See also

Abort a Partition Operation

Purpose

Use this feature if you want to back out of an operation, or, if your NDS* network returns NDS errors or fails to synchronize following a partition operation.

You can abort a partition operation from either the **Tree view** or the list of **Partitions and Servers**.

Abort a Partition Operation

1. Choose the partition where an operation has begun.

    Hint: If you are attempting to abort a merge partition operation, choose the partition (the child partition) that is merging with its parent. If you are attempting to abort a create partition operation, choose the parent partition.

2. Right click the partition.

3. Choose **Abort Operation**.

4. Confirm your request.

For more information, see Overview of Aborting a Partition Operation.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

See also ![i]

Add a Replica

Purpose

Creating multiple NDS* partitions does not, by itself, increase fault tolerance or improve performance of the Directory. However, strategically using multiple replicas does.

Add a replica of a partition to a server to provide your Directory tree with

- Fault tolerance
- Faster access to NDS data
- Faster access across a WAN link
- Access to NDS objects in a set context (using bindery services)

You can add a replica of a partition to a server from either the **Tree view** or the list of **Partitions and Servers.**

Add a Replica

1. Choose the partition that you want to replicate on a server.

2. Choose **Add replica** ![icon].

3. Click the browse button ![icon] to choose the server to place the replica on.
4. Choose the NetWare* Server object from the browser and choose **OK.**
5. Choose either **Read/Write** or **Read Only**.
6. Choose **OK.**
7. Confirm your request.

For more information, see Overview of Adding a Replica.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

See also 🔷

Assign a New Master Replica

Purpose

Important: Don't use this feature to change a replica type. This is a repair feature that should only be used under the following conditions:

- The current master replica is corrupted
- The server the current master resides on lost data integrity
- The server the current master resides on has had an unrecoverable hard disk failure

You need a master replica to perform operations with a partition. Assigning a new master replica allows you to convert an existing replica to the master replica, and therefore allows you to perform partitioning operations.

Before assigning a new master replica, you should try to change an existing replica to master using the **Change Replica Type** operation from the **Tree view** or from the list of **Partitions and Servers**.

Assign a New Master Replica

1. From either the **Tree view** or the list of **Partitions and Servers**, choose the partition whose master is corrupted or unrecoverable.

2. Choose **Partition Continuity** 🔲.

3. From the **Partition Continuity** view, choose the server (the row) that you want the partition's master replica to reside on.

4. Choose **Assign New Master** 🔶.

5. Confirm your request.

See also
Change Replica Type

Purpose

Change a replica type to control access to the replica information. For example, you might want to change an existing read/write replica to a read-only replica to prevent users from writing to the replica and modifying Directory data.

Note: You can't use this procedure to change the type of the master replica. To specify a new master replica, change the type of an existing read/write or read-only replica to master, and the original master replica is automatically changed to read/write.

You can change a replica type from either the **Tree view** or the list of **Partitions and Servers.**

Change a Replica Type

1. Choose a partition or a server.

2. From the replica pane, choose the replica you want to change.

3. Choose **Change replica type** .
4.　　　Choose a new type and choose **OK**.
5.　　　Confirm your request.

For more information, see Overview of Changing Replica Type.

See also 🔲

Check Partition Continuity

Purpose

This operation helps you identify whether any of a partition's replicas are experiencing synchronization errors. This operation is also known as "walking the replica ring."

You can check partition continuity from either the **Tree view** or the list of **Partitions and Servers**.

Check Partition Continuity

1. Choose the partition whose synchronization status you want to view.

2. Choose **Partition Continuity** 🔲.

    In the **Partition Continuity** view, a replica icon with an exclamation point indicates a replica with synchronization errors. To get context-sensitive help on an error, double-click the replica icon.

For more information, see <u>Overview of Checking Partition Continuity</u>.

See also ℹ️

Check Synchronization Status of a Partition

Purpose

NDS* Manager will read the partition status attribute for the partition to determine any synchronization errors. This is a low-level diagnostic check that is safe to perform under all circumstances.

You can check the synchronization status of a partition from either the **Tree view** or the list of **Partitions and Servers**.

Check the Synchronization Status of a Partition

1. Choose the partition you want to check.

2. Choose **Check synchronization** 🔄.

3. (Optional) If you attempted this operation from the list of **Partitions and Servers**, you can choose to view the synchronization status of all the partitions in your Directory tree.

4. Choose **OK**.

5. Confirm your request.

For more information, see "Overview of Checking the Synchronization Status of a Partition" in the help topic Overview of Viewing Partition Data.

Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Compatibility Issues

NDS Manager Compatibility

- We recommend upgrading all NetWare v4.10 servers to the latest NDS available on NetWire for NetWare v4.10. Note: NDS in Green River is incompatible with NDS versions for NetWare 4.10 prior to v4.89a.

- We recommend using NetWare Client 32 when running NDS Manager.

NDS Version Compatibility

- NDS Manager fully supports NDS v4.89a and above as well as DSREPAIR.NLM v4.31 and above.

- NDS Manager does not support DSREPAIR.NLM versions prior to 4.31.

- NDS Manager provides limited support for NDS versions prior to v4.89a running on NetWare v4.10 servers. NDS v4.89a provides the 'partition status' attribute which stores synchronization errors that occur when a replica synchronizes with other servers in the replica list. This attribute allows NDS Manager to provide synchronization information about partitions. Issues for pre- v4.89a NDS include the following:

- If Check Synchronization is performed on a partition that has all of its replicas stored on v4.10 servers running NDS versions prior to v4.89a, a synchronization error will be displayed even if one does not exist.

- If Check Synchronization is performed on a partition which has some replicas stored on v4.10 servers running NDS versions prior to v4.89a and some replicas stored on v4.10 servers running NDS versions 4.89a or later, the following will occur: *If NDS Manager reads the partition information from one of the servers running NDS prior to v4.89a,* a synchronization error will be displayed even if one does not exist. *If NDS Manager reads the partition information from one of the servers running NDS v4.89a or later,* a synchronization error will be displayed only if one exists.

- Partition and Replica Information will not display information for some fields if the information for the partition or replica is read from a server running NDS version prior to 4.89a.

- The Partition Continuity Grid will not show any synchronization errors (even if they exist) for replicas stored on servers running NDS versions prior to 4.89a.

Windows 95 Compatibility

When running NDS Manager on Windows 95, be aware of the following:

- NDS Manager uses many context handles (each process in Windows 95 is limited to 16 context handles)

- If you begin to receive error -328 while running NDS Manager on Windows 95, close some of your open windows in NDS Manager and retry the operation.

Client Software Compatibility

If you are running NDS Manager on VLMs, be aware of the following (upgrading to Client 32 will avoid all of the following):

- VLMs default to a maximum of eight simultaneous connections to servers. This can cause "Unable to attach" and "Unable to read" errors (often in the form of statuses -321, x8801, and x8809) in NDS Manager.

   You may also get notices that servers are down when they are not (NDS Manger simply cannot connect to them because it is out of available connections). You can increase the maximum number of simultaneous connections when running VLMs by adding a "CONNECTIONS=n" entry to your NetWare DOS Requester section of your NET.CFG. VLMs support from two to 50 connections. Ideally, for NDS Manager, your workstation should be configured to support a number of connections equal to the number of servers in your tree. Refer to Dynatext for compatibility notes on this configuration option if you are running NetWare v3.x servers on your network.

- If you are running VLMs and network traffic is heavy and NDS Manager tries to connect to a server which is down, it may take a very long time to return an "Unable to attach" error.

- Since NDS Manager must connect to each server in the replica list of a partition to display the Partition Continuity grid, you may see a lot of "Unable to read" errors when running VLMs which are configured for fewer connections than servers in the tree.

   If your workstation is configured in this way, the connections will often be reused to read different servers when the grid is created. Subsequent actions on rows which display data may result in "Unable to attach" errors. Update synchronization information will update these rows to "Unable to read" status.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Create a Partition

Purpose

When you create partitions, you make logical divisions of your NDS* tree. These divisions can be replicated and distributed among different NetWare 4* servers in your network.

When you create a new partition, you split the parent partition and end up with two partitions. The new partition becomes a child partition. For recommendations, see Guidelines for Partitioning and Replicating Your Tree.

You can create a partition only from the **Tree view**.

Create a Partition

1. Choose **Tree view** .
2.   From the browser, choose the container you want to create as a partition.
3.   Choose **Create Partition** .
4.   Confirm your request.

For more information, see Overview of Creating a Partition.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Delete a NetWare Server Object

Purpose

Warning: Deleting a NetWare* Server object **permanently** removes the object from your network. It also permanently removes the server's data and resources from the network.

Deleting a NetWare Server object may corrupt your NDS* database, especially if the NetWare Server object provides NDS database services (such as storing replicas).

Use NDS Manager to remove the replicas from the server and avoid deleting a server that stores the only replica of a partition of the Directory tree.

You can delete a server from either the **Tree view** or the list of **Partitions and Servers**.

Delete a NetWare Server Object

1. Choose the NetWare Server object you want to delete.

    Note: If you are in the **Tree view**, you must browse the tree by expanding containers until you locate the NetWare Server object in the correct context. If you know the context where the server resides, you can set the context from the **View** menu.

2. Right-click and choose **Delete.**

For more information, see <u>Overview of Deleting a NetWare Server Object</u>.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Delete a Replica

Purpose

Deleting a replica removes the replica of a partition from a server.

You can delete a replica from either the **Tree view** or the list of **Partitions and Servers**.

Delete a Replica

1. Choose the partition that has a replica you want to delete.
2. From the replica pane on the right, choose the replica you want to delete.
3. Right-click and choose **Delete.**
4. Confirm your request.

For more information, see <u>Overview of Deleting a Replica</u>.

Description of Replica States

Replicas can be in many states, depending on the operations that are executing in the background.
Click a state for an explanation.

On
New
Dying
Locked
Change Type 0
Change Type 1
Transition On
Transition Move
Transition Split
Split 0
Split 1
Join 0
Join 1
Join 2
Move 0
Move 1
Move 2

Descriptions of Replica Types

NDS* uses four types of replicas.

Master replica

A master replica is a writable replica that contains all object information for the partition. All partition operations (create, merge, move, delete) occur from the master replica of the given partition.

Only one master replica can be defined for each partition.

Read/write replica

A read/write replica contains the same object information as the master replica. It allows modifications (writes) when a master replica of the given partition is already defined somewhere else.

There can be any number of read/write replicas.

Client workstations can update master and read/write replicas only.

Read-only replica

A read-only replica contains the same object information as the partition, but the information can only be read. It is used where partition reads are required, but writes to the partition should not occur.

A read-only replica cannot be used on a server where bindery services is required because bindery services requires a writable replica. When bindery services are required on a server, use either a master or read/write replica. The NetWare 4 install will (by default) ensure that if fewer than three replicas of the root of the current tree exist in the tree, a Read/write replica of that root will be added to the server being installed.

Subordinate reference replica

A subordinate reference replica cannot be modified by any user. It is automatically placed on a server by NDS if the parent partition has a master, read/write, or read-only replica on the server and no replica of the child partition exists on the server.

If you add a read/write or read-only replica of the child partition to the server, the subordinate reference replica is removed.

Network resources are held in the master, read/write and read-only replicas. Read-only replicas have limited scope and are not typically implemented. Subordinate reference replicas are automatically allocated and created, and tie the partitions of the tree together.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Guidelines for Partitioning and Replicating Your Tree

The following guidelines are only rules of thumb for most networks. However, depending on your network's specific configuration, hardware, and traffic throughput, you may need to adjust some guidelines to fit your needs. For additional information on designing your NDS* tree, managing partitions and replicas, and managing time synchronization, see Guide to NetWare 4 Networks.

## Guidelines for Partitioning

Location

- In a network with WAN links, partitions should not span multiple locations
- Partition locally around the servers (keep physically distant servers in separate partitions)
- Place fewer partitions at the top of the tree with more at the bottom

Size

- Keep partition sizes small
- The root of the current tree partition should remain small
- Typically, a partition should have fewer than 1,500 objects, and no more than 3,500
- Typically, a partition should have fewer than 10-15 subordinate partitions, and no more than 40

Example

The following graphic shows a typical tree structure. Note how the Sales Organizational Unit is a partition. This could be because the Sales OU is across a WAN link, or because it has a large number of User objects in it.
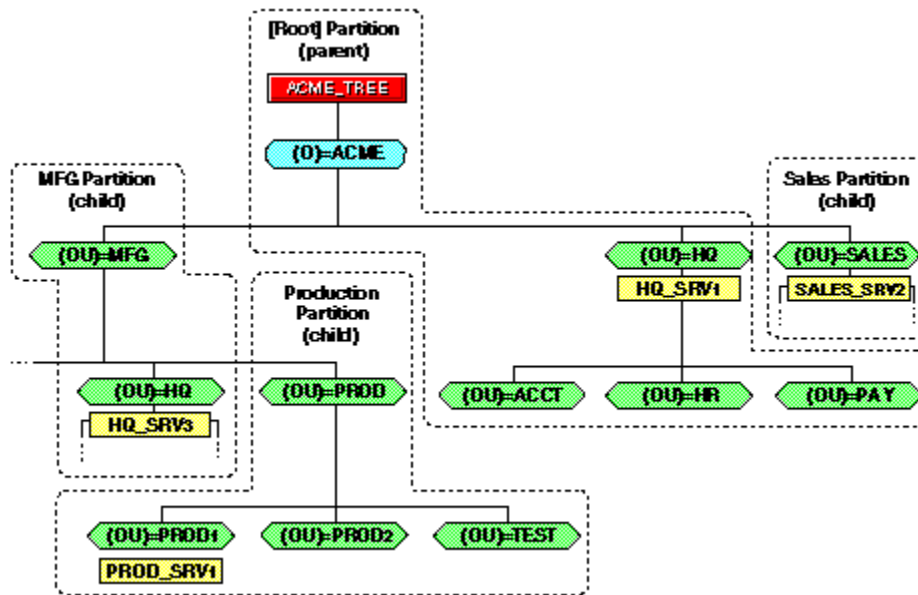
Guidelines for Replication

Placement

- Replicate locally, not across a WAN link (Replicas across a WAN link have to send/receive NDS synchonization information, which can slow down network traffic across a WAN link)
- If possible, place master replicas physically close to the master of parent and child partitions

Number

- Always keep 2 or 3 replicas per partition, and no more than 10
- Never store more than 10 replicas on a server

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Abort Partition Operation

Purpose

You can abort a create or merge partition operation if the operation has not yet progressed past the stage at which the change is committed. Use this feature if you want to back out of an operation, or if your NDS* network returns NDS errors or fails to synchronize following a partition operation.

For more information, see Overview of Aborting a Partition Operation.

Options

In the text box, the complete name of the partition you chose is shown. If you are attempting to abort a merge partition operation, choose the partition (the child partition) that is merging with its parent. If you are attempting to abort a create partition operation, choose the parent partition.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Add Replica

Purpose

Creating multiple partitions does not, by itself, increase fault tolerance or improve performance of the Directory. However, strategically using multiple replicas does.

Novell* recommends three replicas for each partition (if the Directory tree has enough servers to support that number). For other recommendations, see Guidelines for Partitioning and Replicating Your Tree.
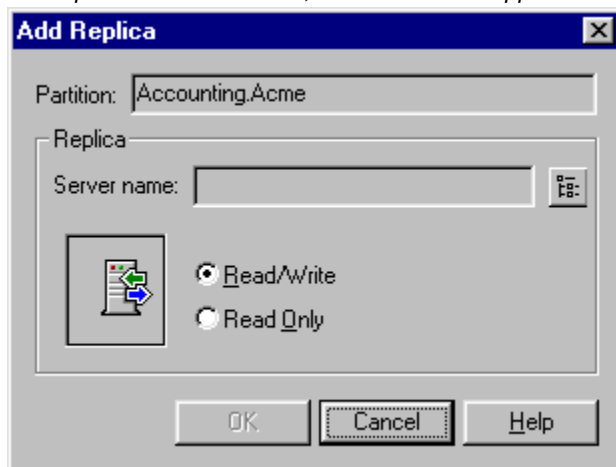
Add a replica of a partition to a server to provide

- Directory fault tolerance
- Increased access performance across a WAN link
- Faster access to Directory information
- Access to bindery services

For more information, see Overview of Adding a Replica.

Options

For explanations of features, click where 🖐 *appears.*

Add Replica	☒
Partition: Accounting.Acme	
Replica	
Server name: [_____] 📇	
📄 ⦿ Read/Write ◯ Read Only	
OK Cancel Help	

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

▪
Assign New Master Replica

Important: Don't use this feature to change a replica type. This is a repair feature that should only be used under the following conditions:

- The current master replica is corrupted
- The server the current master resides on lost data integrity
- The server's hard disk crashed and is unrecoverable

You need a master replica to perform operations with a partition. Assigning a new master replica allows you to convert an existing replica to the master replica, and therefore allows you to perform partitioning operations.

Before assigning a new master replica, you should try to change an existing replica to master using the **Change Replica Type** operation from the **Tree view** or from the list of **Partitions and Servers**.
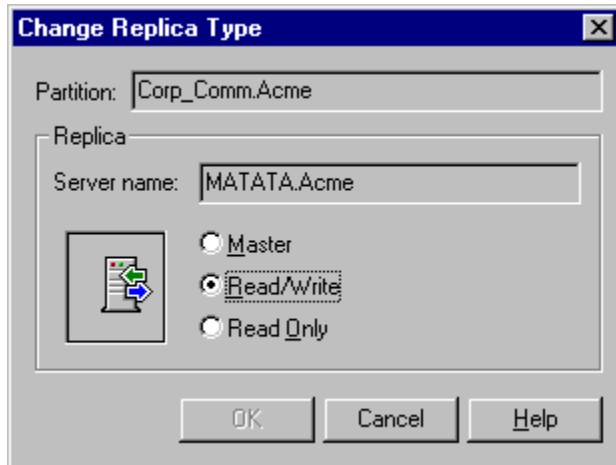
Change Replica Type

Purpose

Change the type of a replica to control access to the Directory data on that replica.

