create a host record in the reverse lookup zone.

Right-click on the newly created reverse lookup zone and select *Other New Records*.

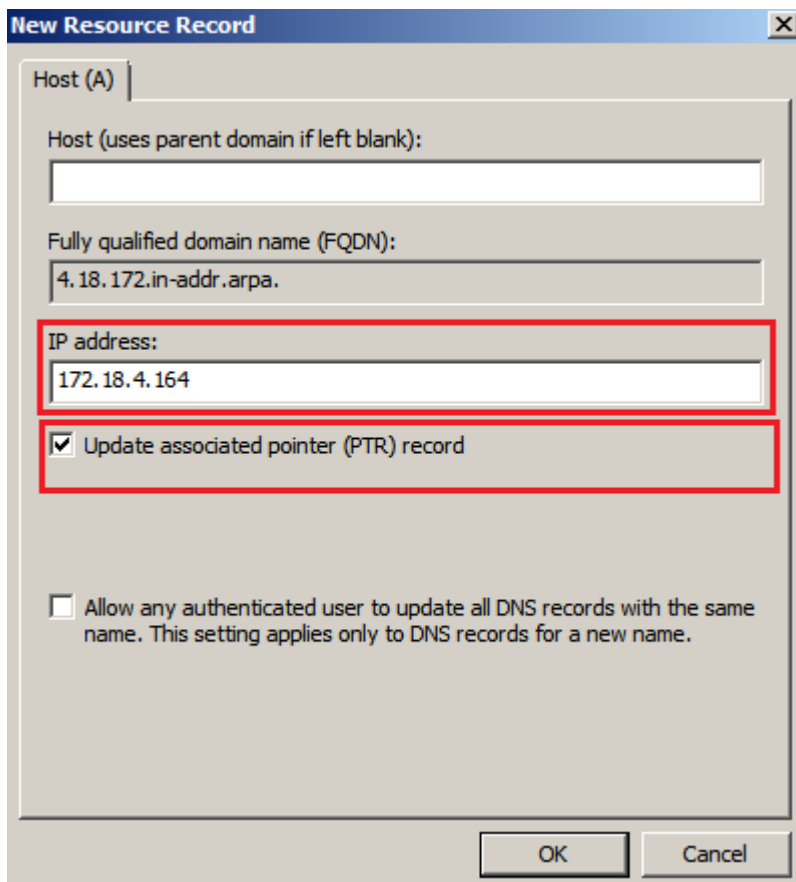


Select the following option and click *Create Record*:

- **Host (A or AAAA): Windows Server 2008/2012**
- **Host (A): Windows Server 2003**

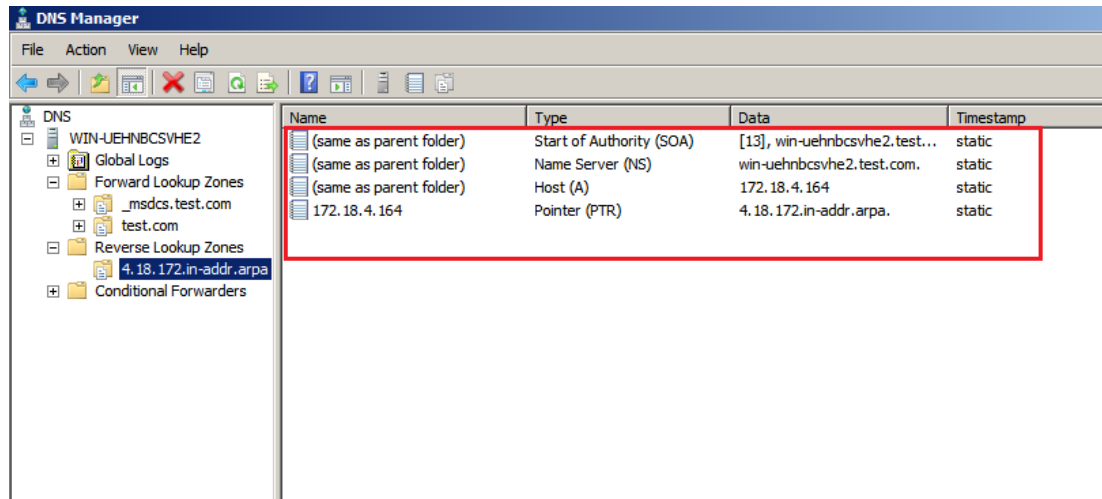


Enter the IP address of the AD server and check “*Update associated pointer (PTR) record.*” Click OK.



