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Resolving Server Problems

Terms you'll need to understand:

- ✓ Administration Process
- ✓ AdminP
- ✓ Agent Manager
- ✓ Event triggers

Techniques you'll need to master:

- ✓ Monitoring application size
- ✓ Monitoring server tasks
- ✓ Recovering from a server crash
- ✓ Solving Agent Manager issues
- ✓ Solving authentication and authorization issues
- ✓ Troubleshooting Administration Process problems
- ✓ Troubleshooting replication problems
- ✓ Troubleshooting mail routing issues
- ✓ Using event triggers to troubleshoot problems

In this chapter, we cover issues that administrators may have to contend with when troubleshooting server problems. We look at how to resolve replication issues, mail routing issues, and authentication issues as part of the troubleshooting process, along with other possible problems that may occur. This information is an important part of your preparation for Exam 622.

Monitoring Application Size

Application, or database, size can directly affect the manner in which a system performs. A database that has grown in size and isn't maintained regularly causes the server to have performance issues. The maximum database size on Windows and Unix servers is 64 gigabytes.

To check the size of a database, select the database on the Domino Workspace. Navigate to the File menu, select Database, and then select Properties to open the database properties. Database size is listed on the Info tab (the second tab, labeled with an "i"). This tab displays

- ▶ The database size.
- ▶ The number of documents in the database.
- ▶ The database creation date.
- ▶ The last day the database was modified.
- ▶ The replica ID of the database.
- ▶ The ODS version of the database.
- ▶ % used—This button displays the amount of the database in use calculated in percent.
- ▶ Compact—This button initiates a compact on the database.
- ▶ User Detail—This button shows information related to the owner of the database.

Here are some additional ways to check database size:

- ▶ View the database size on the Files tab of the Domino Administrator
- ▶ Check the database size in the Domino log file
- ▶ View the statistics reports in the Statistics database

Monitoring Server Tasks

As previously discussed in this book, Domino offers multiple ways to monitor server tasks. These include

- Using the Domino console
- Using the Domino Administrator
- Using the Domino Web Administrator
- Examining the server log, miscellaneous view
- Setting up statistics monitoring

Recovering from a Server Crash

Even the best maintained server will crash occasionally. The one thing that always allows an administrator to recover from a catastrophic system failure is the use of a reliable, tested backup system. Always make sure to use reliable media, test the backup system, and regularly verify backups to be sure they are accurate and complete. Common causes of server crashes include

- *Inadequate hardware*—A slow CPU and minimal amounts of memory may allow a server to be deployed and Domino to be installed, but after users access the server and system tasks launch, the server will experience slowdowns and possibly crash the server.
- *Defective hardware*—Bad network cards, failing disk drives or drive arrays, or defective memory can cause server crashes.
- *Software patches or upgrades*—Security patches and operating system upgrades are notorious for overwriting DLL files and system files that Domino uses for running the server. Loading a patch or an upgrade may cause a software conflict and cause the server to crash.
- *Domino applications*—Databases that have become corrupted are a common reason for server problems that may lead to a system crash.

Typically, after a server crashes, a system reboot allows the server to restart and fires system utilities such as “fixup” to correct any database issues that occurred when the server went down. In the event that the server will not restart, you may need to place a call to Lotus tech support to determine what caused the crash. Before placing the call, gather the following information if possible:

- Domino software version
- Operating system version and a list of all installed patches and upgrades
- List of installed programs on the server and their versions
- Network configuration
- A record of any errors on the server screen
- An NSD (Notes System Diagnostics) file if available



An NSD file might be generated when the server crashes and can be valuable for recovering from the crash. Lotus tech support can analyze the NSD file to determine the cause of the crash and provide possible solutions. This file is not created at every server crash.

Before contacting Lotus tech support, you also should gather any available system files that can assist Lotus in troubleshooting the problem. These include, but are not limited to

- System files such as any autoexec or config file
- Notes.ini file
- Server log files if available

Solving Agent Manager Issues

The *Agent Manager* is a Domino task that manages agent execution on the server. Agents can be resource intensive, depending on what task they are running, so it's important that they are managed efficiently. The Agent Manager serves this function but may not always run properly. In order to fine-tune how Agent Manager operates, you can edit the Notes.ini file with the following settings:

- *AMgr_DocUpdateAgentMinInterval*—This setting is used to determine the delay time before a document updates and runs an agent in response to the document update. The default time is 30 minutes.
- *AMgr_DocUpdateEventDelay*—This setting is used to determine the amount of time that the Agent Manager will delay the execution of the same agent that will run and update documents. This is effective in keeping document updates from running during the times when the server is most active, such as in the morning or just after lunch. The default time is 5 minutes.