For example, you might want to change an existing read/write replica to a read-only replica to prevent users from writing to the replica and modifying Directory data.

For more information, see Overview of Changing Replica Type.

Options

For explanations of features, click where 🖐 *appears.*

Change Replica Type	✕

Partition: `Corp_Comm.Acme`

Replica

Server name: `MATATA.Acme`

- ○ Master
- ● Read/Write
- ○ Read Only

| OK | Cancel | Help |

Check Synchronization

This operation allows you to check the synchronization status of a partition---or of all the partitions---in your tree. This is a low-level diagnostic check that is safe to perform under all circumstances.

NDS* Manager will read the partition status attribute for each partition to determine any synchronization errors. NDS Manager will display the findings of the synchronization check in a dialog box. You can then check the partition continuity of any partitions that have returned errors and then run repair operations on those partitions.

Note: The option **All Partitions contained in the partition list** is not available unless you have chosen this operation from the list of **Partitions and Servers**.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Create Partition

When you create partitions, you make logical divisions of your NDS* tree. These divisions are called subtrees, and they can be replicated and distributed among different NetWare* 4* servers in your network.

When you create a new partition, you split the parent partition and end up with two partitions. The new partition becomes a child partition.
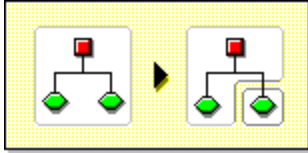
For example, if you choose an Organizational Unit and choose to create it as a new partition, you split the Organizational Unit and all of its subordinate objects from its parent partition.

For more information, see Overview of Creating a Partition.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

■

Delete Replica

Deleting a replica removes the replica of the partition from a server.

If you want to remove a server from the Directory tree, you can delete replicas from the server before removing it. Removing the replicas reduces the chance of having problems removing the server.

You can also reduce synchronization traffic on the network by removing replicas. Keep in mind that you probably don't want more than six replicas of any partition.

Note: You cannot delete a master replica or a subordinate reference.

When you delete replicas, keep the following guidelines in mind:

- For fault tolerance, you should maintain at least three replicas of each partition on different servers.
- Deleting a replica deletes a copy of part of the Directory database on the targeted server.

  The database can still be accessed on other servers in the network, and the server that the replica was on still functions in NDS*.

  You cannot delete or manage subordinate reference replicas. They are created automatically on a server by NDS when the server contains a replica of a partition but not of that partition's child.

For more information, see <u>Overview of Deleting a Replica</u>.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

■

Delete Server

Warning: Deleting a NetWare* Server object **permanently** removes the object from your NDS* tree (the server still has SAP capabilities unless it is permanently down).

It also permanently removes the server's data and resources from the network.

Deleting a NetWare Server object may corrupt your NDS database, especially if the NetWare Server object provides NDS database services (such as storing replicas).

Use NDS Manager to remove the replicas on the NetWare server and avoid deleting a NetWare server that stores the only replica of a partition of the Directory tree.

You want to delete a server when:

■　　　　The server's hard drive goes bad and you want to reinstall the server.

■　　　　You no longer need that resource in the tree due to company downsizing.

There are several ways to go about deleting a NetWare Server object:

One option (although we don't recommend this) is to bring a NetWare server down and delete its object.Then, reinstall NDS on the server using INSTALL.NLM at the server, or recreate the object after bringing the server back up.You will have to use NetWare Administrator to delete Volume objects associated with the deleted NetWare Server object.

Do not delete a server if you merely wish to move it to a new context. Use the NetWare Administrator to move the server object and its associated volume objects to another context.

If the server is functioning properly, do the following **before** deleting it:

■　　　　Change the master replicas stored on this server to read/write replicas and then delete all replicas on the NetWare server.

■　　　　Remove NDS from the server with the INSTALL.NLM. This procedure protects your NDS database from losing services. (This procedure will also delete the server for you.)

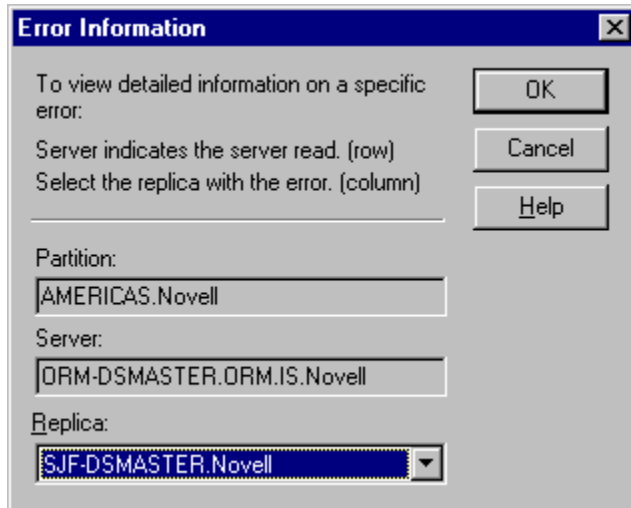* Novell trademark.　　** Third-party trademark.　　For more information, see <u>Trademarks</u>.

Error Information

Purpose

From this dialog box you can view the synchronization error information on a replica of the chosen partition.

From **Partition Continuity**, you can identify replicas in the grid which have synchronization errors.

Options

For explanations of features, click where 🖐 *appears.*

•

List of Partitions and Servers

Purpose

The list of **Partitions and Servers** is one of the three views from which you can work in NDS* Manager (the other two are the **Tree view** and **Partition Continuity**).

This view displays all partitions and servers in <u>and</u> below your current context. If you want to see which partitions are parent and which are child partitions (the partition hierarchy), you must go to the **Tree view**.

To perform repair operations, you must choose a partition and then choose **Partition Continuity** ∎ .

Options

For explanations of features, click where ∎ appears.
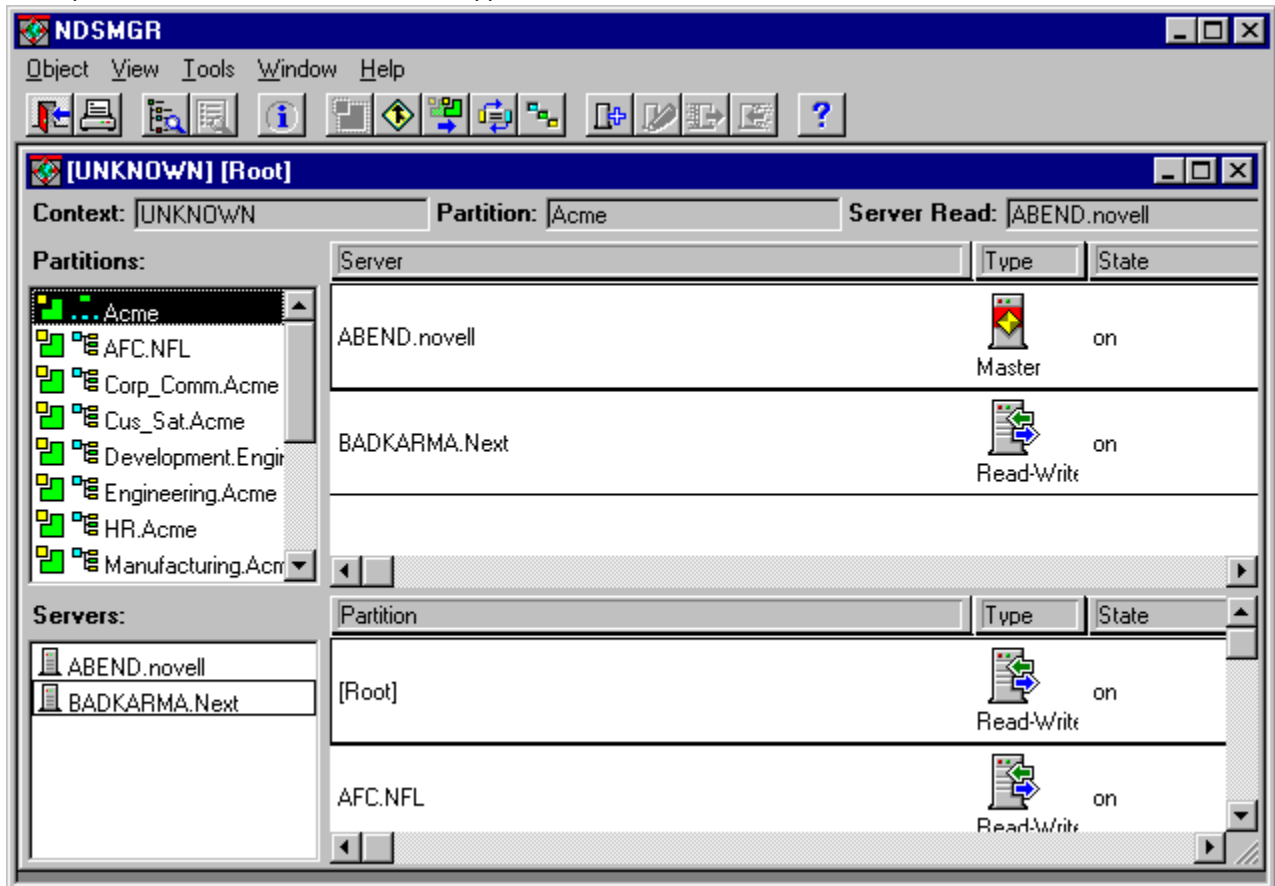
* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Log File Error

Purpose

The **Logfile Error** dialog box appears if NDS* Manager fails when it attempts to write to the log file after performing an NDS version update operation.

Some possible reasons NDS Manager can't write to the log file are
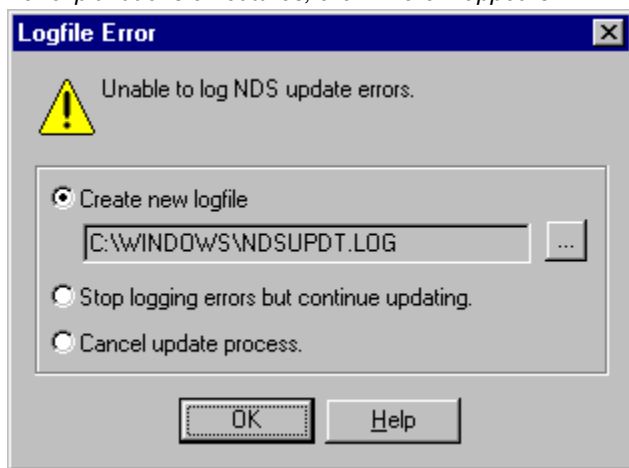
- The specified directory does not exist

  If the file is not in the directory, NDS Version Update will create it.

  The location of the log file is specified in your **Preferences**. To view your **Preferences** settings, from the **Object** menu, choose **Preferences.**

- The file is set to read-only
- The file is damaged

Options

For explanations of features, click where ▪ appears.

```
┌─────────────────────────────────────────────┐
│ Logfile Error                          ⊠    │
├─────────────────────────────────────────────┤
│   ⚠     Unable to log NDS update errors.    │
│  /!\                                         │
│                                              │
│   ⊙ Create new logfile                       │
│   ┌─────────────────────────────┐  ┌───┐    │
│   │ C:\WINDOWS\NDSUPDT.LOG       │  │...│    │
│   └─────────────────────────────┘  └───┘    │
│   ○ Stop logging errors but continue updating.│
│   ○ Cancel update process.                   │
│                                              │
│      ┌──────────┐   ┌──────────┐            │
│      │   OK     │   │  Help    │            │
│      └──────────┘   └──────────┘            │
└─────────────────────────────────────────────┘
```

Merge Partition

Purpose

When you merge a partition, the chosen partition and its replicas combine with the parent partition. When the operation is complete, only one partition (the parent partition) exists.

For more information, see <u>Overview of Merging a Partition</u>.

Options

Partition

Displays the complete name of the partition to be merged. To change the partition to be merged, choose **No** and choose a different partition.

Parent Partition

Displays the complete name of the partition's parent. You can't change the information in this field. It will always display the parent partition of the partition you have selected.
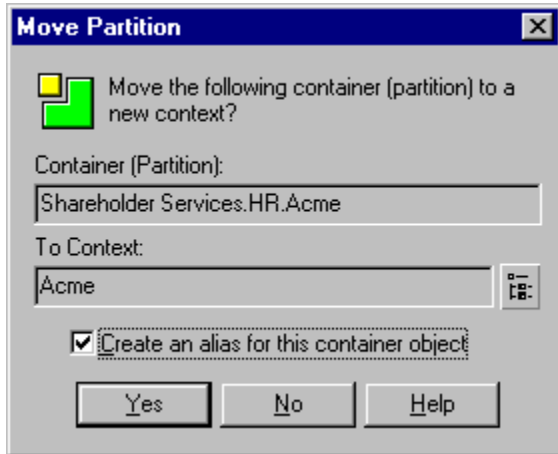
■
Move Partition

Purpose

Moving a partition lets you move a subtree in your Directory tree. You can move a partition root object (which is a container object) only if it has no subordinate partitions.

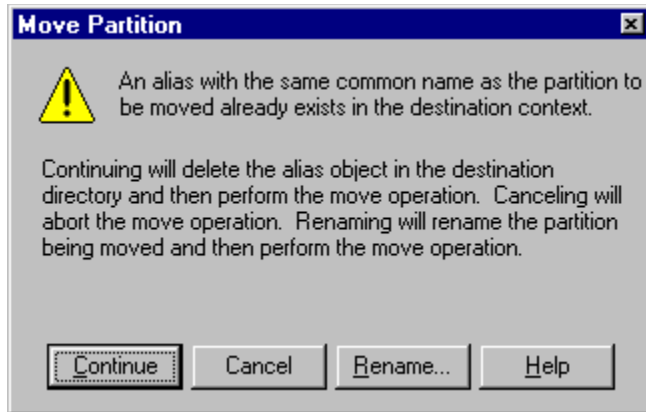For more information, see <u>Overview of Moving a Partition</u>.

Options

For explanations of features, click where ■ appears.

Move Partition

Purpose

This screen will display when you are trying to move a partition to a context where an alias already exists.
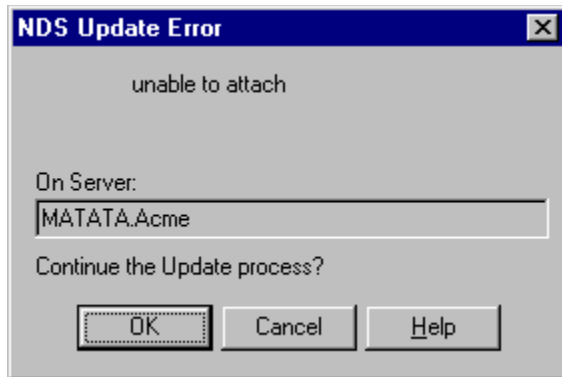
NDS Update Error

Purpose

NDS* Manager is unable to complete an NDS version update operation because of one or more problems on the specified server. Some possible explanations are

- The server is down or busy
- The server is corrupted
- You don't have rights to the server

Options

For explanations of features, click where ▪ appears.

```
┌─────────────────────────────────────────────┐
│ NDS Update Error                        [X] │
├─────────────────────────────────────────────┤
│                                             │
│           unable to attach                  │
│                                             │
│                                             │
│  On Server:                                 │
│  ┌────────────────────────────────────────┐ │
│  │ MATATA.Acme                            │ │
│  └────────────────────────────────────────┘ │
│  Continue the Update process?               │
│                                             │
│    ┌────────┐  ┌────────┐  ┌────────┐       │
│    │  OK    │  │ Cancel │  │  Help  │       │
│    └────────┘  └────────┘  └────────┘       │
│                                             │
└─────────────────────────────────────────────┘
```

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.
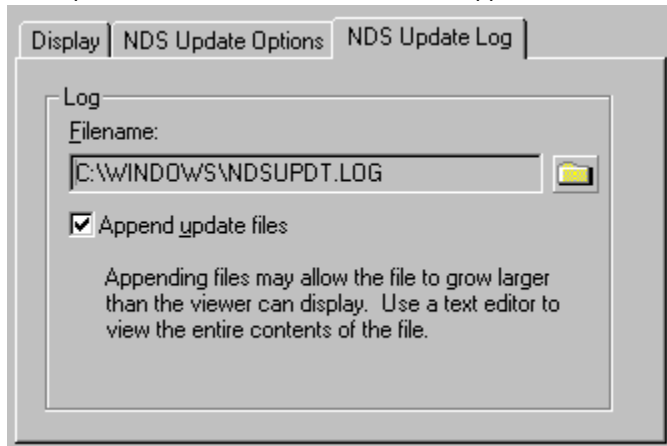
NDS Update Log

Purpose

You can specify the location where NDS* Manager will store the log file after performing an NDS version update operation.

This tab is accessed by selecting either **Object** > **Preferences** or **Object** > **NDS Version** > **Update** > **Settings**.

Note: If you access this tab through NDS Version > Update > Settings, changes made in the window affect this version update session only.

Options

For explanations of features, click where ▪ appears.

---

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

NDS Update Options

Purpose

Use this option to set default preferences for how NDS* Manager handles the NDS version update operation.

This tab is accessed by selecting either **Object** > **Preferences** or **Object** > **NDS Version** > **Update** > **Settings**.

Note: If you access this tab through NDS Version > Update > Settings, changes made in the window affect this version update session only.

Options

For explanations of features, click where ▪ appears.