Restart the AD server, and then check that the reverse lookup zone setting has been updated.



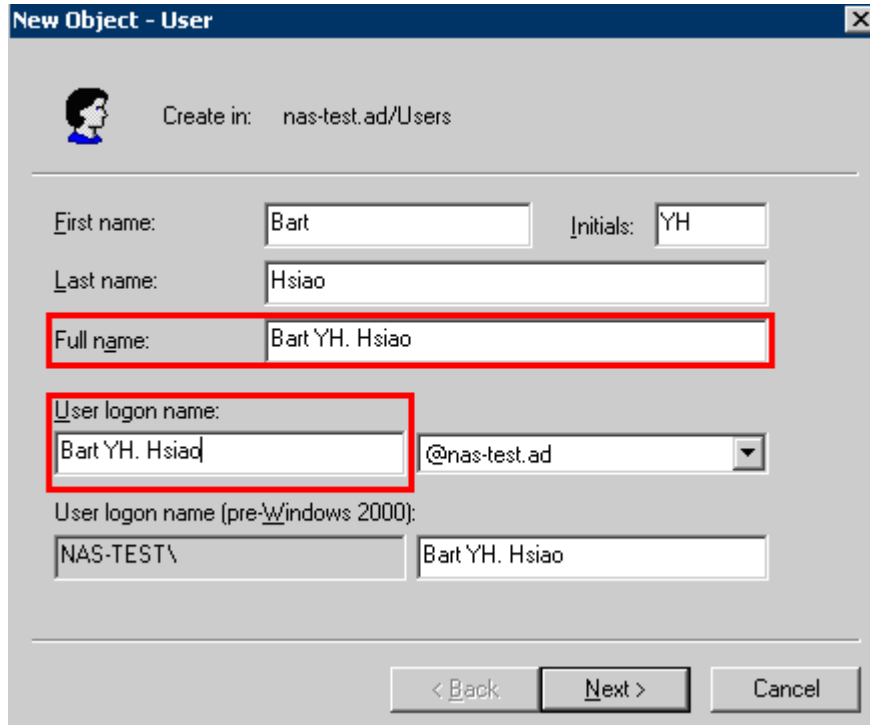


- Start of Authority (SOA): Make sure this item is included in the list.
- Name Server (NS): Make sure this item is included in the list.
- Host (A): The IP address must match that of the AD server.
- Pointer (PTR): The Data column should show the IP address of the AD server.

### Step 3: Configuring AD User Account Settings for Import into HA3969U

Make sure that the AD user accounts meet the following criteria:

- AD user logon name needs to be the same as the *full name*.



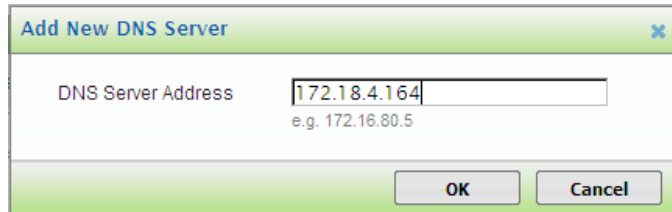
The screenshot shows the 'New Object - User' dialog box. The 'Create in' field is set to 'nas-test.ad/Users'. The 'First name' field contains 'Bart' and the 'Initials' field contains 'YH'. The 'Last name' field contains 'Hsiao'. The 'Full name' field contains 'Bart YH. Hsiao' and is highlighted with a red box. The 'User logon name' field contains 'Bart YH. Hsiao' and is also highlighted with a red box. The domain dropdown menu is set to '@nas-test.ad'. The 'User logon name (pre-Windows 2000)' field contains 'NAS-TEST\Bart YH. Hsiao'. At the bottom, there are buttons for '< Back', 'Next >', and 'Cancel'.

