

Zone Transfers

Zone transfer is the process of replicating a zone file to another name server, and is accomplished by copying the zone file information from the master server to the secondary server. Zone transfers take place when names and IP address mappings change in a domain. When this happens, the changes to the zone are copied from a master server to its secondary servers. The master server is the source of the zone information, and can be either a primary or secondary server.

In Windows Server 2003, zone information is updated by incremental zone transfer (IXFR), which replicates only changes to the zone file and not the entire zone file. DNS servers that do not support IXFR request the entire contents of a zone file when they initiate a zone transfer. In Windows NT 4.0, zone information was updated by **full zone transfer** (AXFR) which replicated the entire zone file.

In Windows Server 2003, zone transfers occur when:

- A master server sends a notification of a change in the zone to one or more secondary servers. When the secondary server receives the notification, it queries the master server for the changes.
- A secondary server queries a master server for changes to the zone file. This occurs when the DNS Server service on the secondary server starts, or when the refresh interval on the secondary server has expired.

You can configure the frequency of a zone transfer by modifying the **Start of Authority (SOA)** resource record, which specifies the domains for which the zone is authoritative, and the parameters for how zone transfers occur. It also contains administrative information about the zone.

A secondary server queries its primary server for updates to a zone file and uses the serial number in the SOA resource record to determine whether changes have been made to the zone. If the serial number has changed, a zone transfer takes place to update the records on the secondary server. If a secondary server does not receive updates from its master server, you can use the **Nslookup** utility to compare the serial numbers in each server's SOA resource record.