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* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

■
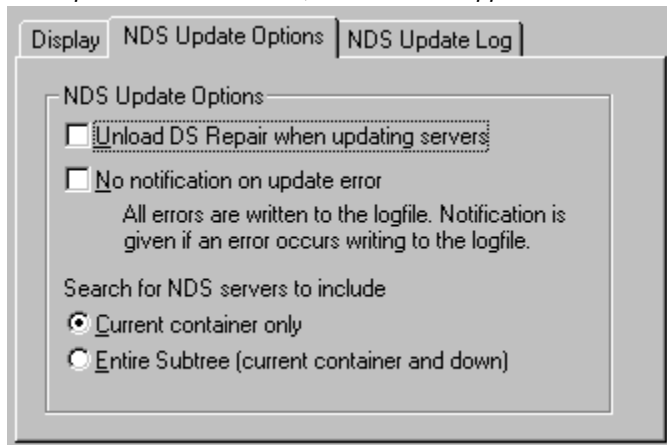
NDS Version Update

Purpose

You will want to update the version of NDS* on a server whenever you receive an updated DS.NLM from Novell*. Updated versions of the DS.NLM are periodically sent out over NetWire* (Novell's electronic forum).

Each update of NDS fixes problems and increases functionality. When a new version of NDS is released, the new features in NDS are not available unless all servers in a partition's replica ring are running the same version of NDS.

Important: Version update does not support updates across operating system releases. In other words, this feature **will not** update a NetWare* 4.1 server's version of NDS to a NetWare 4.11 version of NDS. This feature **will** update NetWare 4.1 servers running an older version of NDS (such as 489) to a newer version of NDS for NetWare 4.1 (such as 496).

If a new version of the NetWare 4.11 NDS is released on NetWire, you can update your NetWare 4.11 servers with the new version.

Options

For explanations of features, click where ■ appears.
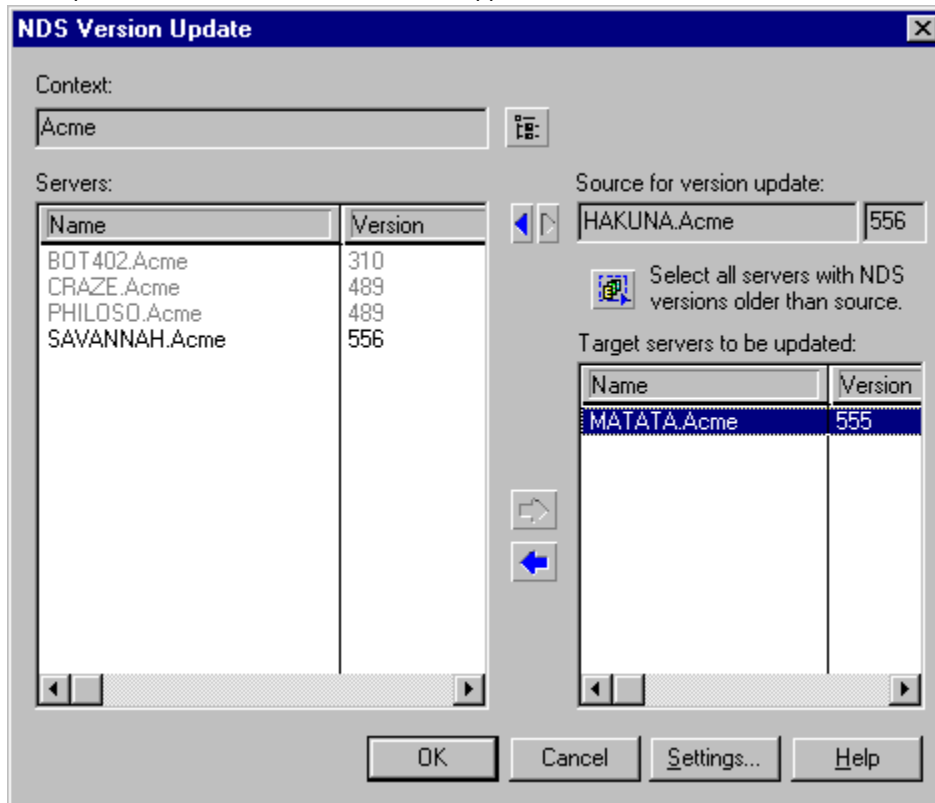
* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.
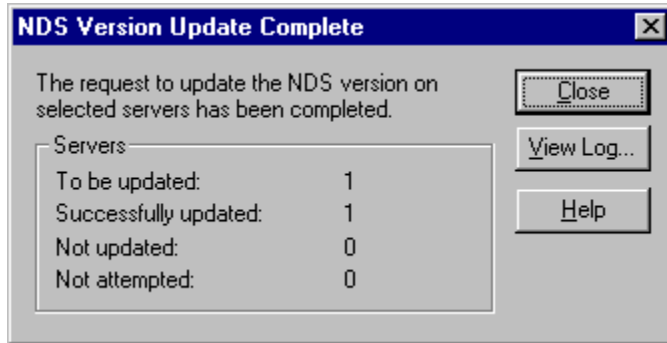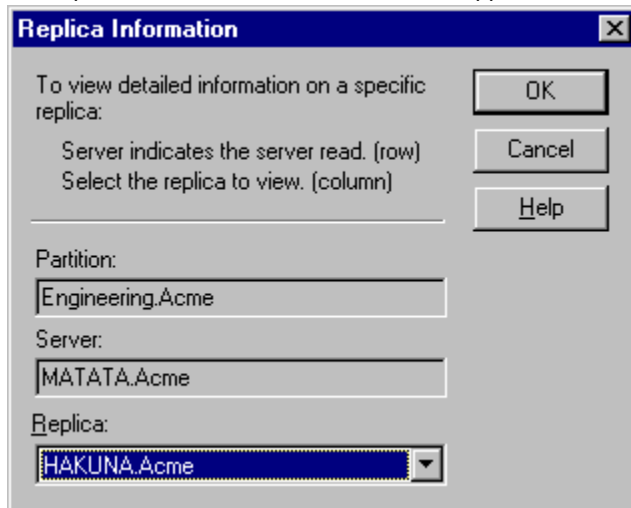
NDS Version Update Complete

Purpose

NDS* Manager has completed the NDS version update operation.

Options

For explanations of features, click where ▪ appears.

NDS Version Update Complete	☒
The request to update the NDS version on selected servers has been completed.	Close
Servers	View Log...
To be updated: 1	Help
Successfully updated: 1	
Not updated: 0	
Not attempted: 0	

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Replica Information

Purpose

Use this dialog box to choose the replica to view information about.

An easier way to view replica information is to double-click a replica in the partition grid.

Options

For explanations of features, click where ▪ appears.
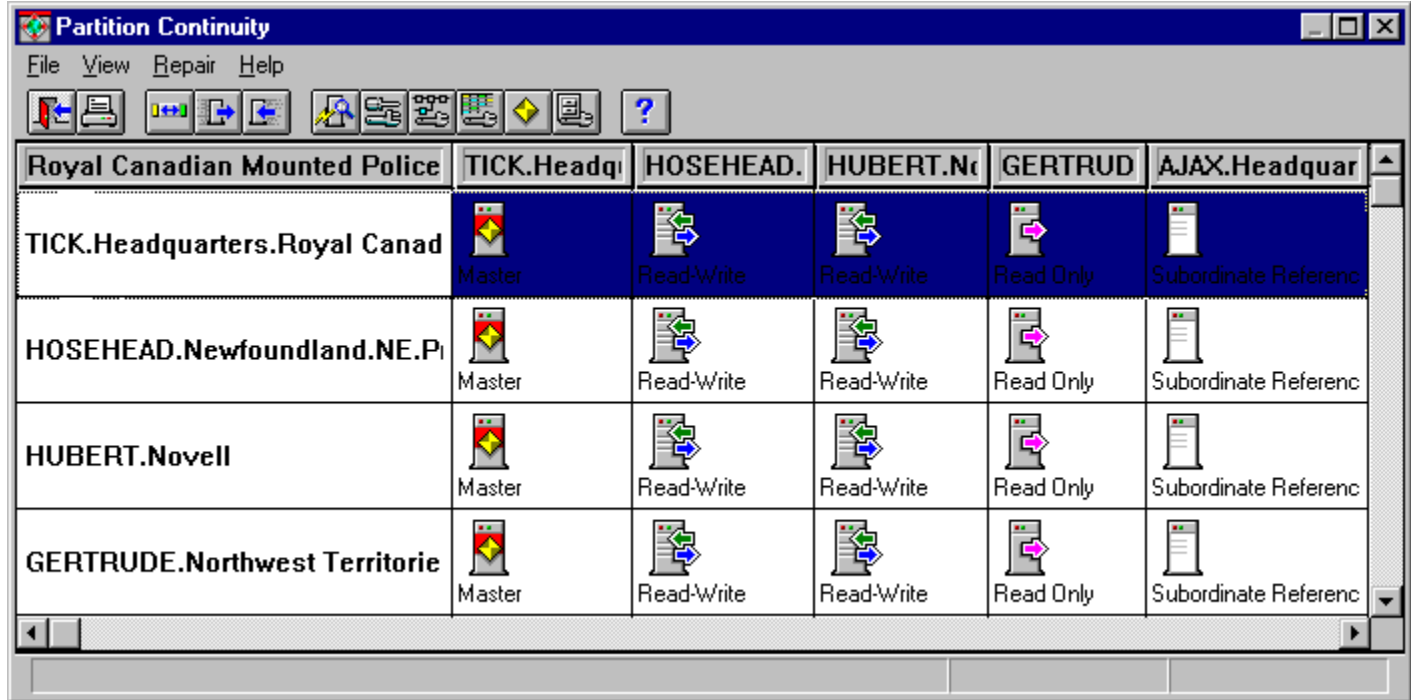
Partition Continuity

Purpose

From the **Partition Continuity** view, you can identify whether any of a partition's replicas are experiencing synchronization errors, and you can perform repair operations.

Partition Continuity displays the replica list (columns) of each server (rows) that holds a replica of the chosen partition.

Hint: To understand the partition grid, read it horizontally, one server at a time. Each row represents the replica list of that server.

Options

For explanations of features, click where ■ appears.

■
Partition Information
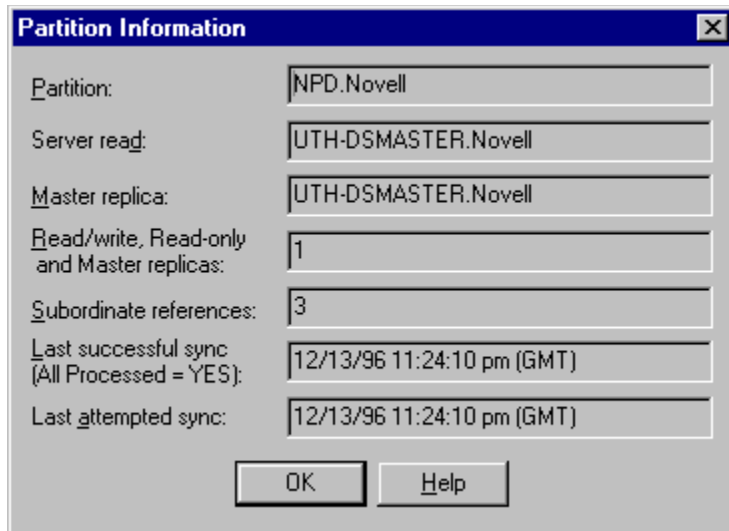
Purpose

You can view partition information to check the overall condition of a partition. The Partition Information dialog box helps you identify the number of replicas of the chosen partition and provides synchronization information.

Options

For explanations of features, click where ■ appears.

Alias Information

Purpose

The **Alias Informatiion** dialog box identifies the aliased container object.   In NDS* Manager, only container aliases are displayed.   Aliases are created so that users do not need to know the location of an object in the directory tree in order to access that object.   For instance, a system administrator can move a container object to a new location while still providing access through an outdated location.

Options

For explanations of features, click where ■ appears.

Alias Information	⊠
Alias:	ATM.Novell
Aliased Object:	ATM-ALIAS.*SERVICES.RELEASE.PRV.Novell
	OK Help
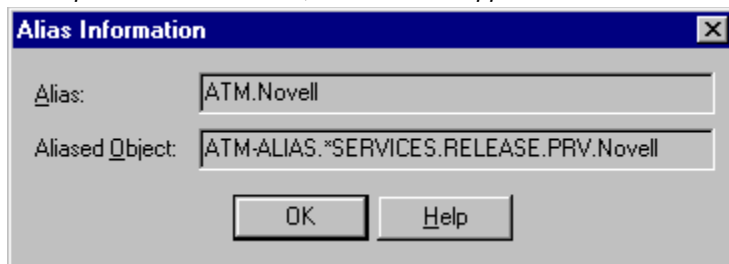
* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.
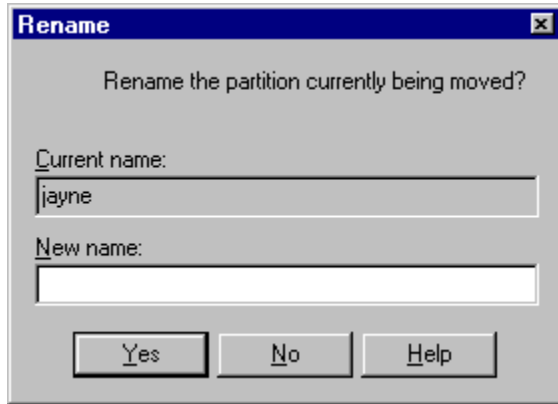
Rename

Purpose

Use this screen to rename a partition.

Options

For explanations of features, click where ▪ appears.

```
Rename                                    ☒

        Rename the partition currently being moved?


   Current name:
   ┌──────────────────────────────────────┐
   │ jayne                                │
   └──────────────────────────────────────┘

   New name:
   ┌──────────────────────────────────────┐
   │                                      │
   └──────────────────────────────────────┘

      ┌─────────┐  ┌─────────┐  ┌─────────┐
      │   Yes   │  │   No    │  │  Help   │
      └─────────┘  └─────────┘  └─────────┘
```

Partitions Synchronization Check

Purpose

This dialog box provides information about the general state of the partitions checked after a Check Synchronization operation.

Options
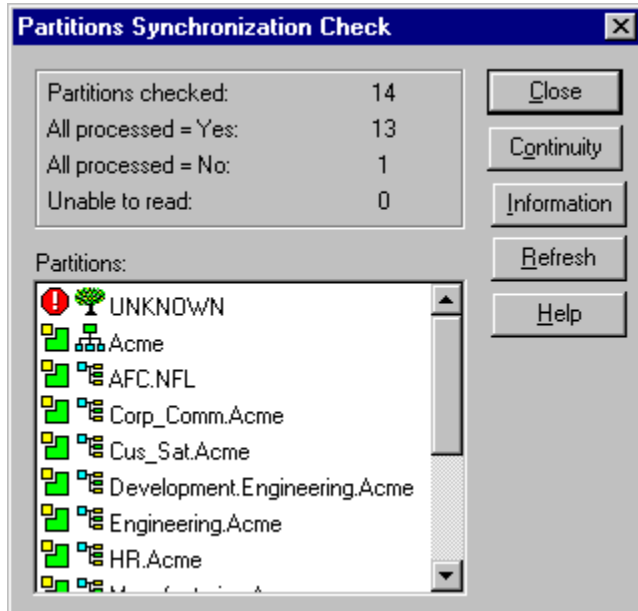
For explanations of features, click where ▪ *appears.*

Preferences

Purpose

Set preferences to create default settings for how NDS* Manager displays information, how it processes NDS version update operations, and where it stores the log file after performing an NDS version update operation.

Options

For explanations of features, click where ▪ appears.
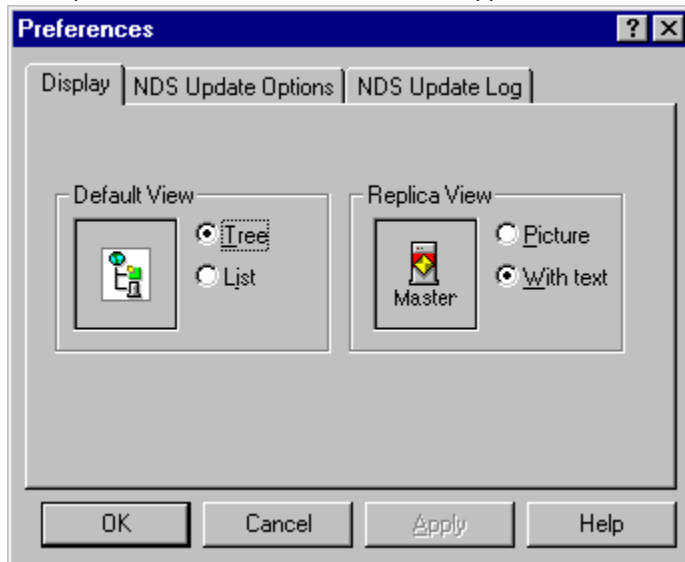
* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Print

Purpose

You can print information about a container, server, partition, or replica. Different options are available, depending on what type of object you have selected.