- The user logon name can not include the following invalid characters:  
^[]:;|=,+\*?<>@”

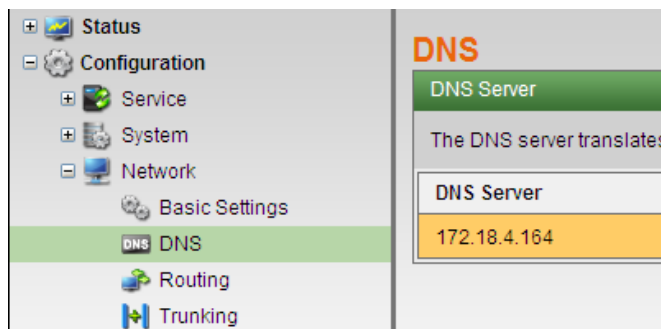



### Step 4: Adding AD server to HA3969U

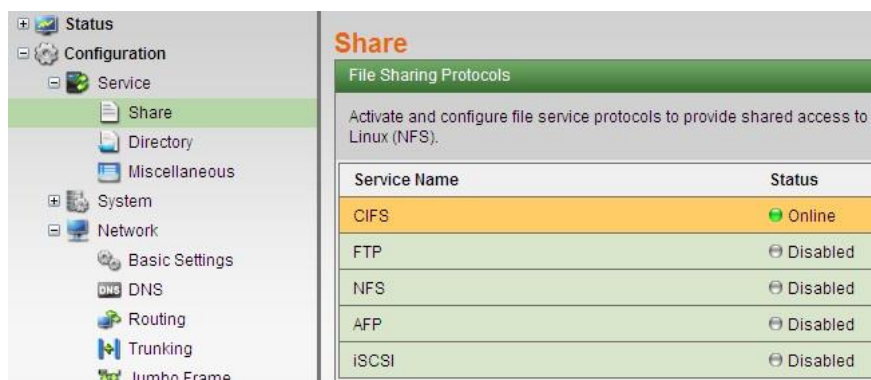
**4.1** In the HA3969U GUI, go to *Configuration > Network > DNS* and click on *Add* in the DNS Server section. Enter the Windows AD server's IP address and click on *OK*.



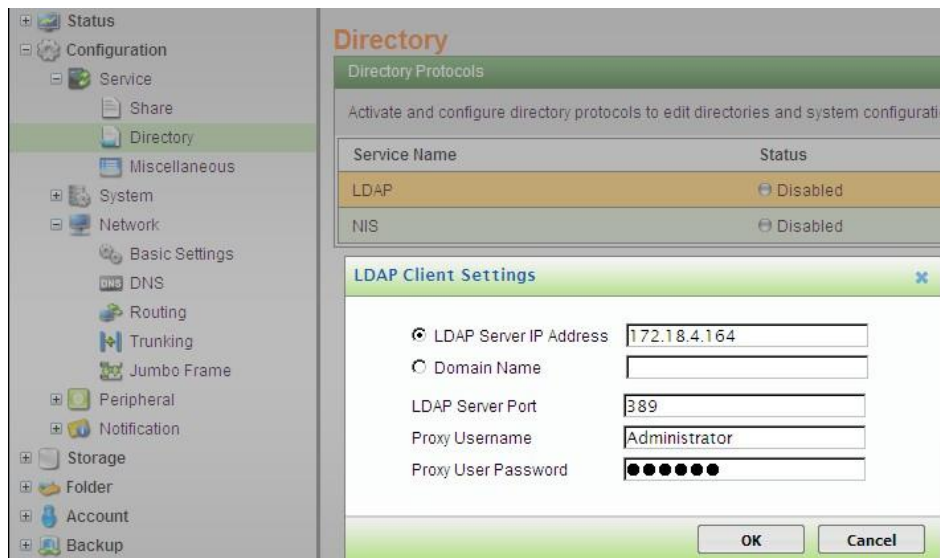
Confirm that the DNS server has been added.



**4.2** Go to *Configuration > Service > Share* and make sure that the CIFS service has been enabled (Online). If it has been disabled, click the  icon to enable it.

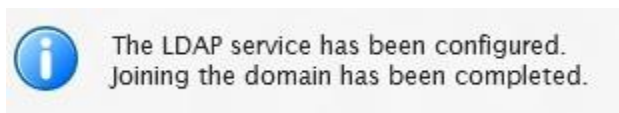


**4.3** Go to *Configuration > Service > Directory*, select the LDAP service and click on *Edit*. Configure the settings and click *OK* after finishing the settings.