- *AMgr_NewMailAgentMinInterval*—This setting is used to determine the minimum amount of time that needs to pass before the same agent will run and process mail events. The default is 0 minutes.
- *AMgr_NewMailEventDelay*—This setting is used to determine the amount of time that the Agent Manager will delay the arrival of a new document and the running of an agent as a response to the update. The default time is 1 minute.
- *DominoAsynchronizeAgents*—This setting is used to manage Web agents that are executed by browser clients so that they can run simultaneously. Setting this parameter to 1 allows multiple agents to run concurrently.
- *AMgr_SchedulingInterval*—This setting is used to dictate the amount of time that the Agent Manager scheduler task will pause before running. The default is 1 minute and the valid values are 1 minute to 60 minutes.
- *AMgr_UntriggeredMailInterval*—This setting dictates how much time should pass before the Agent Manager checks for untriggered mail. The default time is 60 minutes.

In addition, these commands can be entered at the server prompt to troubleshoot Agent Manager issues:

- `tell amgr schedule`—This command displays the agent manager schedule.
- `tell amgr status`—This command asks the server to generate a status report about the Agent Manager.
- `tell amgr debug`—This command displays the current state of the Agent Manager debugger.

Solving Authentication and Authorization Issues

There are multiple reasons why users or servers may be experiencing problems authenticating to the server. Troubleshooting authentication and authorization issues involves the following processes:

- Verifying that the Domino Directory is set up correctly
- Verifying that the server's ID file is not the problem
- Determining potential causes of user problems

The following sections describe these processes in detail.



Knowing how to verify that a Domino Directory is set up correctly is a key skill for a Domino administrator. Make sure that you understand the information on this topic presented here as you prepare for the exam. Spend some time in your development environment to fully understand how the Directory is set up and configured.

Verifying Correct Domino Directory Setup

Follow these steps when troubleshooting authentication issues to verify that the Domino Directory is set up correctly:

1. Be certain all information related to the server configuration is properly defined. Verify that the server name, Notes named networks, and domain names are correct with no typos. Also, be certain that all group information and usernames are correct.
2. Verify that the network information is configured correctly. Be sure that all ports are enabled properly as required.
3. The Server document may be damaged or corrupted. Back up the Domino Directory if possible, or make sure that a valid archived copy exists and restore it to a safe location. Create a new Server document in the Directory, copy the original Server document's public key into the new Server document, and delete the original document to see if the problem is corrected.



If the new Server document does not correct the problem, use the Directory that was restored from tape. Remember that any changes that were made to the Directory since it was archived will need to be re-created.

4. Validate that the public key in the server ID matches the public key.
5. Check the Domino Directory for save or replication conflicts and correct them if they exist.
6. Corrupted database views may be preventing access. Rebuild the views using the Updall task first and then use the fixup task if necessary to resolve the corrupted views.
7. Replace the design of the Domino Directory with the PUBNAMES. NTF template if appropriate. If the Directory was modified with a custom template, replace the design with the custom template instead of the default template.

Verifying Server ID

You can verify that the server's ID file is not the problem by checking these items:

- The server ID itself may be damaged. Stop the server, rename the old server ID file with a .old extension, replace the server ID from a known good backup, and restart the server.
- Missing or corrupted certificates could hinder access. Verify that the server ID file has all expected certificates and if any are missing, recertify as needed with the appropriate certifier.
- Verify that the server's public key matches the public key stored in the Domino Directory's Server document.

Troubleshooting User Problems

If a user is having problems accessing the server, check these items to search out the source of the problem:

- Check for typos or errors in the user's Person document in the Directory.
- Determine that the user has all of the proper certifications needed to access the server.
- Verify that the user's client is configured properly, including network configurations and connections.

Troubleshooting Administration Process Problems



Lotus has provided the Administration Process to assist administrators in automating system tasks and scheduling them to run at times when the system is not experiencing heavy use. Make sure that you understand how the Administration Process works and how to troubleshoot it when studying for the exams.