Options

For explanations of features, click where ▪ appears.

```
┌─ Print ─────────────────────────────────────── ✕ ─┐
│                                                     │
│  ┌─ Printer ──────────────────────────┐   ┌──────┐ │
│  │                                     │   │  OK  │ │
│  │   PostScript Printer on LPT1:       │   └──────┘ │
│  │                                     │   ┌──────┐ │
│  └─────────────────────────────────────┘   │Cancel│ │
│                                             └──────┘ │
│  Selected Object Type:    Partition         ┌──────┐ │
│  ┌─ Print Options ────────────────────┐     │Setup…│ │
│  │  ⦿ Tree Only                       │     └──────┘ │
│  │      ☑ Two Columns                 │     ┌──────┐ │
│  │  ○ With Replica Data               │     │ Help │ │
│  │  ○ Information Only                 │     └──────┘ │
│  └─────────────────────────────────────┘             │
│                                                       │
└───────────────────────────────────────────────────────┘
```
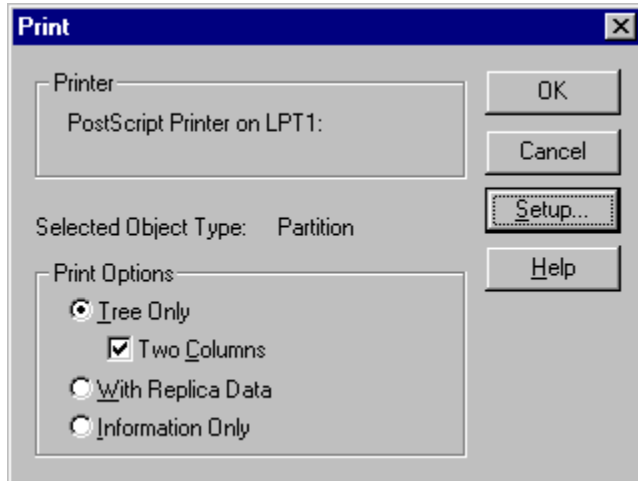
Print Partition Grid

Purpose

Print from the partition grid so you don't have to manually record a partition's replica list.

Options

For explanations of features, click where ▪ appears.
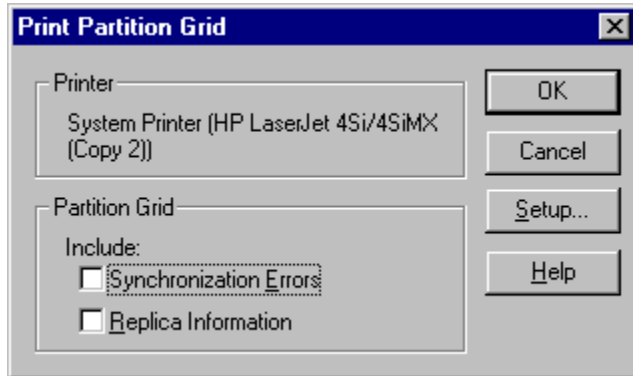
Receive Updates

Purpose

This operation forces the replica on the chosen server to receive all NDS* objects from the master replica of the partition. While in process, this operation marks the replica on the chosen server as a **new** replica.

The replica state can be seen in the replica list of the server from the Tree view or the list of Partitions and Servers. The replica's current data will be overwritten with the data from the master replica.

Although NDS automatically synchronizes the Directory data among replicas (so that each replica is sent the most recently updated Directory objects), this operation lets you manually synchronize the Directory objects of replicas if any non-master replicas get out of sync.

Perform this operation if a replica becomes corrupted or has not received updated data for an extended period of time.

From the **Partition Continuity** view, you can identify which replicas are out of sync with the data of the master replica. They will appear in the partition grid with an exclamation point (**!**) on the replica icon. For example, a

read/write replica with a synchronization error will appear in the grid as .

If any replicas are out of sync, you should receive updates from the master replica.

You cannot choose this option from a master replica. The master replica is assumed to be the most current and accurate copy of the partition. If it's not, assign one of the other replicas to be the master using the **Change Replica Type** operation. The current master replica will be changed automatically to read/write.

Note: This operation may create a lot of network traffic, so it is best to run this operation during a period of light network traffic.

Options

Server

Identifies the server that holds the replica to be updated by the master.

Partition

Identifies the partition whose master will broadcast updates to the chosen replica.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Remove Server

Warning: Misuse of this operation can cause irrevocable damage to the NDS* tree.

If a server that is no longer in the tree appears in the replica ring, instead of using the remove server operation, perform a Delete Server operation to delete the server's object.

Over a period of time, the server object will be deleted and the replica ring will be updated accordingly. (This period of time ranges from minutes to several hours.)

If the NDS tree is sufficiently damaged to prevent a delete server operation from completing normally, or if a server exists in the replica list which no longer has a replica of the partition, you may then have to use this operation.

Remove a server from a replica list when other servers are trying to synchronize with a server that has no replicas of the partition.

For example, in the Partition Continuity view---or upon running DSTRACE on the server---you might find errors indicating that a server still has record of another server in its replica list; when, in fact, the second server no longer contains a replica of the partition in question.   Use the Remove Server operation to remove the second server from the first server's replica list.

Note: NDS Manager will attempt a safer Delete Replica operation each time a Remove Server request is made.   If the Delete Replica cannot be done, NDS Manager will prompt the user to continue and on a positive response will go forward with the Remove Server operation.   If NDS Manager is able to do a Delete Replica operation, the in-process dialog will reflect this in the titlebar and no log file will be displayed afterward.   If the Remove Server operation is done, NDS Manager will display the log file upon completion of the operation.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Remove Servers

One or more servers in the **target servers to be updated** field has a newer version of DS.NLM (NDS) than the source server selected. Choose **OK** to remove the servers with a more current DS from the target list.

Or

The servers in the **target servers to be updated** field have a different operating system than the source server selected (for example, the source server may be NetWare 4.10 and target may be 4.11, or vice versa.). Choose **OK** to remove any incompatible target servers from the target list.

Repair Local Database

You can repair your local database records when you find that your NDS* database is corrupted. This operation resolves inconsistencies in the local NDS database so that it can be opened and accessed.

After the repair is completed, a log of the repair operations is displayed. You can inspect the repair operations in the log to see if additional work is needed to complete the repair.

If objects in a replica are damaged, delete the replica and add it back, or receive updates from the master replica to make sure it is synchronized with the other replicas in the partition.

If you choose this option, there will be a short period of time when users will have limited access to resources on the server where you are running this operation.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

■
Repair Network Addresses

You can perform this operation to ensure that the servers in your network are broadcasting correct addresses.

This operation checks the network address of the chosen server in the local NDS* database by searching for the server's name in the local SAP tables.

If the operation finds an address in SAP, it compares this address to the NetWare* Server object's IPX network address property and the address in each replica property of every partition root object. If the address found differs from these, the operation updates it.

If the operation cannot find a SAP name-to-address mapping, it makes no repairs.

If you are getting NDS errors related to communication between servers, you can repair network addresses as an initial troubleshooting operation. This operation will not lock the NDS database and is safe to perform under all circumstances.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Repair Replica

This operation repairs only the chosen replica. Repairing a replica consists of checking the replica ring information on each server that contains a replica and validating the remote ID information.

If you have not performed the Repair Local Database operation within the last 30 minutes, you should do so before performing this operation.

Repair Volume Objects

Purpose

This operation checks the association of all the mounted volumes with the Volume objects in the NDS* database.

If the volume is not associated with a Volume object, this operation looks for a volume in the context of the NetWare* Server object. If the volume is found, then the Volume object is attached to the volume. If it is not found, then this operation attempts to create one.

To create a volume, you must log in with rights to create a Volume object in the server's context.

Options

Validate Trustee IDs

If you choose this option, NDS Manager will validate trustee assignments on the file system with User object IDs, and resolve any that are invalid.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.
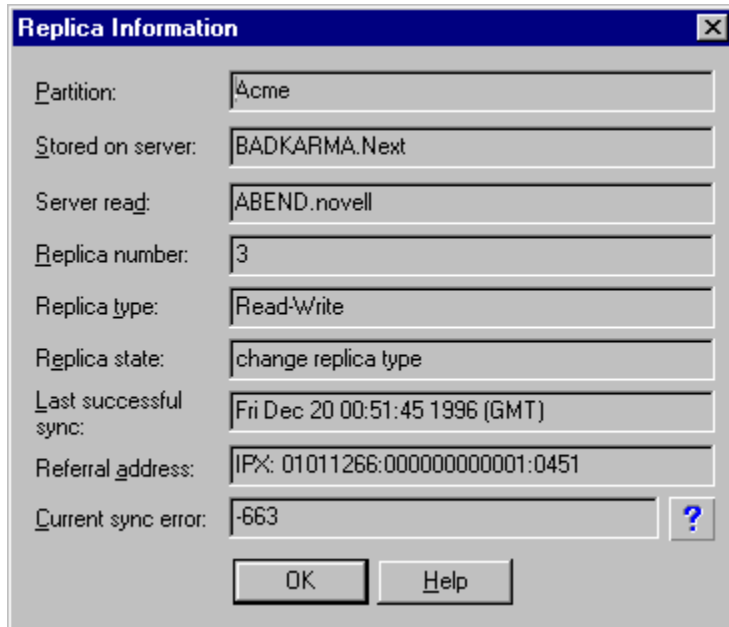
Replica Information

Purpose

If you want to verify that a replica is in an On state and is synchronizing with the rest of the tree, you can view replica information to check the replica's overall health and status. If you identify a synchronization error, you can then Check Partition Continuity of the replica's partition.

Options

For explanations of features, click where ▪ appears.

Replica Information	
Partition:	Acme
Stored on server:	BADKARMA.Next
Server read:	ABEND.novell
Replica number:	3
Replica type:	Read-Write
Replica state:	change replica type
Last successful sync:	Fri Dec 20 00:51:45 1996 (GMT)
Referral address:	IPX: 01011266:000000000001:0451
Current sync error:	-663

OK   Help

Choose Object

Purpose

To locate a container (a context) in the directory, you can browse the Directory tree.

Options

For explanations of features, click where ▪ appears.

Select Object

Acme...

Available objects:

Browse context:

Available objects list:
- Accounting
- Corp_Comm
- Cus_Sat
- Engineering
- Exec_Staff
- Facilities
- HR
- LAN_UK
- Manufacturing
- Marketing
- PR
- Sales
- Services
- WARTHOG_SYS

Browse context list:
- ..
- Accounting
- Corp_Comm
- Cus_Sat
- Engineering
- Exec_Staff
- Facilities
- HR
- LAN_UK
- Manufacturing
- Marketing
- PR

OK

Cancel

Help

Change Context...
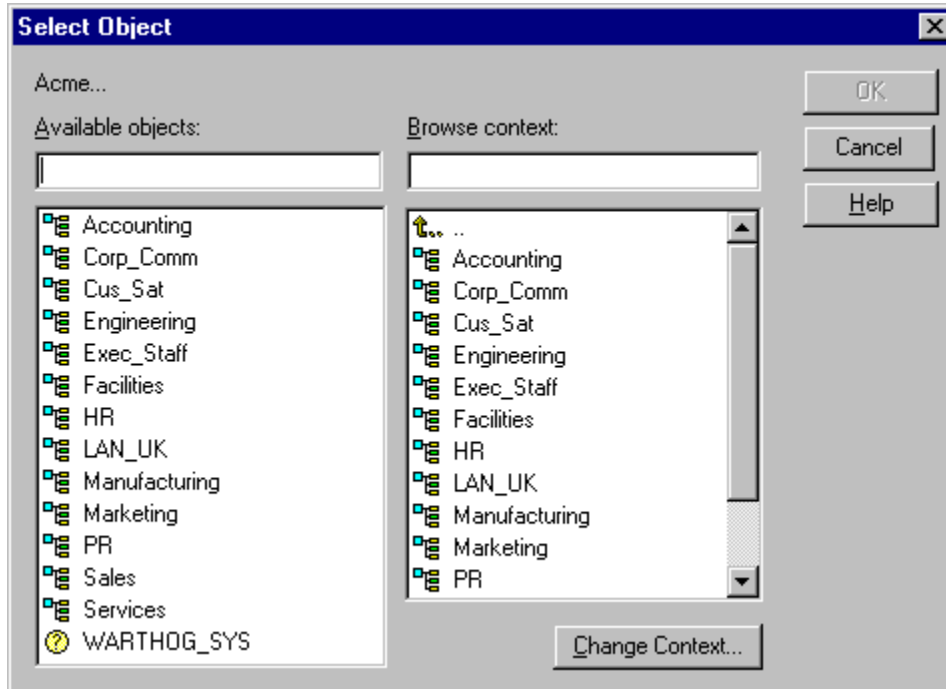
■
Send Updates

Purpose

When you send updates from a replica, the NDS* objects in that replica are broadcast from the server the replica resides on to all the other replicas of the partition, including the master replica.

The other replicas of the partition will combine the new objects sent with the objects they already have. If the other replicas have data in addition to the data sent to them, they will retain that data.

Although NDS automatically synchronizes the Directory data among replicas (so that each replica is sent the most recently updated Directory objects), this operation lets you manually synchronize the Directory objects of replicas if any replicas get out of sync.

Options

Server identifies the server that will broadcast the Directory data from its replica of the partition.

Partition identifies the partition whose data will be sent to each of the replicas.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

■
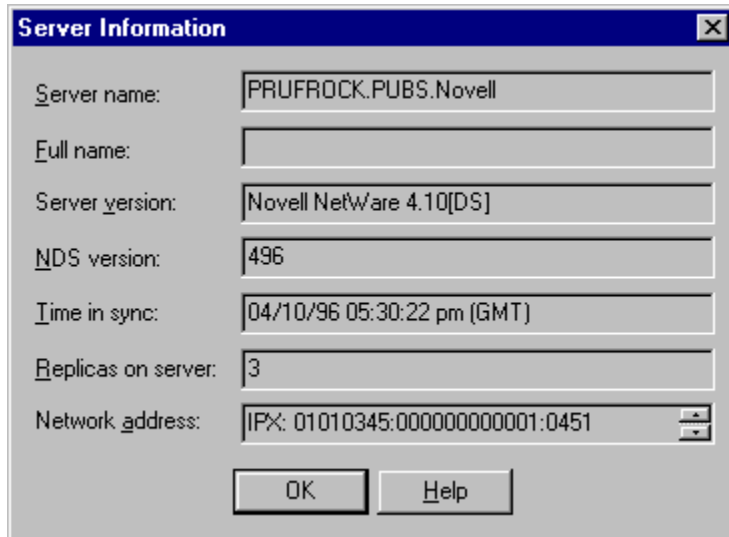
Server Information

Purpose

You can view server information to check the overall health and status of a server in your tree.

Options

For explanations of features, click where ■ appears.

Server Information	✕
Server name:	PRUFROCK.PUBS.Novell
Full name:	
Server version:	Novell NetWare 4.10[DS]
NDS version:	496
Time in sync:	04/10/96 05:30:22 pm (GMT)
Replicas on server:	3
Network address:	IPX: 01010345:000000000001:0451

OK   Help

■
Tree View

Purpose

The Tree view (the default view) is one of the three views you can work from in NDS* Manager (the other two are the list of Partitions and Servers and Partition Continuity).

The Tree view has a hierarchical view that displays only container objects and NetWare* Server objects in the current context. To view containers and servers below your current context, you must browse the tree by expanding containers.

To view a list of all partitions and servers in and below your current context (without having to expand containers), select View > Partitions and Servers, or select ![icon] from the button bar.

To perform repair operations, you must choose a partition and then select Object > Partition Continuity or ■ from the button bar.

Options

For explanations of features, click where ■ appears.
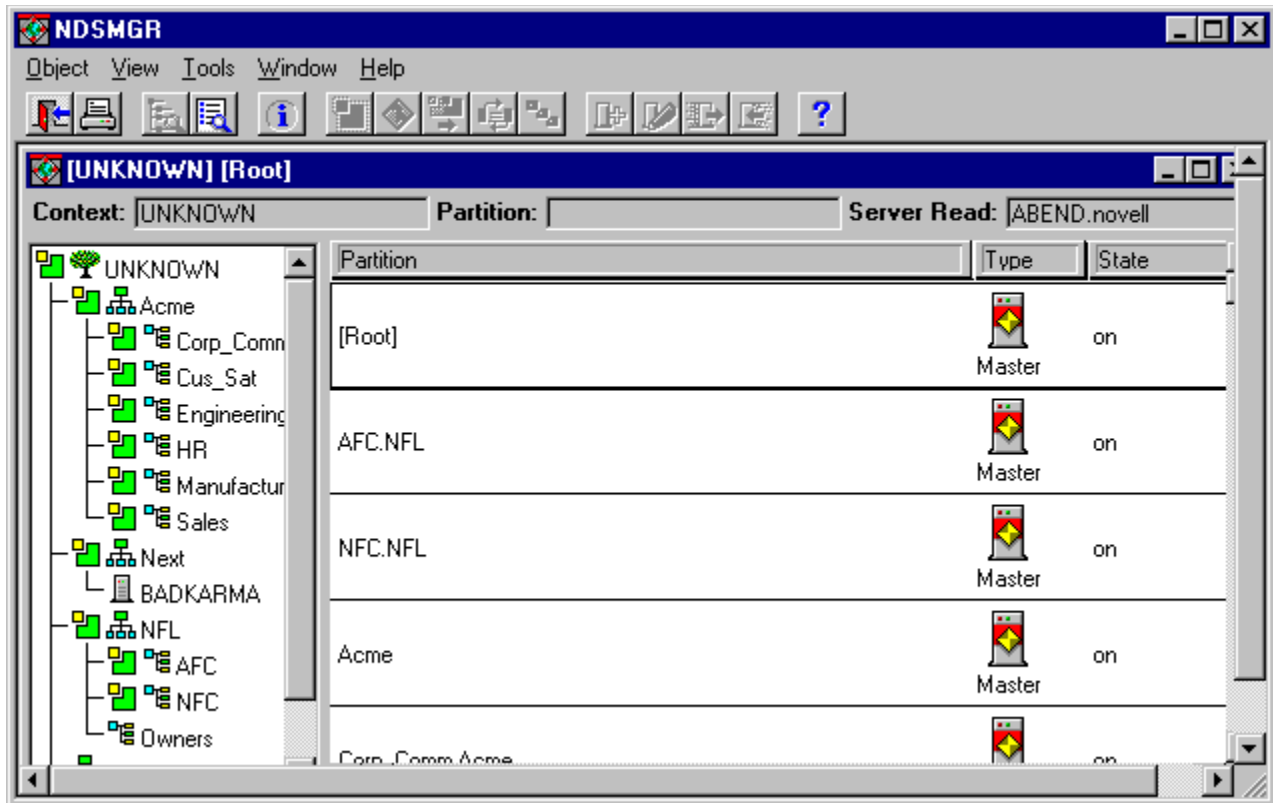
* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Update Synchronization Information

Purpose

This operation will force NDS* Manager to reread the partition status of the chosen partition. You can perform this operation at any time. It is like a refresh of partition status.