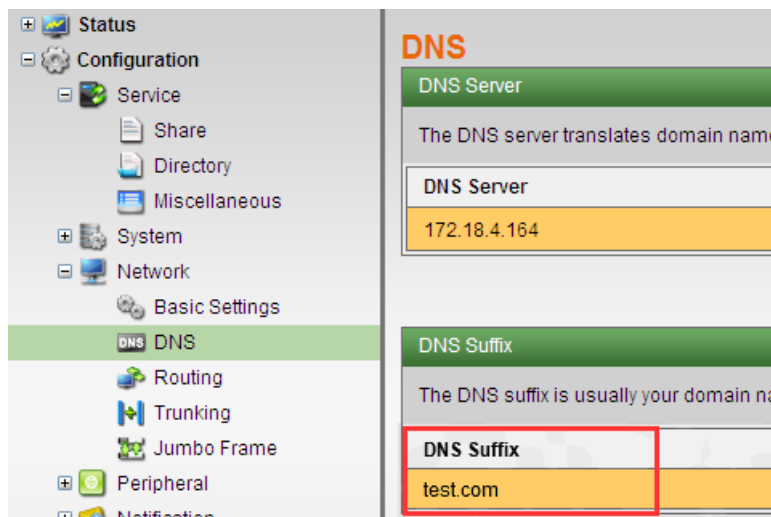


- **LDAP Server IP Address / Domain Name:** Enter either the IP address or the domain name of the AD server to specify it. Example: (IP Address) *172.18.4.164* (Domain Name): *test.com*
- **LDAP Server Port:** Specifies the server port. This parameter will be assigned automatically according to the IP address.
- **Proxy Username:** Enter the AD server admin username.
- **Proxy User Password:** Enter the AD server admin password.

When LDAP configuration is successful, the AD has been added to the HA3969U system.

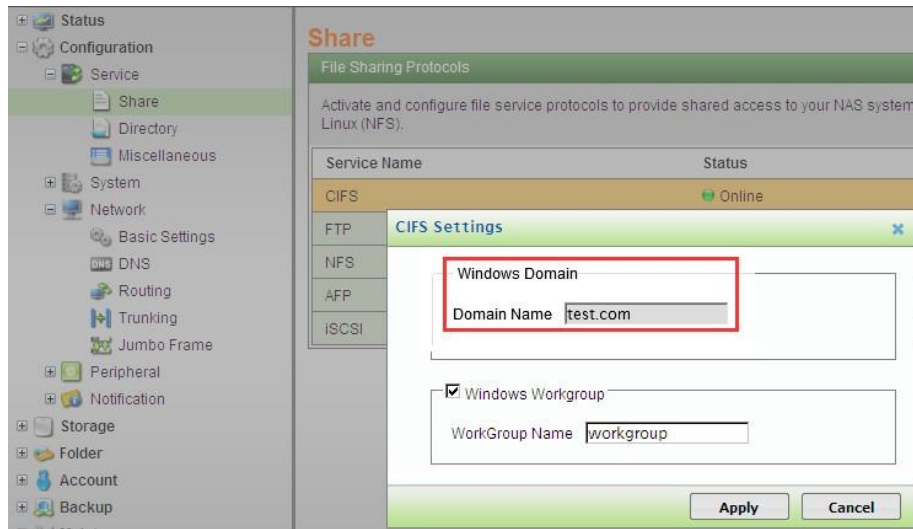


**4.4** Go to *Configuration > Network > DNS* to check the DNS Suffix setting and confirm the Windows domain name. It should appear automatically if the LDAP configuration has been done correctly.





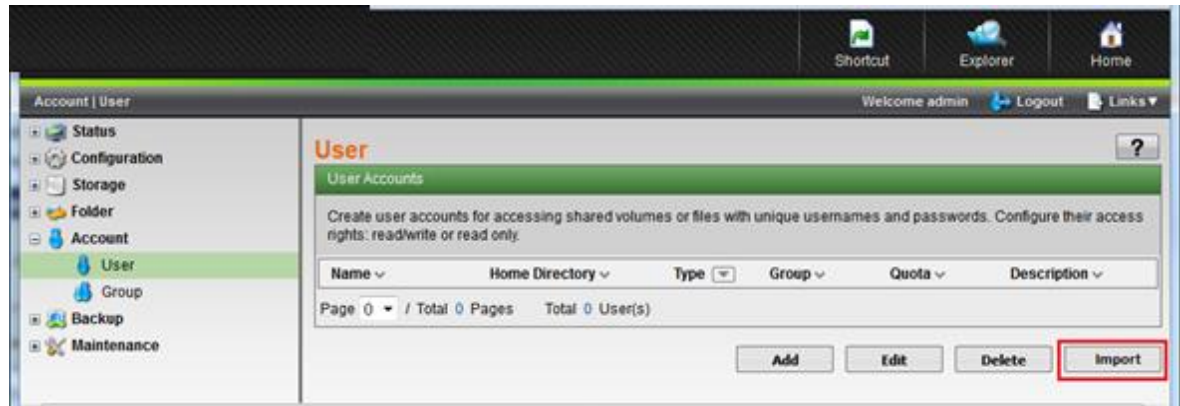
**4.5** Go to *Configuration > Service > Share* to check CIFS settings and confirm the Windows domain name. It should appear automatically if the LDAP configuration has been done correctly.





