



Schema Administration

The following topics are covered in this chapter:

- Schema synchronization
 - Monitoring schema synchronization
 - Controlling schema synchronization
- Schema comparison
- Schema modification
 - Extending schema
 - Modifying existing schema
 - Using auxiliary classes

Schema is a specific data type that defines how data is stored in a directory. eDirectory schema definitions are stored in a system partition called the *schema partition* within the eDirectory database. This chapter addresses the administration of the schema partition.

Schema Synchronization

Schema does not replicate in the same way that the user-defined partitions replicate within eDirectory. User partitions use a multimaster transitive synchronization algorithm. The tree can be broken up into partitions, and one or more servers can hold replicas of the partition. All servers that hold a replica are part of the “replica ring.” The servers within the replica ring synchronize data among each other.

With schema, all servers in the tree contain the same schema definitions. Schema flows from the top of the tree down. Only servers that hold replicas of the [Root] partition can modify schema. These [Root] partition servers build what is called the *schema poll list*. This list contains all servers that are in direct child partitions to the [Root] server. As modifications to

schema are made, the [Root] server synchronizes the schema to the other replicas of [Root]. Each replica for [Root] has its own poll list. These servers replicate to each server in the list. Each server in the list, in turn, has its own poll list. This process continues until all servers in the tree have received all schema changes.

The procedure in Task 6-1 outlines the process that the eDirectory Agent uses to build the schema poll list.

Task 6-1. Building a Schema Poll List

1. All servers that are in the replica rings of any partitions that are stored on the local server are added to the schema poll list.
2. Any subordinate reference servers that are listed from Step 1 are replaced with the master replica server of their particular partition.
3. The eDirectory Agent adds to the schema poll list all servers that do not contain any partitions (an external reference server) but whose NCP server object resides in a partition that the local server has a read/write or master replica of.

Note The servers listed in Step 3 are treated as special cases. They receive updates only if schema has been deleted or added. If schema is modified, the schema definitions are not replicated through the normal schema synchronization process. If you want modifications to be sent to external reference servers, you need to force this by issuing a “receive all” schema option, a “schema epoch,” through the DSREPAIR advanced menu options, or by adding a replica of a partition to the external reference server. The need to send the modifications to the external reference object would be extremely rare. This stands to reason, keeping in mind that the external reference servers contain only external reference objects. External reference objects have limited attributes assigned to them.

Monitoring Schema Synchronization

NDS iMonitor has three different ways to view the status of schema:

- View the agent process status screens
- View the DSTRACE screens in NDS iMonitor
- View the Schema Sync attributes on the Schema partition object with NDS iMonitor

Each of these methods is described in turn in the sections that follow.