You would want to perform this operation if you are receiving NDS errors or if you have performed partition operations recently. After updating the partition status, you can Check Partition Continuity of the chosen partition to identify any synchronization errors.

Options

For explanations of features, click where ■ appears.

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* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

■
Verify Remote Server IDs

In an NDS* tree, the ID for an object is unique on each server. The remote server ID list contains a list of IDs for this server's object as it is found on other servers' databases. If the remote ID is incorrect, this server may return an NDS error, indicating that it cannot authenticate to the remote server.

This operation will verify the remote server's name, the remote server's ID in this server's database, and the remote ID, which is this server's ID as it is found in the remote server's database. If any errors are detected, this operation will attempt to repair the server IDs.

This operation does not lock the NDS database, so you can run this operation as an initial troubleshooting option if you identify NDS errors in **Partition Continuity**.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

■
View NDS Version

Purpose

View the version of NDS* that is running on the servers in your Directory tree to see if they are running the most current versions of the DS.NLM for that operating system release.

In other words, if you notice that certain servers in your tree are running NDS version 463 (a NetWare* 4.1 version of DS.NLM), while others are running version 496 (an updated NetWare 4.1 version of DS.NLM), you should update the server running 463 using the server running 496 as the source.

You can identify which version of NDS is the most current for a particular operating system by accessing NetWire*, Novell's electronic forum.

Options

For explanations of features, click where ■ appears.

View NDS Version	☒
Context:	
Acme	🖳
Servers:	

Name	Version
BOT402.Acme	310
CRAZE.Acme	489
HAKUNA.Acme	556
MATATA.Acme	555
PHILOSO.Acme	489
SAVANNAH.Acme	556

OK   Help
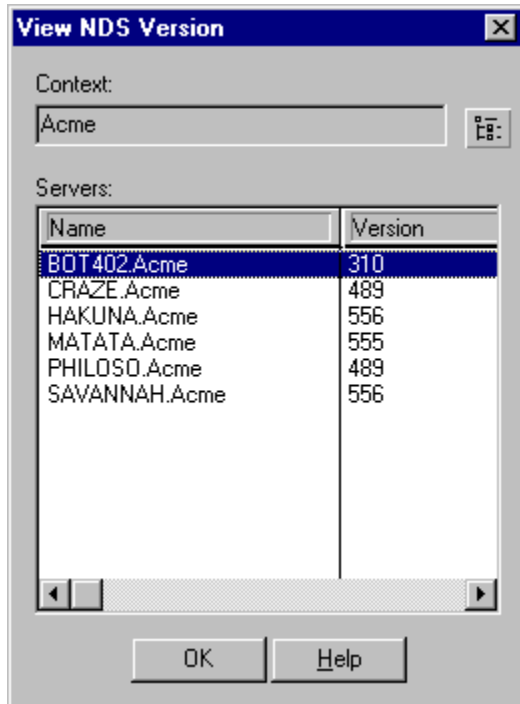
* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

View Log

After you perform a repair operation, NDS Manager displays a log file that should help you identify whether the operation was successful.

For example, if you perform a repair operation, the log file will help you identify whether the operation was successful, or whether you need to perform other operations in order to solve synchronization problems.

The repair log file (DSREPR.LOG) is set internally by NDS Manager. This file can be found in SYS:SYSTEM of the server you run a repair operation on. You can save it to another file when viewing it, but you cannot specify a different log file to be written to. This file is always reset after each repair operation (you cannot append to the file).

View Log File for Version Update

After you perform an NDS Version Update operation, NDS Manager displays this log file to help you identify any errors.

You can specify many options for how NDS Manager writes to the log file for NDS Version Update operations. The location of the update log file defaults to your WINDOWS** directory; however, you can specify a different location in **Preferences** (under the **Object** menu).

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

NDS Manager Installation Instructions

NDS* Manager can be run as a standalone executable from SYS:PUBLIC or as a tool from the **Tools** menu in NetWare* Administrator.

To run NDS Manager as a standalone executable under Windows** 3.1, create an icon that points to NDSMGR16.EXE in SYS:PUBLIC. Under Windows 95**, create an icon or shortcut that points to NDSMGR32.EXE in SYS:PUBLIC\WIN95.

Windows 3.1 Users

To set up NDS Manager so that it can be accessed from the **Tools** menu in NetWare Administrator, if you haven't used NetWare Administrator yet, you need to open and close NetWare Administrator and then edit the NWADMN3X.INI file in the WINDOWS directory. Add the following line to the **[Snapin Object DLLs WIN3X]** section:

>   **NDSMGR = NMSNAP16.DLL**

The next time you launch NetWare Administrator, you should see **NDS Manager** as an option under the **Tools** menu.

If you are running NetWare Administrator with the /N command line parameter (which causes your preferences to be registered in your User object in the Directory), you need to open and close NetWare Administrator and then do the following:

1. Choose the User object of the user who will use NDS Manager.
2. Right-click and choose **Details.**
3. Choose the **Netware Registry Editor** button.
4. Under **Key**, choose **SNAPIN OBJECT DLLS WIN3X**.

   Note: If there is nothing in the Netware Registry Editor, add **SNAPIN OBJECT DLLS WIN3X** by choosing the **Add** button under **Key**.

5. Choose the **Add** button under **Values.**
6. In **Value Name**, enter **NDSMGR.**
7. In **Value**, enter **NMSNAP16.DLL**.
8. Select **String** as the type
9. Choose **Add**

The next time you launch NetWare Administrator, you should see **NDS Manager** as an option under the **Tools** menu.

Windows 95 Users

To set up NDS Manager so that it can be accessed from the **Tools** menu in NetWare Administrator, do the following:

1. Launch the Windows 95 NetWare Administrator (using no command line parameters)
2. From the **Options** menu, choose **Save Settings on Exit**.
3. Close the NetWare Administrator.
4. Run REGEDIT.EXE (the Windows 95 registry editor).
5. Choose **HKEY_CURRENT_USER\Software\NetWare\Parameters\NetWare Administrator**.
6. With **Snapin Object DLLs WIN95** highlighted, from the **Edit** menu, choose **New**, and then choose **String Value**.
7. Type **NDSMGR** and press <Enter>.
8. With **NDSMGR** highlighted, from the **Edit** menu, choose **Modify**.
9. Type **NMSNAP32.DLL** in **Value data** and choose **OK**.

The next time you launch NetWare Administrator, you should see **NDS Manager** as an option under the **Tools** menu.

If you are running NetWare Administrator with the /N command line parameter (which causes your preferences to be registered in your User object in the Directory), do the following:

1. Open the NetWare Administrator for Windows 95.
2. Choose the User object who will use NDS Manager.
3. Right-click and choose **Details**.
4. Choose the **Netware Registry Editor** button.
5. Under **Key**, choose **SNAPIN OBJECT DLLS WIN95**.

   Note: If there is nothing in the Netware Registry Editor, add **SNAPIN OBJECT DLLS WIN95** by choosing the **Add** button under **Key**.

6. Under **Values,** choose **Add**.

7. In **Value Name**, enter **NDSMGR**.

8. In **Value**, enter **NMSNAP32.DLL**.

9. Choose **String** as the type

10. Choose **Add**.

The next time you launch NetWare Administrator, you should see **NDS Manager** as an option under the **Tools** menu.

Windows NT Users

To set up NDS Manager so that it can be accessed from the Tools menu in NetWare* Administrator, do the following:

1. Launch the Windows NT NetWare Administrator (using no command line parameters)

2. From the Options menu, choose **Save Settings on Exit**.

3. Close the NetWare Administrator.

4. Run REGEDT32.EXE (the Windows NT registry editor).

5. Choose **HKEY_CURRENT_USER\Software\NetWare\Parameters\NetWare Administrator**.

6. With **Snapin Object DLLs WINNT** highlighted, choose **Add Value** from the Edit menu.

7. Type NMSNAPNT.DLL in the **Value Name** field.

8. In the **Data Type** field, choose REG_MULTI_SZ from the pulldown menu.

9. Choose **OK**.

10. Type NMSNAPNT.DLL in the **Data** field and choose **OK**.

11. Exit the Registry Editor.

The next time you launch NetWare Administrator, you should see NDS Manager as an option under the Tools menu.

If you are running NetWare Administrator with the /N command line parameter (which causes your preferences to be registered in your User object in the Directory), do the following:

1. Open the NetWare Administrator for Windows NT.

2. Choose the User object who will use NDS Manager.

3. Right-click and choose **Details**.

4. Choose the **NetWare Registry Editor** button.

5. Under **Key**, choose **SNAPIN OBJECT DLLS WINNT**.

   Note: If there is nothing in the NetWare Registry Editor, add SNAPIN OBJECT DLLS WINNT by choosing the **Add** button under **Key**.

6. Under **Values**, choose **Add**.

7. In **Value Name**, enter NDSMGR.

8. In **Value**, enter NMSNAPNT.DLL.

9. Choose **String** as the type.

10. Choose **Add**.

11. Choose **OK**.

12. Exit the Registry Editor.

The next time you launch NetWare Administrator, you should see NDS Manager as an option under the Tools menu.

Access Control

You can control acces to NDS Manager by restricting access to certain files:

- For Windows 3.X: NDSMGR16.EXE and NMSNAP16.DLL
- For Windows 95: NDSMGR32.EXE and NMSNAP32.DLL

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Merge a Partition (With its Parent)

Purpose

When you merge a partition, the partition and its replicas combine with the parent partition, leaving only the parent partition.

You can merge a partition from either the **Tree view** or the list of **Partitions and Servers**.

Merge a Partition

1. Choose the partition you want to merge with its parent partition.

2. Choose **Merge partition** .

3.   Confirm your request.

For more information, see Overview of Merging a Partition.

Move a Partition (a Container)

Purpose

Moving a partition lets you move a subtree in your Directory tree. You can move a partition root object (which is a container object) only if it has no subordinate partitions.

You can move a partition from either the **Tree view** or the list of **Partitions and Servers**.

Move a Partition

1.   Choose the partition you want to move.

2.   Choose **Move partition**.

3.   (Optional) To move the partition to a context besides the root of the current tree, either type a new context in **To Context**, or choose the browse icon ▪ and choose the destination partition from the browser.

4.   (Optional) Check **Create an alias for this container object**.

You should understand <u>why to create an alias when moving a container object</u>.

5.   Choose **Yes**.

6.   Confirm your request.

For more information, including why and when you would create an alias for a container when you move it, see <u>Overview of Moving a Partition</u>.

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Overview of Creating and Merging Partitions

Overview of Creating a Partition

When you create partitions, you make logical divisions of your NDS* tree. These divisions can be replicated and distributed among different NetWare 4* servers in your network.

When you create a new partition, you split the parent partition and end up with two partitions. The new partition becomes a child partition.

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For example, if you choose an Organizational Unit and create it as a new partition, you split the Organizational Unit and all of its subordinate objects from its parent partition.

The Organizational Unit you choose becomes the root of a new partition. The replicas of the new partition will exist on the same servers as the replicas of the parent, and objects in the new partition will belong to the new partition's root object.

A partition consists of at least one container object and its associated subordinate objects. The container at the top of the partition is called the "root" of the partition.

Creating a partition may take some time, since all of the replicas need to be synchronized with the new partition information.

When you create a new partition, NDS Manager informs you that the Create Partition command was issued to NDS. If you attempt another partition operation while the partition is being created, you will receive a message telling you that the partition is busy.

You can look at the replica list for the new partition and know that the operation is complete when all replicas in the list are in an **On** state. You must manually refresh the view periodically, or else the states will not appear to change.

Overview of Merging a Partition

When you merge a partition with its parent partition, the chosen partition and its replicas combine with the parent partition. You do not delete partitions--you only merge and create partitions to define how the Directory tree is split into logical divisions.
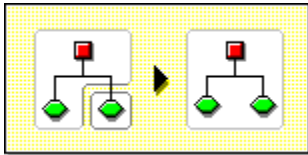
There are several reasons you might want to merge a partition with its parent:

■   The Directory information in the two partitions is closely related

■   You want to delete a subordinate partition but you don't want to delete the objects in it

■   You're going to delete the objects in the partition.

■   You want to get rid of all replicas of the partition (merging a partition with its parent is the only way to delete the partition's master replica)

■   After moving a container (which must be a partition root with no subordinate partitions), you don't want the container to be a partition anymore

■   You experience changes in your company organization, so you want to redesign your Directory tree by changing the partition structure

Consider keeping partitions separate if the partitions are large (contain hundreds of objects), because large partitions slow down network response time.

The root partition in the tree cannot be merged because it is the top partition and has no parent partition to merge with.

The partition is merged when the process is completed on the servers. The operation could take a while to complete.

Warning: Before merging a partition, check the partition synchronization of both partitions and fix any errors before proceeding. By fixing the errors, you can isolate problems in the Directory and avoid propagating the errors or creating new ones.

Make sure all servers that have replicas (including subordinate references) of the partition you want to merge are up before attempting to merge a partition. If a server is down, NDS won't be able to read the server's replicas and won't be able to complete the operation.

If you receive errors in the process of merging a partition, resolve the errors as they appear. Don't try to fix the error by continuing to perform operations--doing so will result in more errors.

Overview of Moving a Partition and Aborting a Partition Operation
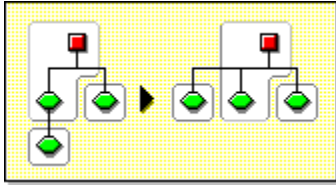
Overview of Moving a Partition

Moving a partition lets you move a subtree in your Directory tree. You can move a partition root object (which is a container object) only if it has no subordinate partitions.

Note: When you move a partition, you must follow NDS* containment rules. For example, you cannot move an Organizational Unit directly under the root of the current tree, because the root's containment rules allow Locality, Country, or Organization, not Organizational Unit.

When you move a partition, NDS changes all references to the partition root object. Although the object's common name remains unchanged, the complete name of the container (and of all its subordinates) changes.

When you move a partition, you probably should choose the option to create an Alias object in place of the container you're moving. Doing so allows users to continue to log in to the network and find objects in their original Directory location.

The Alias object that is created will have the same common name as the moved container and will reference the new complete name of the moved container.

Warning: If you move a partition and do not create an Alias object in place of the moved partition, users who are unaware of the partition's new location will not easily find that partition's objects in the Directory tree, since they will look for them in their original Directory location.

This might also cause client workstations to fail at login if the workstation NAME CONTEXT parameter is set to the original location of the container in the Directory tree.

Because the context of an object changes when you move it, users whose name context references the moved object need to update their NAME CONTEXT parameter so that it references the object's new name.

(To automatically update users' NAME CONTEXT after moving a container object, use the NCUPDATE utility.

After moving the partition, if you don't want the partition to remain a partition, merge it with its parent partition.

Make sure your Directory tree is synchronizing correctly before you move a partition. If you have any errors in synchronization in either the partition you want to move or the destination partition, do not perform a move partition operation. First fix the synchronization errors.

Overview of Aborting a Partition Operation

You can abort a Create or Merge partition operation if the operation has not yet progressed past the stage at which the change is committed.

Use this feature to back out of an operation, or if your NDS network returns NDS errors or fails to synchronize following a partition operation.

Note: If replicas in your Directory tree experience synchronization errors, an abort operation may not always solve the problem. However, you can use this feature as an initial troubleshooting option.

If a partition operation cannot be completed because a server is down (or otherwise unavailable), either make the server visible to the network so the operation can complete, or attempt to abort the operation. If NDS cannot synchronize because the database is corrupted, you should abort any partition operation in progress.

Many partition operations may take considerable time to fully synchronize across the network, depending on the number of replicas involved, the visibility of servers involved, and the existing wire traffic.

If you get an error that says a partition is busy, it doesn't mean that you should abort the operation. You can usually expect partition operations to complete within 24 hours. If a particular operation fails to complete within this time frame, you should then attempt to abort the operation in progress.

Hint: If you are attempting to abort a merge partition operation, choose the partition (the child partition) that is merging with its parent. If you are attempting to abort a create partition operation, choose the parent partition.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Overview of NDS Manager

In NetWare* 4.11, Novell Directory Services* Manager (NDS* Manager) replaces the Partition Manager utility that existed under the **Tools** menu in the NetWare Administrator* utility in earlier versions of NetWare 4.

NDS Manager provides:

- Partitioning and replication services for NDS on a NetWare server

- The ability to repair the NDS database from a client workstation, which reduces the network administrator's dependence on using RCONSOLE

- NDS version update capability so that NetWare 4* servers in a network can be updated to a newer version of DS NLM

- The ability to print a list of partitions in the Directory tree, the partition replica list (the replica ring), and server data

- Diagnostic features which allow the administrator to get a sense of the general condition of the Directory tree

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Setting Preferences and Print Options

NDS* Manager allows you to set preferences for how you want information displayed. You can also print information from any of the NDS Manager views.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Working with NDS Manager

Using NDS* Manager, you can manage partitions, replicas, servers, repair operations, DS.NLM version updates, printing, and preferences.

Working in Views

Most operations can be performed from either the hierarchical **Tree view** or the list of **Partitions and Servers**. They are represented on the button bar by the icons ▪ and

▪ . The other view from which you work in NDS Manager is the **Partition Continuity** view, from which you can view the condition of your tree and perform repair operations. Before using NDS Manager, you should take a few minutes to access these views and become familiar with their features and options.

Performing Operations

You can access the options to perform operations from the button bar, menu bar, or by right-clicking. A right-click of the mouse on a server, replica, or partition will bring up a pop-up menu with most of the available operations for that object.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

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Overview of Adding, Deleting, and Changing Replica Type

To navigate this topic without scrolling, click   **See also**.