### Step 5: Importing Users from AD Server

Go to *Account > User* and click on *Import*.



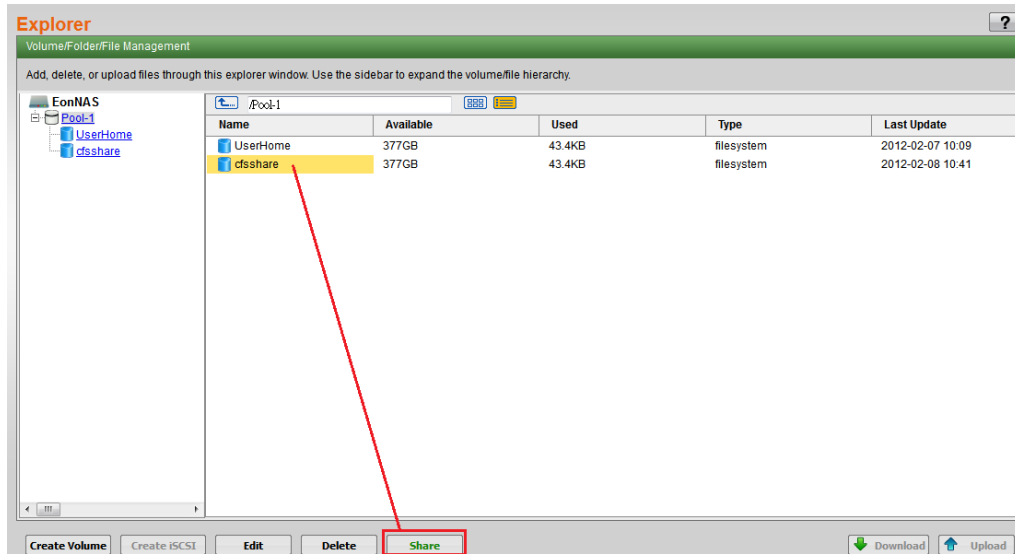
Ensure the AD users are imported from the AD server.

ift1005	/home/ift1005	LdapUser	10000	none
ift1006	/home/ift1006	LdapUser	10000	none
ift1007	/home/ift1007	LdapUser	10000	none
ift1008	/home/ift1008	LdapUser	10000	none
ift1009	/home/ift1009	LdapUser	10000	none
ift101	/home/ift101	LdapUser	10000	none
ift1010	/home/ift1010	LdapUser	10000	none
ift1011	/home/ift1011	LdapUser	10000	none
ift1012	/home/ift1012	LdapUser	10000	none
ift1013	/home/ift1013	LdapUser	10000	none
ift1014	/home/ift1014	LdapUser	10000	none
ift1015	/home/ift1015	LdapUser	10000	none
ift1016	/home/ift1016	LdapUser	10000	none
ift1017	/home/ift1017	LdapUser	10000	none
ift1018	/home/ift1018	LdapUser	10000	none
ift1019	/home/ift1019	LdapUser	10000	none
ift102	/home/ift102	LdapUser	10000	none
ift1020	/home/ift1020	LdapUser	10000	none
ift1021	/home/ift1021	LdapUser	10000	none

The 1 page / Total 145 pages Total 30 records

## Step 6: Allowing Users to Access Folders

**6.1** Go to *Explorer* in the HA3969U GUI and select the folder to be shared. Click on *Share*.



**6.2** Add users that will have permission to access this folder by clicking on *Add*. Make sure that the CIFS/FTP/SFTP share protocol has been checked.

