Tools for Monitoring and Managing Replication

After you have implemented your replication configuration, you must be able to monitor replication for ongoing support, optimization, and troubleshooting. Two tools are particularly useful for reporting and analyzing replication: the Replication Diagnostics tool (Repadmin.exe), and the Directory Server Diagnosis (Dcdiag.exe) tool.

The Replication Diagnostics Tool

The Replication Diagnostics tool, Repadmin.exe, is a command-line tool that enables you to report the status of replication on each domain controller. The information that Repadmin.exe produces can help you spot a potential problem with replication in the forest. You can view levels of detail down to the replication metadata for specific objects and attributes, enabling you to identify where and when a problematic change was made to AD DS. You can even use Repadmin.exe to create the replication topology and force replication between domain controllers.

Repadmin.exe supports a number of commands that perform specific tasks. You can learn about each command by typing **repadmin /?:command** at a command line. Most commands require arguments. Many commands take a *DC_LIST* parameter, which is simply a network label (DNS, NetBIOS name, or IP address) of a domain controller. Some of the replication monitoring tasks you can perform by using Repadmin are:

- Display the replication partners for a domain controller. To display the replication connections of a domain controller, type **repadmin /showrepl *DC_LIST***. By default, Repadmin.exe shows only intersite connections. Add the **/repsto** argument to see intersite connections, as well.

- Display connection objects for a domain controller. Type **repadmin /showconn *DC_LIST*** to show the connection objects for a domain controller.

- Display metadata about an object, its attributes, and replication. You can learn much about replication by examining an object on two different domain controllers to find out which attributes have or have not replicated. Type **repadmin /showobjmeta *DC_LIST Object***, where *DC_LIST* indicates the domain controller(s) to query. (You can use an asterisk [*] to indicate all domain controllers.) *Object* is a unique identifier for the object, its distinguished name or GUID, for example.

You can also make changes to your replication infrastructure by using the Repadmin tool. Some of the management tasks you can perform are:

- Launching the KCC. Type **repadmin /kcc** to force the KCC to recalculate the inbound replication topology for the server.

- Forcing replication between two partners. You can use Repadmin to force replication of a partition between a source and a target domain controller. Type **repadmin /replicate *Destination_DC_LIST Source_DC_Name Naming_Context***.

- Synchronizing a domain controller with all replication partners. Type **repadmin /syncall *DC*/A /e** to synchronize a domain controller with all its partners, including those in other sites.

The Directory Server Diagnosis Tool

The Directory Service Diagnosis tool, Dcdiag.exe, performs a number of tests and reports on the overall health of replication and security for AD DS. Run by itself, dcdiag.exe performs summary tests and then reports the results. On the other extreme, **dcdiag.exe /c** performs almost every test. The output of tests can be redirected to files of various types, including XML. Type **dcdiag /?** for full usage information.

You can also specify one or more tests to perform using the **/test:*Test Name*** parameter. Tests that are directly related to replication include:

- FrsEvent. Reports any operation errors in the File Replication System.

- DFSREvent. Reports any operation errors in the Distributed File System Replication system.

- Intersite. Checks for failures that would prevent or delay intersite replication.

- KccEvent. Identifies errors in the KCC.

- Replications. Checks for timely replication between domain controllers.

- Topology. Checks that the replication topology is connected fully for all domain controllers.

- VerifyReplicas. Verifies that all application directory partitions are instantiated fully on all domain controllers that are hosting replicas.