Overview of Adding a Replica

Creating multiple NDS* partitions does not, by itself, increase fault tolerance or improve performance of the Directory. However, strategically using multiple replicas does.

Novell* recommends at least three real replicas for each partition if the Directory tree has enough servers to support that number. "Real" replicas means master, read/write, or read-only replicas (subordinate reference replicas are created and managed by NDS, not the administrator).

NDS replication provides:

- Fault tolerance

  If a disk crashes or a server goes down, replicas on servers in other locations can still authenticate users to the network and provide information on objects in partitions stored on the disabled server.

  With the same information distributed on several servers, you are not dependent on any single server to authenticate you to the network or to provide services (such as login).

  A single server can store replicas of multiple partitions.

  Note: Directory replication does not provide fault tolerance for the file system. Only information about Directory objects is replicated.

  To provide fault tolerance for your files, you must mirror or duplex your hard disks and enable the Transaction Tracking System* (TTS*) feature. TTS is enabled by default when the server is installed.

- Faster access across a WAN link

  If users currently use a WAN link to access particular Directory information, you can decrease access time and WAN traffic by placing a replica containing the needed information on a server that users can access locally.

  However, in some cases, WAN traffic could increase due to the amount of synchronization required.

- Faster access to Directory information

  Distributing replicas among servers on the network allows quick and reliable access because information is usually retrieved from the nearest available server containing the specified information.

- Bindery services

  Add a replica of a partition to a server (and set bindery context appropriately) to allow users to access bindery services provided by NDS objects stored in that partition.

  Users will be able to access NDS objects providing bindery services only if real objects exist on that server. Adding a replica of a partition to the server adds real objects to the server and lets users with User objects in that partition log in to the server with a bindery connection.

  If a partition is not stored on a server, the Set Bindery Context command will fail for contexts in the partition.

You can add additional replicas of a partition, within these guidelines:

- You can have only one master replica. Additional replicas must be read/write or read-only.
- You can store only one replica per partition on a server. A single server can store replicas of multiple partitions.

  Most replicas should be read/write. Read/write replicas can be written to. They can handle object viewing, object management, and user login, just as the master replica can. They send out information for synchronization when a change has been made.

  Read-only replicas cannot be written to. They allow object searching and viewing, and they are updated when the replicas of the partition synchronize.

Overview of Deleting a Replica

Deleting a replica removes the replica of the partition from a server.

If you want to remove a server from the Directory tree, you could delete replicas from the server before removing it. Removing the replicas reduces the chance of having problems removing the server.

You can also reduce synchronization traffic on the network by removing replicas. Keep in mind that you probably don't want more than six replicas of any partition.

Note: You cannot delete a master replica or a subordinate reference..

If the replica you want to delete is a master, you have two options:

- Go to a server with another replica of the partition and make it the new master replica.

  This automatically changes the master replica to a read/write replica, which you can then delete.

- Merge the partition with its parent partition.

  This merges the replicas of the partition with those of its parent and removes them from the servers they reside on. Merging removes partition boundaries, but not the objects. The objects continue to exist on each server which held a replica of the "joined" partition.

When you delete replicas, keep the following guidelines in mind:

- For fault tolerance, you should maintain at least three replicas of each partition on different servers.

- Deleting a replica deletes a copy of part of the Directory database on the targeted server.

  The database can still be accessed on other servers in the network, and the server that the replica was on still functions in NDS.

  You cannot delete or manage subordinate reference replicas. They are created automatically on a server by NDS when the server contains a replica of a partition but not of that partition's child.

Overview of Changing Replica Type

You can change the type of a read/write or a read-only replica. However, you cannot use a change replica type operation to change the master replica to a different type.

You cannot change the type of a master replica, but a read/write or read-only can be changed to a master---and the master will be changed automatically to a read/write replica.

Most replicas should be read/write. Read/write replicas can be written to by client operations. They send out information for synchronization when a change has been made. Read-only replicas cannot be written to by client operations. However, they are updated when the replicas synchronize.

You cannot change the replica type of a subordinate reference. To place a replica of a partition on a server which currently has a subordinate reference requires an Add replica operation.

A subordinate reference replica is not a complete copy of a partition. The placement and management of subordinate reference replicas is handled by NDS. They are created automatically on a server by NDS when the server contains a replica of a partition but not of that partition's child.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Repairing the NDS Database

To navigate this topic without scrolling, click   **See also**.

Overview of Verifying Remote Server IDs

In an NDS* tree, the ID for an object is unique on each server. The remote server ID list contains a list of IDs for this server's object as it is found on other servers' databases. If the remote ID is incorrect, this server may return an NDS error, indicating that it cannot authenticate to the remote server.

This operation will verify the remote server's name, the remote server's ID in this server's database, and the remote ID, which is this server's ID as it is found in the remote server's database. If any errors are detected, this operation will attempt to repair the server IDs.

This operation does not lock the NDS database, so you can run this operation as an initial troubleshooting option if you identify NDS errors in **Partition Continuity**.

Overview of Repairing a Replica

Repairing a replica consists of checking the replica ring information on each server that contains a replica, and validating the remote ID information. This operation repairs only the chosen replica.

If you have not performed the Repair Local Database operation within the last 30 minutes, you should do so before performing this operation.

Overview of Repairing Network Addresses

You can repair network addresses to ensure that the servers in your network are broadcasting correct addresses.

This operation checks the network address for every server in the local database by searching for the server's name in the local SAP tables.

If this operation finds an address in SAP, it compares this address to the NetWare* Server object's IPX network address property and the address in each replica property of every partition root object.

If the address it finds differs from these, this operation updates it. If this operation cannot find a SAP name-to-address mapping, then it cannot make a repair for that server.

If you are getting DS errors related to communication between servers, you can repair network addresses as a troubleshooting option since it will not lock the NDS database.

Overview of Repairing Local Database

You can repair your local database records when you find that your NDS database is corrupted. This operation resolves inconsistencies in the local Directory database so that it can be opened and accessed.

After the repair is completed, a log of the repair operations is displayed. Inspect the repair operations in the log to see if additional work is needed to complete the repair.

If objects in a replica are damaged, delete the replica and add it back, or receive updates from the master replica to make sure it is synchronized with the other replicas in the partition.

If you choose this option, there will be a short period of time when users will have limited access to resources on the server where you are running this operation.

Overview of Assigning a New Master Replica

Important: Don't use this feature to change a replica type. This is a repair feature that should only be used when the current master replica is corrupted or lost.

Assign a new master replica if the current master replica is corrupted or if the server the current master resides on loses data integrity or experiences hardware failure.

You need a master replica to perform operations with a partition. Assigning a new master replica allows you to convert an existing replica to the master replica, and allows you to perform partitioning operations.

Overview of Removing a Server from a Replica List

Warning: Misuse of this operation can cause irrevocable damage to the NDS* tree.

If a server that is no longer in the tree appears in the replica ring, instead of using the Remove Server operation, perform a Delete Server operation to delete the server's object.

Over a period of time, the server object will be deleted and the replica ring will be updated accordingly. (This period of time ranges from minutes to several hours.)

If the NDS tree is sufficiently damaged to prevent a Delete Server operation from completing normally, or if a server

exists in the replica list which no longer has a replica of the partition, you may then have to use this operation.

Remove a server from a replica list when other servers are trying to synchronize with a server that has no replicas of the partition.

For example, in the Partition Continuity view---or upon running DSTRACE on the server---you might find errors indicating that a server still has record of another server in its replica list; when, in fact, the second server no longer contains a replica of the partition in question.   Use the Remove Server operation to remove the second server from the first server's replica list.

Note: NDS Manager will attempt a safer Delete Replica operation each time a Remove Server request is made. If the Delete Replica cannot be done, NDS Manager will prompt the user to continue and on a positive response will go forward with the Remove Server operation. If NDS Manager is able to do a Delete Replica operation, the in-process dialog will reflect this in the titlebar and no log file will be displayed afterward. If the Remove Server operation is done, NDS Manager will display the log file upon completion of the operation.

Overview of Repairing Volume Objects

This operation checks the association of all the mounted volumes with Volume objects in the Directory.

If the volume is not associated with a Volume object, this operation looks for one in the context of the NetWare Server object. If the volume is found, then the Volume object is attached to the volume.

If the volume is not found, then this operation attempts to create one.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Synchronizing the NDS Database

To navigate this topic without scrolling, click **See also**.

Overview of Synchronizing a Partition Immediately

Although Novell Directory Services* (NDS*) automatically synchronizes the Directory data of replicas (so that each replica is sent the most recently updated data), you can manually synchronize the Directory data of replicas if any replicas get out of sync.

When you choose to synchronize immediately, every server that holds a replica of the partition you choose will attempt to synchronize its replica information with the replica information on the other servers.

You can perform this operation to synchronize changes you recently made to Directory data. For example, if you modified system or user login scripts, you can synchronize those changes so users can be authenticated to the network immediately.

Overview of Receiving Updates from the Master Replica

This operation forces the replica on the chosen server to receive all NDS objects from the master replica of the partition. While in process, this operation marks the replica on the chosen server as a new replica (the replica state can be seen in the replica list of the server from the **Tree view** or the list of **Partitions and Servers**).

The replica's current data will be overwritten with the data from the master replica.

Although Novell Directory Services automatically synchronizes the Directory data among replicas (so that each replica is sent the most recently updated Directory objects) this operation lets you manually synchronize the Directory objects of replicas if any non-master replicas get out of sync.

Perform this operation if a replica becomes corrupted or has not received updated data for an extended period of time.

From the **Partition Continuity** view, you can identify which replicas are out of sync with the data of the master replica. They will appear in the partition grid with an exclamation point (**!**) on the replica icon. For example, a read/write replica with a synchronization error will appear in the grid as ▪ .

If any replicas are out of sync, you should receive updates from the master replica.

You cannot choose this option from a master replica. The master replica is assumed to be the most current and accurate copy of the partition. If it's not, assign one of the other replicas to be the master using the **Change Replica Type** operation. The current master replica will be changed automatically to read/write.

Note: This operation may create a lot of network traffic, so it is best to run this operation during a period of light network traffic.

Overview of Sending Updates from a Replica

When you send updates from a replica, the Directory objects in that replica are sent from the server the replica resides on to all the other replicas of the partition, including the master replica.

The other replicas of the partition will combine the new objects sent with the objects they already have. If the other replicas have data besides the data sent to them, they will retain that data.

Although Novell Directory Services (NDS) automatically synchronizes the Directory data among replicas (so that each replica is sent the most recently updated Directory objects) this operation lets you manually synchronize the Directory objects of replicas if any replicas get out of sync.

Overview of Viewing Synchronization Errors

In the **Partition Continuity** view, if the chosen partition has synchronization errors, those errors will appear as exclamation points on replica icons. For example, an error on a read/write replica would appear in the partition grid as ▪ .

You can view the details about the synchronization error---possible causes and solutions---by double-clicking the replica icon and then choosing Help [?] from **Current Sync Error**.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Viewing and Updating Version of NDS

Overview of Viewing the NDS Version on Servers in a Container

View the version of NDS* that is running on the servers in your Directory tree to see if they are running the most current versions of DS.NLM for that operating system release.

In other words, if you notice that certain servers in your tree are running NDS version 463 (a NetWare 4.1 version of DS.NLM), while others are running version 496 (an updated NetWare 4.1 version of DS.NLM), you should update the server running 463 using the server running 496 as the source.

You can identify which version of NDS is the most current for a particular version of NetWare by accessing NetWire* (Novell's electronic forum), or Novell's home page on the World Wide Web.

Overview of Updating Version of NDS on a Server

You should update the version of NDS on a server whenever you receive an updated DS.NLM. Updated versions of the DS.NLM are available, and periodically sent out, on NetWire (Novell's electronic forum).

Each update of NDS fixes problems and increases functionality. When a new version of NDS is released, the new features in NDS are not available unless all servers in a partition's replica ring are running the same version of NDS.

Important: Version update does not support updates across operating system releases. In other words, this feature **will not** update a NetWare 4.1 server's version of NDS to a NetWare 4.11 version of NDS. This feature **will** update NetWare 4.1 servers running an older version of NDS (such as 463) to a newer version of NDS for NetWare 4.1 (such as 489).

If a new version of the NetWare 4.11 NDS is released on NetWire, you can update your NetWare 4.11 servers with the new version.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

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Overview of Viewing Partition Data

To navigate this topic without scrolling, click   **See also**.

Overview of Checking the Synchronization Status of a Partition

Perform this operation as a low-level diagnostic check since it is safe to perform under all circumstances. NDS* Manager reads the partition status attribute for each partition to determine any synchronization errors.

This operation allows you to check the synchronization status of partitions in your tree. If you run this operation from the **Tree view**, you can check the status of the chosen partition only. If you run this operation from the list of **Partitions and Servers**, you can check the status of all the partitions in your Directory tree.

NDS Manager displays the findings of the synchronization check in a dialog box. You can then check the partition continuity of any partitions that have returned errors, and then run repair operations on those partitions.

This operation may provide incomplete information since it only checks for synchronization errors on the first server in the replica list that responds to the request. (Synchronization errors may be occurring on other servers in the replica list.)

To check for synchronization errors among all servers that hold a replica of the chosen partition, go to the **Partition Continuity** view.

Overview of Checking Partition Continuity

To check partition continuity ("walk the replica ring" of a partition) is to examine all of the servers holding replicas of a selected partition and to verify that each server has the same information for the partition's replica list (or replica ring).

If each server holding a replica of the chosen partition does not have an identical replica list, or if a replica cannot synchronize with the Directory tree for any reason, then the **Partition Continuity** view display one or more errors.

Errors appear as exclamation points inside the replica icons and look like the following:

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To get context-sensitive help on an error, double-click the icon and from the **Replica Information** dialog box. choose Help ■ next to **Current Sync Error**.
Note: You may also see icons representing unreadable replicas. Unable to read icons do not necessarily signify that the servers can't talk, but at the very least, there is some reason the client cannot contact the server for information.

Overview of Viewing the Partitions on a Server

You can choose a NetWare* Server object and view which partitions have replicas stored on it and the type of each partition's replica. Each partition is specified by the complete name of the container object at the root of the partition.

You can see how many partitions are stored on the server.

You might want to view the partitions stored on a server if you are planning to remove a NetWare Server object from the Directory tree. In this case, you could view the replicas you need to remove before removing the object.

Overview of Viewing a Partition's Replicas

You can choose a partition and view its replica list. This operation lets you identify**:**

- Which servers the partition's replicas reside on
- Which server holds the master replica of the partition
- Which servers have read/write, read-only, and subordinate reference replicas of the partition

Overview of Viewing Information about a Partition

You can view the following details about a partition:

- Its complete name
- The server which holds the master replica.. This is a complete name.
- The number of read/write, read-only, master, and subordinate reference replicas of the partition
- The time of its last successful synchronization

- The time of its last attempted synchronization

You can gather most of the information about a partition without leaving the main view you're working from. When you choose a partition in the browser, the replica pane on the right of the browser displays replica information for the partition.

The most significant reason to view information about a partition is to identify its synchronization information. For example, if the time of a partition's last successful synchronization is earlier than the time of its last attempted synchronization, you know that the partition may have. synchronization errors. (This information about synchronization time is not available on NDS versions prior to 489).

Overview of Viewing Partition Hierarchy

You can view the hierarchy of partitions in your Directory tree from the **Tree view**. This view allows you to browse the logical structure of the partitions in your Directory tree by expanding and collapsing container objects. In other words, you can see which partitions are parent and which are child partitions.

Overview of Viewing a List of all Partitions in the Tree

You can view a flat list of partitions in your Directory tree from the list of **Partitions and Servers**.

If you want to simply list the partitions in your tree (from a certain context), use this view. If you need to see which partitions are parent and child partitions (the partition hierarchy), you must go to the **Tree view**.

Overview of Viewing Replica Data

Overview of Viewing the Replica List of a Partition

From either the **Tree view** or the list of **Partitions and Servers**, you can choose a partition and view:

- The replicas of that partition
- The type of each replica
- The state of each replica
- The server each replica is stored on

However, from either of these two views, you will not get a complete list of each server's view. The replica list shown is the view of the first server to respond to the request. The **Replica read** field in the information bar tells which server was read.

Other servers holding a replica of the chosen partition may have different views of where the partition's replicas are stored.

To get a complete view of a partition's replica list, use the **Partition Continuity** view. This view displays all of the servers that hold a replica of the chosen partition, as well as each server's view of where replicas of the chosen partition are stored.

Overview of Viewing Replica Information

This is a safe operation that you can perform under all circumstances.

The most significant reason to view information about a replica is to view its synchronization information. (You can gather most of the information about a replica without leaving the main view you're working from.)

This operation allows you to view the following details about a replica:

- Which partition the replica is a copy of
- The server it is stored on
- Its replica number
- Its type
- Its state
- The last time it was successfully synchronized
- Its referral address
- Its current synchronization errors

  You can also get additional help on the specific synchronization error by pushing the blue question mark button at the end of the error number line.

Overview of Viewing Server Information and Deleting a Server

View Information about a Server

You can gather most of the information about a server without leaving the main view you're working from. When you choose a server, its replica information is displayed in the replica pane on the right.

The most significant reason to view information about a server is to view its synchronization information.

You can view information about a server from the **Tree view**, the list of **Partitions and Servers**, or the **Partition Continuity** view.

View a List of Servers in the Directory

From the list of **Partitions and Servers**, you can view a list of the servers in and below your current context in the Directory tree. In other words, if you set your context to the root of your tree, you can view every server that exists in your tree without having to search the Directory tree by expanding containers in the **Tree view**.

This list takes longer to build than the **Tree view**.

Overview of Deleting a NetWare Server Object

Warning: Deleting a NetWare* Server object **permanently** removes the object from your Novell Directory Services* tree (the server still has SAP capabilities unless it is permanently down).