Folder Path:

Share Name:

Description:

Access Rights

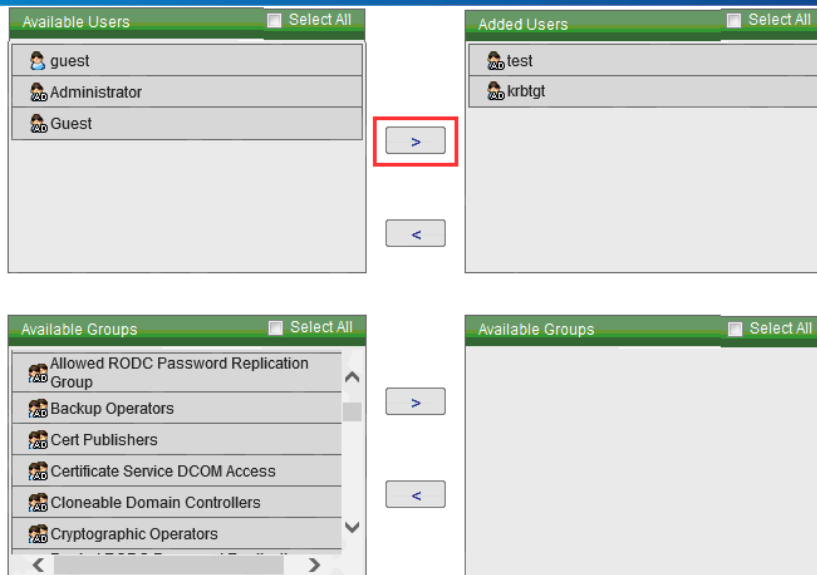
everyone	Access	Allow	Forbid
	Full Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Modify	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Read and Execute	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	List folder contents	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Read	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Write	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CIFS/FTP/SFTP

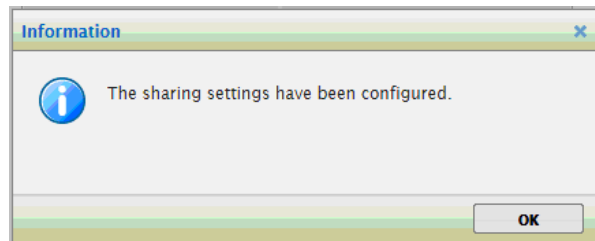
NFS

AFP

**6.3** To add users and/or groups, move them to the right-side boxes using the arrow signs.



**6.4** After configuring the share settings, click *OK* button to apply the modifications.



**6.5** After that, go back to Windows Server and verify whether the share folder access rights are the same as on the HA3969U system. To do so, find the relevant network disk, right-click and select *Properties*. The share folder access settings can be found in the *Security* tab.

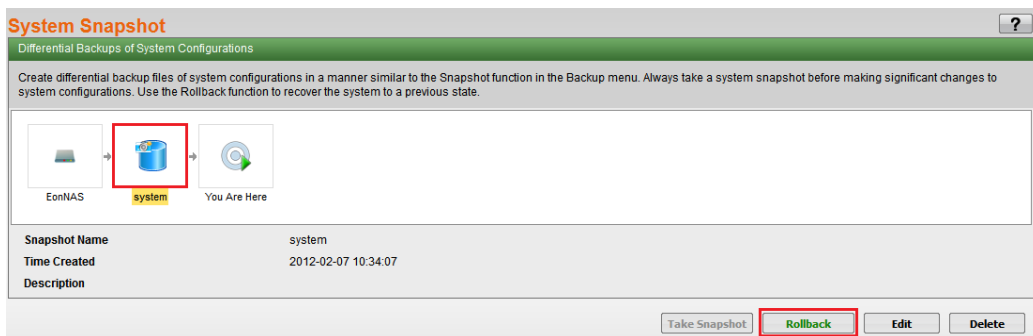


## Appendix

### ***HA3969U System Recovery Procedure***

If the system encounters errors during import, recover (rollback) the system as follows using the system snapshot image mentioned above.

Go to *Maintenance > System > System Snapshot*. Select the snapshot image for recovery and click on *Rollback*.



### ***Troubleshooting***

If joining Windows AD fails after configuring everything, check the following items again to make sure the configurations are correct.

- **HA3969U DNS Server IP Address**  
It should be the same as the the Windows AD server's IP address.
- **The Time Difference between HA3969U and Windows AD Server**  
It should be less than 5 minutes.