It also permanently removes the server's data and resources from the network.

Deleting a NetWare Server object may corrupt your NDS database, especially if the NetWare Server object provides NDS database services (such as storing replicas).

Use NDS Manager to remove the replicas on the NetWare server and avoid deleting a NetWare server that stores the only replica of a partition of the Directory tree.

You want to delete a server when:

- The server's hard drive goes bad and you want to reinstall the server.
- You no longer need that resource in the tree due to company downsizing.

There are several ways to go about deleting a NetWare Server object:

One option (although we don't recommend this) is to bring a NetWare server down and delete its object.Then, reinstall NDS on the server using INSTALL.NLM at the server, or recreate the object after bringing the server back up.You will have to use NetWare Administrator to delete Volume objects associated with the deleted NetWare Server object.

Do not delete a server if you merely wish to move it to a new context. Use the NetWare Administrator to move the server object and its associated volume objects to another context.

If the server is functioning properly, do the following **before** deleting it:

- Change the master replicas stored on this server to read/write replicas and then delete all replicas on the NetWare server.
- Remove NDS from the server with the INSTALL.NLM. This procedure protects your NDS database from losing services. (This procedure will also delete the server for you.)

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

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Overview of Working with Partitions

NDS* Manager allows you to manage partitions in your Directory tree. You can manage the placement of partition boundaries in your Directory tree, and you can view partition data.

There are some general guidelines to follow when performing partition operations:

■ Make sure your Directory tree is synchronizing correctly before you move a partition.

You should check a partition's synchronization status before performing any operations. If you have synchronization errors, fix the synchronization errors before proceeding with the operation.

■ If possible, always perform partition operations with the latest version of DS.NLM.

■ After performing a partition operation, you need to wait for processes throughout the Directory to complete before you can perform an operation with that partition again.

Even though a partition operation may appear completed in NDS Manager, NDS requires time to synchronize any changes to a partition with the replicas of the partition.

Many partition operations may take considerable time to fully synchronize across the network. While you can expect partition operations to complete within a few hours, the amount of time required for NDS to synchronize the changes in the Directory depends on:

■ The number of objects in the partition
■ The number of replicas that must be synchronized
■ The location of the replicas (they could be on a server across a WAN, for example)
■ The visibility of servers involved
■ Existing wire traffic

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Working with Preferences and Print Options

Like most programs with a graphical user interface, NDS* Manager allows you to set preferences for how information is displayed each time you run NDS Manager and how NDS Version Update behaves.

You can print hard copies of the information that appears in NDS Manager.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Overview of Working with Repair Operations

Perform repair operations when you find synchronization errors or other problems in your NDS* database.

Most repair operations actually run DSREPAIR.NLM on the server. Any errors received during a repair operation are saved in a log file and displayed once the operation is complete.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Working with Replicas

NDS* Manager allows you to manage partition replicas. You can manage both the number and type of replicas on a server. You can also view information about replicas so you can monitor their synchronization status or troubleshoot any errors.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Overview of Working with Servers

You can

- View information about a server
- Delete a server
- View and update the NDS* version on a server

Since replicas of partitions are stored on servers, any time you perform an operation that affects a partition or a replica, you are affecting the information that is stored on a server.

For a list of these operations, see <u>Working with Repairs and Updates</u>.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

Print Object Information

Purpose

You can print the information about a partition, replica, or server.

You can print object information from the **Tree view** or from the list of **Partitions and Servers**.

Print Object Information

1. From the **Object** menu, choose **Print**.

   For information and instructions on choosing specific options, choose **Help**.

Print Replica List of a Partition

Purpose

You can print the replica list (the replica ring) of a partition. The replica list shows each server that has a replica of the chosen partition, and each server's replica table.

You can print the replica list of a partition from the **Partition Continuity** view.

Print a Replica List of a Partition

1. From the **File** menu, choose **Print**.

   For information and instructions on choosing specific options, choose **Help**.

Receive Updates from Master Replica

Purpose

This operation deletes the Directory data of a replica and replaces it with data from the master replica of the partition. Choose this option if the replica is corrupted or has not received updated data for an extended period of time.

You can receive updates from the master replica from the **Tree view**, the list of **Partitions and Servers**, or the **Partition Continuity** view.

Receive Updates from the Master Replica

1. Choose the server (the row) whose replica you want to receive updates.

    Note: You cannot perform this operation on a master replica. A master replica cannot receive updates from itself.

2. Choose **Receive Updates** .
3.   Confirm your request.

For more information, see <u>Overview of Receiving Updates from Master Replica</u>.

Remove a Server from a Replica List

Purpose

Warning: Misuse of this operation can cause irrevocable damage to the NDS* tree.

If a server that is no longer in the tree appears in the replica ring, instead of using the Remove Server operation, perform a Delete Server operation to delete the server's object.

Over a period of time, the server object will be deleted and the replica ring will be updated accordingly. (This period of time ranges from minutes to several hours.)

If the NDS tree is sufficiently damaged to prevent a Delete Server operation from completing normally, or if a server exists in the replica list which no longer has a replica of the partition, you may then have to use this operation.

Remove a server from a replica list when other servers are trying to synchronize with a server that has no replicas of the partition.

For example, in the Partition Continuity view---or upon running DSTRACE on the server---you might find errors indicating that a server still has record of another server in its replica list; when, in fact, the second server no longer contains a replica of the partition in question.   Use the Remove Server operation to remove the second server from the first server's replica list.

Note: NDS Manager will attempt a safer Delete Replica operation each time a Remove Server request is made. If the Delete Replica cannot be done, NDS Manager will prompt the user to continue and on a positive response will go forward with the Remove Server operation. If NDS Manager is able to do a Delete Replica operation, the in-process dialog will reflect this in the titlebar and no log file will be displayed afterward. If the Remove Server operation is done, NDS Manager will display the log file upon completion of the operation.

Remove a Server from a Replica List

1. From the **Partition Continuity** view, choose the server (the row) that has a replica in its list that you want to remove.

2. From the **Repair** menu, choose **Remove Server**.

   Use the drop down box in the **Replica** field if you want to change the replica to be removed.

3. Confirm your request.

   The View Log will appear when the operation is complete.

For more information, see <u>Overview of Removing a Server from a Replica List</u>.

■
Repair Volume Objects

Purpose

This operation checks the association of all the mounted volumes with Volume objects in the Directory.

If the volume is not associated with a Volume object, this operation looks for one in the context of the NetWare* Server object. If the volume is found, then the Volume object is attached to the volume.

If the volume is not found, then this operation attempts to create one.

Repair Volume Objects

1. From the **Partition Continuity** view, choose the server (the row) whose Volume objects you want to repair.

2. Choose **Repair Volume Objects**

   Check the **Validate Trustee IDs** option if you want NDS Manager to validate trustee assignments on the file system with User object IDs, and resolve any that are invalid. You might want to do this if you've deleted a lot of User objects that had trustee assignments on that volume. This would remove the trustee assigments on the objects that no longer exist in the tree.

3. Confirm your request.

   The View Log will appear when the operation is complete.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

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Repair a Replica

Purpose

Repairing a replica consists of checking the replica ring information on each server that contains a replica and validating the remote ID. This operation repairs only the chosen replica on the server you select.

If you have not performed the Repair Local Database operation within the last 30 minutes, do so before performing this operation.

Repair a Replica

1. From the **Partition Continuity** view, choose the server (the row) whose replica you want to repair.

2. Choose **Repair Replica** .

3.   Confirm your request.

   The View Log will appear when the operation is complete.

■
Repair Local Database

Purpose

You can repair your local database records when you find that your NDS* database is corrupted. This operation resolves inconsistencies in the local Directory Database so that it can be opened and accessed.

Repair a Local Database

1. From the **Partition Continuity** view, choose the server (the row) whose local database you want to repair.

2. Choose **Repair Local Database** .

3.   Confirm your request.

    The View Log will appear when the operation is complete.

For more information, see Overview of Repairing Local Database.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

Repair Network Addresses

Purpose

You can repair network addresses to ensure that the servers in your network are broadcasting correct addresses.

Repair Network Addresses

1. From the **Partition Continuity** view, choose the server (the row) whose network addresses you want to repair.

2. Choose **Repair Network Addresses** .

3.   Confirm your request.

   The View Log will appear when the operation is complete.

For more information, see Overview of Repairing Network Addresses.

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Related Topics

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Related Topics

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Send Updates from a Replica

Purpose

When you send updates from a replica, the Directory data in that replica is broadcast from the server it resides on to all the other replicas of the partition, including the master replica. The other replicas combine the new information you sent with the data they already have. If the replicas have data besides the data sent to them, they will retain that data.

Choose this option if replicas are corrupted or have not received updated data for an extended period of time.

You can receive updates from the master replica from the **Tree view**, the list of **Partitions and Servers**, or the **Partition Continuity** view.

Send Updates from a Replica

1. Choose the server (the row) whose replica you want to broadcast information.

2. Choose **Send Updates** .

3. Confirm your request.

For more information, see <u>Overview of Sending Updates from a Replica</u>.

Set Preferences

Purpose

Set preferences to create default settings for

- How NDS* Manager displays information
- How it processes NDS version update operations
- Where it stores the log file after performing an NDS version update operation

You can set preferences from the **Tree view** or from the list of **Partitions and Servers**.

Set Preferences

1. From the **Object** menu, choose **Preferences**.

   For information and instructions on choosing specific options, choose **Help**.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

■
Synchronize a Partition Immediately

Purpose

When you choose to synchronize immediately, every server that holds a replica of the partition you choose attempts to synchronize its replica information with the replica information on the other servers.

Synchronize a Partition Immediately

1. From the **Tree view** or the list of **Partitions and Servers**, choose the partition you want synchronized.

2. Choose **Partition Continuity** ■ .

3.   Choose **Synchronize Immediately** .
4.   Confirm your request.

For more information, see <u>Overview of Synchronizing a Partition Immediately</u>.

Trademarks

Novell Trademarks

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Update Version of NDS on a Server

Purpose

Update the version of NDS* on servers in your Directory tree whenever you receive an updated DS.NLM. Updated versions of the DS.NLM are periodically sent out over NetWire* (Novell's electronic forum).

Each update of NDS fixes problems and increases functionality. When a new version of NDS is released, the new features in NDS are not available unless all servers in a partition's replica ring are running the same version of NDS.

Note: After performing a version update, you may notice that after the servers are updated correctly, your client workstation may not recognize they were updated for up to 15 minutes to a half an hour.

Important: Version update does not support updates across operating system releases. In other words, this feature will not update a NetWare* 4.1 server's version of NDS to a NetWare 4.11 version of NDS. This feature will update NetWare 4.1 servers running an older version of NDS (such as 463) to a newer version of NDS for NetWare 4.1 (such as 489).

If a new version of the NetWare 4.11 NDS is released on NetWire, you can update your NetWare 4.11 servers with the new version.

You can update the version of NDS on a server from either the **Tree view** or the list of **Partitions and Servers**.

Update Version of NDS on a Server

1. Choose the NetWare Server object that you want to be the source for version update (the server that will send a copy of its DS.NLM to other servers).

2. From the **Object** menu, choose **NDS Version**, then choose **Update**.

   A dialog box will inform you if any servers in and below the current context in your Directory tree cannot be updated. They will be grayed in the list.

3. From the list of servers on the left, choose the servers whose version of NDS you want updated and choose the right arrow to move them under **Target servers to be updated**.

4. Choose **OK**.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

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Verify Remote Server IDs

Purpose

This operation verifies

- The remote server's name
- The remote server's ID in a server's database
- The remote ID, which is this server's ID as it is found in the remote server's database

If any errors are detected, this operation will attempt to repair the server IDs.

Verify Remote Server IDs

1. From the **Partition Continuity** view, choose the server (the row) you want to verify remote server IDs on.

2. Choose **Verify Remote IDs** .

3. Confirm your request.

    The View Log will appear when the operation is complete.

For more information, see Overview of Verifying Remote Server IDs.

■

View a Partition's Replicas

Purpose

You can choose a partition and view its replica list. This operation lets you identify

- Which servers the partition's replicas reside on
- Which server hosts the master replica of the partition
- Which servers have read/write, read-only, and subordinate reference replicas of the partition
- The state of each of the partition's replicas

You can view a partition's replicas from either the **Tree view** ■ or the list of **Partitions and Servers** ■ .

View a Partition's Replicas

1. Choose a partition.

   The servers which contain replicas of the chosen partition are shown in the replica pane on the right of the browser.

View Information about a Partition

Purpose

This is a safe operation that you can perform under all circumstances.

The most significant reason to view information about a partition is to view its synchronization information. (You can gather most of the information about a partition without leaving the main view you're working from.)

You can view information about a partition from the Tree view, the list of Partitions and Servers, or the Partition Continuity view.

View Information about a Partition from the Tree view or the List of Partitions and Servers

1. Choose the partition you want information about.

2. Right-click and choose **Information.**

View Information about a Partition from Partition Continuity

1. From the **Repair** menu, choose **Information**, then choose **Partition.**

■
View Information about a Replica

Purpose

This is a safe operation that you can perform under all circumstances.

The most significant reason to view information about a replica is to view its synchronization information. (You can gather most of the information about a replica without leaving the main view you're working from.)

View Information about a Replica

1. From either the Tree view or the list of Partitions and Servers, choose a partition or a NetWare* Server object.

2. Right-click on a replica and choose **Information.**

To view replica information from the Partition Continuity view, right-click a replica in the grid and choose **Information.**

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

■
View Information about a Server

Purpose

You can gather most of the information about a server without leaving the main view you're working from. When you choose a server, its replica information is displayed in the replica pane to the right.

The most significant reason to view information about a server is to view its synchronization information.

You can view information about a server from the **Tree view**, the list of **Partitions and Servers**, or the **Partition Continuity** view

View Information about a Server from the Tree view or the List of Partitions and Servers

1. Choose the NetWare* Server object you want information about.

   Note: The list of **Partitions and Servers** is the easiest place to access server information. If you go to the **Tree view**, you will have to browse the tree by expanding partition root objects until you find the NetWare Server object you want information about.

2. Choose **Information** .

View Information about a Server from the Partition Continuity View

1. Right-click a server name (in the far left column) and choose **Information**.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

View Information about an Alias

Purpose

You can view the origin of an alias.

View information about an Alias

1. Double-click an alias object to view the aliased object.

•
View List of Partitions in the Tree

Purpose

This operation allows you to view a list of all the partitions in your Directory tree in and below your current context.

If your Directory tree is large (hundreds of partitions) and you perform this operation from the root of your tree, you might have to wait several minutes while the list builds.

To avoid waiting long periods of time, perform this operation from a given context.

View a List of All Partitions in the Directory Tree

1. Choose **Tree view** ■ .
2. Navigate to and highlight the root of the current tree.
3. Choose **Partitions and Servers** ■ .
4. The list of partitions in the current context is built under the **Partitions** heading (in alphabetical order).

View the Partitions in a Given Context

1. Choose **Tree view** ■ .
2. Navigate and highlight the container that you want to set as the new context.
3. Right-click and choose **Set Context**.
4. Choose **Partitions and Servers** ■

■
View a List of Servers in the Directory

Purpose

This operation allows you to view a list of the servers in your Directory tree in and below your current context.

If your Directory tree is large (hundreds of partitions and servers) and you perform this operation from the root of your tree, you might have to wait several minutes while NDS Manager builds a list of all the servers in your Directory tree.

To avoid waiting long periods of time, perform this operation from a given context. To do so, follow the second procedure below.

This list takes longer to build than the hierarchical **Tree view**, so in large trees, you need to be patient.

View a List of All Servers in Your Directory Tree

1. Choose **Tree view** ■ .
2. Navigate to and highlight the root of the current tree.
3. Choose **Partitions and Servers** ■ .
   The list of servers in the current context is built under the **Servers** heading in alphabetical order.

View the Servers in a Given Context

1. Choose **Tree view** ■ .
2. Navigate and highlight the container that you want to set as the new context.
3. Right click and choose **Set Context.**
4. Choose **Partitions and Servers** ■
   The list of servers in the current context is built under the **Servers** heading in alphabetical order.

■
View Partition Hierarchy

Purpose

You can easily view the partition hierarchy in your Directory tree from the **Tree view**. In the browser on the left side of the **Tree view**, you can expand container objects to view which partitions are parent and which are child partitions.

View the Partition Hierarchy in Your Directory Tree

1. Expand a partition root object by double-clicking the object.

   Note: The partition icon signifies a partition root object.

   You can collapse the subtree by double-clicking the object again.

■
View Replica List of a Partition

Purpose

You can view the replica list of a partition from any view in NDS* Manager.

View the Replica List of a Partition

1. From either the **Tree view** or the list of **Partitions and Servers,** choose a partition.

The servers which contain replicas of the chosen partition are shown in the replica pane to the right of the browser.

To examine all of the servers holding replicas of a chosen partition and to verify that each server has a similar view of the partition's replica list (or replica ring), you must Check Partition Continuity ("walk the replica ring" of a partition).

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

View Synchronization Errors

Purpose

When working in the **Partition Continuity** view, you may see an error on one of the replicas in the grid. An error appears as an exclamation point (**!**) on a replica icon.

For example, an error on a read-only replica would appear in the partition grid as ▪ .

You can view context-sensitive help about the error on the replica. The help provides possible causes and solutions to the error.

View Synchronization Errors

1. Double-click the replica with the error.

2. From the **Replica Information** dialog, click Help ▪ next to **Current Sync Error**.

■

View the Partitions on a Server

You can view which partitions are allocated to a server by selecting a NetWare* Server object and viewing its replica list. This is a routine operation that is safe under all circumstances.

You can view the partitions on a server from either the **Tree view** ■ or the list of **Partitions and Servers** ■ .

View the Partitions on a Server

1. Choose a NetWare Server object.

   If you are in the **Tree view**, you might have to browse down the Directory tree until you find the NetWare Server object whose partitions you want to view.

   Once you have highlighted the NetWare Server object, the partitions stored on the chosen server, as well as the partition's replica type, are shown in the replica pane on the right of the browser.

For more information, see <u>Overview of Viewing the Partitions on a Server</u>.

* Novell trademark.   ** Third-party trademark.   For more information, see <u>Trademarks</u>.

View Version of NDS on Servers in a Container

Purpose

View the version of NDS* (DS.NLM) on all the servers in a container object to determine whether to update the DS.NLM on any servers. If the version of NDS on a server is not the most current version in the tree, consider updating the server's DS.NLM with the version from another server.

You can view the version of NDS on servers in a container from either the **Tree view** or the list of **Partitions and Servers**.

View Version of NDS on Servers in a Container

1. Choose the container you want to start from.

   Note: If you are performing this operation from the list of **Partitions and Servers,** you cannot see the relationships among the partitions in your tree. It might be easier to perform this operation from the **Tree view**.

2. From the **Object** menu, choose **NDS Version**, then choose **View**.

   Any servers prior to NetWare 4* will show up as **Unknown** (because they are bindery servers that do not have NDS).

   For more information, see Overview of Viewing NDS Version on Servers in a Container.

Note: To view the version of NDS on a chosen server, you can simply highlight the server and choose the **Information** button ▪ from the button bar.

* Novell trademark.   ** Third-party trademark.   For more information, see Trademarks.

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This replica is changing its replica type. To abort the operation in progress, from the **Object** menu, choose **Partition**, then choose **Abort Operation.**

This replica is in the final stages of changing its type. There are no processes to abort.

This replica is being deleted. There are no processes to abort.

This replica is getting ready to merge. To abort this process, choose **Abort Partition Operation**.

This replica is waiting for the parent partition's replica to finish its merge processes. To abort the operation in progress, from the **Object** menu, choose **Partition**, then choose **Abort Operation.**

This replica is in the final stages of merging. There are no processes to abort.

This replica is locked because its preparing to move a partition. There are no processes to abort.

This replica is getting ready to move a container. To abort this process, choose **Abort Partition Operation**.

This replica is waiting for its parent partition's replica to finish its move processes. To abort the operation in progress, from the **Object** menu, choose **Partition**, then choose **Abort Operation.**

This replica is moving a container. There are no processes to abort.

This replica is being added to the chosen server. There are no processes to abort.

This replica has completed all background processes. There are no processes to abort.

Note: Because a replica is in an **on** state does not necessarily mean that it has no synchronization errors; it simply means that the replica is not busy performing an operation.

This replica is near the final process of creating a new partition. To abort the operation in progress, from the **Object** menu, choose **Partition**, then choose **Abort Operation.**

This replica is getting ready to move an object. To abort the operation in progress, from the **Object** menu, choose **Partition**, then choose **Abort Operation.**

This replica is about to change its state to **on.** There are no processes to abort.

This replica is creating a new partition. To abort the operation in progress, from the **Object** menu, choose **Partition**, then choose **Abort Operation**.

This replica is in the final process of creating a new partition. There are no processes to abort.

This field displays the name of the container object at the top of the hierarchical browser. The default context is the context you were in when you launched NDS Manager.

This is a read-only field. If you want to change the context and view a different branch of your Directory tree, choose a container in the browser, right-click, and choose **Set Context.**

This field displays the name of the partition you have chosen in the hierarchical browser. You can change this field by selecting a different partition from the browser.

The replicas of this partition, the replica types, and their states, are displayed below.

Displays the name of the server from which replica information is being read and displayed.

When you choose a partition in the browser, NDS goes out on the wire and finds the closest server on the wire that contains a replica of that partition. Then NDS Manager displays the replicas of the chosen partition, their type, and their state as seen by that particular server.

Note: To verify that all servers that contain a replica of the chosen partition are synchronizing correctly, you can launch **Partition Continuity** and view each server's view of the replicas.

Displays the state of each replica.

For more information, see Description of Replica States .

This region is a hierarchical browser that displays all containers and servers in your current context. You can expand and collapse container objects to view the hierarchy of containers in your Directory tree.

Choose this browse button to search your Directory tree for the NetWare Server object you want to store the new replica on.

Displays the complete name of the partition you chose to be replicated.

Displays the type of replica and its associated icon.

For more information about replicas, see Description of Replica Types.

Displays the complete name of the NetWare Server object on which you want the replica stored.

Note: To choose a server to store the replica you're adding, choose the browse button.

This identifies the name of the selected alias object.

This identifies the original object to which the selected alias object points.

The replica whose type you're changing is a replica of this partition.

Displays the replica type and its associated icon.

The replica type of the replica you have chosen to change is chosen, but is not a valid choice. You must choose one of the other two options.

For more information, see Descriptions of Replica Types.

Displays the complete name of the server that holds the replica whose type you're changing.

If the chosen replica has synchronization problems, an error code is displayed.

Note: To access information about the synchronization error, choose the help button ▪ .

Choose this button to access information about synchronization errors.

Displays the time that the chosen replica was last synchronized with other replicas of the partition.

Displays the complete name of the partition represented by the chosen replica.

Displays the internal number that this replica is known by in the NDS database.

Displays the replica number that uniquely identifies the chosen replica in the NDS database.

Displays the replica's current state of activity.

For more information, see Descriptions of Replica States.

Displays the replica type.

For more information, see <u>Descriptions of Replica Types</u>.

Displays the server that was read.   This can be any one of the replicas.

Displays the complete name of the NetWare server that stores the chosen replica.

Displays the full name attribute of the NetWare Server object. This field will be empty unless you assign a full name.

Displays the version of NDS on the selected server.

Novell strongly recommends that you maintain the most recently released version of NDS on all servers in your Directory tree.

Displays the network address this server is known by in the tables of other NetWare servers in the Directory tree.

Displays the total number of replicas that reside on the selected server.

Displays the complete name of the NetWare Server object.

Displays the version of the NetWare operating system running on the chosen NetWare server.

Displays the time the chosen server last synchronized its replica information with other servers in the Directory tree.

Choose this option to update the partition synchronization status on all servers that hold replicas of the chosen partition.

Displays the server you currently have selected.

Choose this option to update the partition synchronization status of the chosen partition on only the server specified in the text box below.

The button bar in NDS Manager allows you to perform partition and replica operations by simply clicking on a button. Depending on whether you choose a partition, replica, or server, certain buttons will be enabled. For example, if you have a partition selected from the heirarchical browser on the left, the **Create Partition** button ▪ is grayed (disabled) because the container is already a partition.

Displays your current context in the Directory tree.

Displays all the partitions stored on the server you have selected.

Displays the partition that is currently selected in the list of partitions.

Displays all the partitions in and below your current context in the Directory tree.

Note how in the window, the root of the current tree is the current context, so all partitions in and below the root are listed.

This field displays the name of the server from which replica information is being read and displayed.

When you choose a partition in the browser, NDS goes out on the wire and finds the closest server that contains a replica of that partition. Then NDS Manager displays the replicas of the chosen partition, their type,and their state---as seen by that particular server.

Note: To verify that all servers that contain a replica of the chosen partition are synchronizing correctly, you can launch **Partition Continuity** and view each server's view of the replicas.

Displays the complete name of each server that holds a replica of the partition you have selected in the **Partitions** list.

Displays all the servers in and below your current context in the Directory tree.

Note how in the window, the root of the current tree is the current context, so all servers in and below the root are listed.

Displays the name of your Directory tree.

Displays the replica type.

Represents a master replica.

Represents a read/write replica.

Represents a read-only replica.

Represents a subordinate reference replica.

For more information, see Descriptions of Replica Types.

Choose the browse button to search for a different file that you want to specify as the new log file for version update operations.

Choose this operation to cancel the NDS version update operation in progress.

Choose this option to specify a new location for the version update log. If the file is not in the directory, NDS Version Update will create it.

The name of the current log file as specified in your **Preferences** is displayed in the text box.

Choose this option to complete the version update operation in progress. NDS version update will continue, but will not record an errors it encounters in a log file.

Displays the complete name of the partition to be moved.

Note: To change the partition to be moved, you must choose **No** and choose a different partition.

Check this box to allow users to continue to log in to the network and find objects in their original Directory location.

The Alias object that is created will have the same object name as the current container and will reference the object for the new container.

Warning: If you move a partition and do not create an Alias object in place of the moved partition, users who are unaware of the partition's new location will not easily find objects in the Directory tree, since they will look for them in their original Directory location.

This might also cause client workstations to fail at login if the NAME CONTEXT parameter is set to the original location of the container in the Directory tree.

Because the context of an object changes when you move it, users whose name context references the moved object need to update their workstation NAME CONTEXT parameter so that it references the object's new name.

(To automatically update workstation NAME CONTEXT parameters after moving a container object, use the NCUPDATE utility. For instructions, see "NCUPDATE" in Utilities Reference.)

Displays the complete name of the container you're moving the partition to.

Note: To choose a container to move the partition to, choose the browse button.

Displays the name of the server that NDS Manager can't access.

Displays an error message that helps you identify the cause of the error.

Displays the number of servers that NDS Manager could not communicate with to update its version of NDS. To identify which servers were not updated, and why they were not updated, view the log file.

Displays the number of servers that were not updated with a new version of NDS.
To identify which servers were not updated, and why they were not updated, view the log file.

Displays the number of servers that were updated to a newer version of NDS.

Displays the number of servers you had selected to be updated.

Choose this button to view the log file NDS Manager created. The log file may help you identify why errors occurred.

Displays the last date and time that NDS attempted to synchronize this partition's replicas.

NDS synchronizes automatically on a periodic basis, so the time displayed should not necessarily be your current time. The default for synchronization on a Directory tree (with no activity) is every 30 minutes, but that is a setable parameter on the server. If you have not changed the default, you can expect that the last attempted synchronization time will be within the last 30 minutes.

Note: If you make changes to the Directory, NDS attempts immediately to synchronize the changes among all replicas.

Displays the date and time of the last successful synchronization of this partition's replicas.

Note: If the date and time displayed do not match the date and time displayed in the **Last attempted sync** region, then you have synchronization errors and should check the continuity of the partition. To do so, choose **Partition Continuity** ▪ .

Displays the complete name of the server where this partition's master replica resides.

Displays the complete name of the partition you chose.

Displays the number of read/write, read-only, and master replicas of this partition. This information helps you identify the total number of replicas of this partition.

Displays the server that was read. This can be any one of the replicas.

Displays the number of subordinate references of the partition you chose.

Displays the name of the partition you had highlighted when you initiated the partition move.

Type here to rename the partition being moved.

When you choose No, the move operation is canceled and you are returned to the NDS Manager main screen.   The partition will not be renamed.

When you choose Yes, the partition will be renamed and then moved.

Displays general synchronization information about partitions in your Directory tree.

- If all partitions that were checked are synchronizing (no errors), then the number of Partitions checked will match the number of All processed = Yes.

- The number of All processed = No is the number of partitions with synchronization errors.

- The number of Unable to Read is the number of partitions not read for various reasons, such as server downtime.

Opens the **Partition Continuity** screen and displays the replica list of the partition you have chosen.

Displays the **Partition Information** dialog box for the partition you have chosen.

Displays the complete name of each partition checked.   An icon to the left represents the synchronization status of each partition.

If All processed = Yes for a partition, then the partition icon ▪ is shown to its left, signaling no apparent synchronization problems.

If All processed = No for a partition, then 🛑 is shown to its left, which signals a synchronization error for that partition.

If Unable to read a partition, then 🔍 is shown to its left, which signals that a partition cannot be read at this time.

Note: If All processed = No for a partition, highlight the partition and choose Continuity to view the partition's synchronization information.

The button bar lets you perform repair operations without having to use the menus.

When you drag your cursor over any of these buttons, a pop-up will identify what operation the button will launch.

Displays the complete name of the partition that has replicas with synchronization errors. You are currently viewing this partition's replica list in **Partition Continuity**.

If the chosen server is experiencing synchronization errors with more than one other replica, you can choose the drop-down list to select the replica for which you want to view the synchronization error.

Displays the complete name of the server that holds the replica with synchronization errors.

Displays the name of the partition you chose. The replicas displayed in the partition grid are replicas of this partition.

Choose this drop-down list list box to select a different replica.

Displays the complete name of the partition you have selected.

Displays the name of the replica to view information about. To view information about a different replica (column), choose the drop-down box to the right of this field and choose the new replica.

Displays the complete name of the server (row) you have selected.

This is the partition grid, which displays each server's view of where replicas of the chosen partition reside.

If any replicas have synchronization errors, you will see one or more of the following error icons.

- A synchronization error on a master replica
- A synchronization error on a read/write replica
- A synchronization error on a read-only replica
- A synchronization error on a subordinate reference replica

You could also receive an "Unable to Read" error for all the entries for a server, which could be caused by one or more of the following:

- Login is disabled on that server
- The server resides across a WAN link you don't have access to
- NDS is locked on that server
- The server is down
- You are using VLMs and have attempted to exceed the maximum number of connections allowed

Displays the name of the servers that hold replicas of the chosen partition.

Displays the current default view upon launching NDS Manager.

The **Tree view** is the default view upon installation of NDS Manager. You can choose **List** and have the list of **Partitions and Servers** come up when you launch NDS Manager in the future.

The benefit to choosing **Tree** is that NDS Manager can easily display the partitions in your current context in the Directory tree. If you choose **List,** NDS Manager will build a list of all the partitions in **and** under your current context. If your Directory is large (hundreds of partitions), you may have to wait several minutes while this list builds.

This option lets you set preferences for how information is displayed upon launching NDS Manager.

This option allows you to create default settings for where NDS Manager stores the log file after performing an NDS version update operation and how it appends data to the log file.

If you choose this option, each time you run NDS version update, instead of writing over the old log file, NDS Manager will open the log file and add to it.

Note: The log file displayed after a repair operation is a read-only viewer with limited display space. You cannot edit or attach comments to the log file in this viewer. To edit the log file, use a text editor.

This button opens a browser so you can choose a new update log file. If you have moved the log file, you can browse and choose the file in its new location.

Displays the name and location of the current update log file as specified in your **Preferences.**

To change the name or location of this file, choose the browse button to the right, or modify your **Preferences** settings.

Choose **Picture** to have replica icons without text.

Choose **With text** to have the replica type identified underneath the icon.

This option lets you set preferences for NDS update options.

Displays the name and location of the current update log file as specified in your **Preferences.**

To change the name or location of this file, choose the browse button to the right, or modify your **Preferences** settings.

If you choose this option, NDS Manager will **not** notify you when you receive non-critical errors.

If you experience a critical error during the NDS version update process, the operation will be aborted by the system.

For example, if version update could not copy a file and could not restore the server back to its previous state, the update operation will indicate that the server is in a bad state.

In this case, you may need to manually go to that server and restore the backup copies of DS.NLM and DSREPAIR.NLM. To do so, simply rename the DSREPAIR.BAK to DSREPAIR.NLM and DS.BAK to DS.NLM.

Displays the current setting for how NDS version update locates servers.

By default, version update will locate only the servers in your current context and will display them in the **Servers** candidate list.

If you choose **Entire Subtree**, NDS version update will locate all servers in and below your current context and will display them in the **Servers** candidate list.

If you choose this option, NDS Manager unloads DSREPAIR from the target server and copies a new version of NDS (which includes a new DSREPAIR) to the target server.

Choose this option if you want to run NDS version update in unattended mode. If you don't choose this option, you will be prompted to remove DSREPAIR from every target server (every server to be updated) that has DSREPAIR loaded.

Choose this option to print information about the object you have selected.

Choose this option to print

- The replica list of each server in the grid
- The type of each replica
- The replica number
- The current state of each replica
- The date and time of the last successful synchronization of each replica

Choose this option to print

- The replica list of each server in the grid
- The type of each replica in each server's replica list
- The synchronization error code (if one exists) for each replica in the grid

Displays the name of your system printer.

Displays the type of object you have selected in either the **Tree view** or the list of **Partitions and Servers**.

Choose this option to print only the Directory tree as it appears in your browser.

Choose this option if you want to print information in two columns on your paper. This is mainly a paper-saving feature.

Choose this option to print replica data about the partition or server you have selected.

Displays the current context in the Directory tree.

This is a delimiter field where you can limit the objects that appear in the list.
For example, to display only objects that begin with the letter Y, enter **Y***.

Displays objects in the current context that you can choose.

This is a delimiter field where you can limit the objects that appear in the list.
For example, to display only objects that begin with the letter Y, enter **Y***.

You can browse the Directory by double-clicking on containers to "walk down the tree." To "walk up the tree," choose the up arrow at the top of the field.

Choose this button to manually type a new context to search from.

Displays the hierarchical relationships of containers and servers in the Directory tree. In other words, you can see which partitions are parent and which are child partitions (the partition hierarchy).

Displays your current context in the Directory tree.

This field is the replica information pane.

If you have a partition chosen in the browser on the left, this field displays each server that holds a replica of the partition.

If you have a server chosen in the browser on the left, this field displays each partition that has a replica stored on the server.

If you have chosen a container object that has not been partitioned chosen in the browser on the left, this field does not display anything.

Displays the name of the Directory tree.

Choose this browse button to choose a different context.

Displays your current context in the Directory tree.

This option allows you to choose all of the servers that have NDS versions older than the source server.

Displays the complete name of all the servers in your current context.

NDS Manager will gray any servers that are incompatible targets for the source server.

Note: You can modify the settings for NDS version update so that NDS Manager searches the entire subtree and displays all servers in and below your current context. To do so, choose **Settings.**

Displays the complete name of the source server and the version of NDS on that server. This is the server that will send its NDS version to other servers.

Displays all the target servers (the servers that will be updated with the NDS version of the source server).

This is the version of NDS on the target server.

Displays the NDS version on the server.

Related Topics

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