The *Administration Process (AdminP)* is a Domino task that runs on the server to execute housekeeping, maintenance, and administrative tasks. For example, AdminP processes requests for a user's name to be changed, a new Organizational Unit to be assigned, or a user's information to be added to a

completely new organization in the hierarchy. As we have discussed previously in this book, a server that does not have the proper hardware configuration can cause a myriad of problems. The *Administration Process* is a memory-intensive process and care should be taken to ensure that the server has an adequate amount of memory to execute the task. To troubleshoot possible problems with the Administration Process, follow these steps:

- ▶ Make sure that no system changes have been made at the operating system level or to the network infrastructure that could cause communication failures within the domain.
- ▶ Configuration errors on the server may be causing problems. Try running the Administration Process on a different server in the domain to see if the problem persists.
- ▶ Type `show tasks` at the server prompt and check to make sure that the AdminP task is running.
- ▶ Verify that an Administration Server is defined in the Directory and in all databases in the domain. If the Administration Server is not defined in the databases, the AdminP process cannot run against them.
- ▶ Check the replication events in the Domino log file to make sure that the Directory and the Administration Requests database is replicating properly in the domain.

Troubleshooting Replication Problems

Database replication errors can be common, but can also be very frustrating to correct. Suggestions for troubleshooting replication problems include:

- ▶ Make sure that the replica IDs are the same between the two databases that are replicating. Remember that replication is dependent on the replica IDs and not on the database names.
- ▶ Check the Connection documents for the servers and make sure that the replication task is enabled. Verify that the replication scheduled is properly defined.
- ▶ Verify that replication is not disabled in the database properties.
- ▶ Check the ACLs for the database and verify that the access is properly set to allow replication to occur between the databases.

- Make sure that the server has sufficient disk space to allow the databases to add the documents.
- Check the Domino Log database for possible errors that are occurring.
- Examine the database's replication history to determine the last time the database successfully replicated to determine when the problems started occurring.

Troubleshooting Mail Routing Issues

A typical sign that mail routing is not working correctly is a report from a user that they are not receiving mail or cannot send mail. Suggestions for troubleshooting mail routing issues include

- Request a delivery failure report from the user. Examine the information in the report to determine how the problem may be resolved.
- Perform a mail trace to determine where the mail is stopping along the route and correct the problem.
- Check the Domino Directory and ensure that mail routing is enabled.
- Verify that the settings in the Connection documents are configured properly for mail routing between servers.
- Make sure that the mail.box file on the server is not corrupted.
- Check the server and make sure that there is sufficient disk space to allow the server to process the mail.
- Examine the Domino log to see if errors are occurring in the Mail Routing Events section.
- Check the mail.box file for undeliverable mail and examine the errors that are occurring to determine how to correct the problem. In addition, an administrator can issue the command `tel1 router show` to determine whether mail is backed up on the server and the last error message logged.

Using Event Triggers to Troubleshoot Problems

Event handlers are used to determine which tasks launch when a predetermined event occurs on the server. Such an event is known as an event trigger. The events database EVENTS4.NSF includes predefined events that can be used to monitor the server, but the most efficient use of the handler task is when an administrator defines events specific to the domain they are monitoring. An administrator may decide to just log events and then maintain them weekly. Alternatively, administrators may decide to be alerted immediately when an event occurs so that they can resolve the issue.

The EVENTS4.NSF database includes a wizard that assists administrators in creating the following event handlers:

- ▶ *Event Handler Wizard*—Creates a new event handler that generates a notification when a specified event occurs
- ▶ *Database and Statistic Wizard*—Creates an event generator that fires when something happens to a server or database
- ▶ *Mail Routing and Server Response Wizard*—Creates an event generator that generates statistics or fires an event based on the availability of a resource
- ▶ *Troubleshooting Wizard*—Identifies some common configuration errors in the EVENTS4.NSF database and suggests possible resolutions

Event handlers can also be created by using the Domino Administrator and navigating to the Configuration tab and selecting the Monitoring Configuration, Event Handler view. Each event has a Basics, Event, and Action tab that must be completed.

The following events provide assistance in troubleshooting problems:

- ▶ *Agent*—This event monitors tasks related to the execution of agents on the server.
- ▶ *Mail*—This event monitors tasks related to mail processing.
- ▶ *Replica*—This event monitors database activities associated with replication.
- ▶ *POP3*—This event monitors Internet mail activities.
- ▶ *SMTP*—This event monitors activities related to SMTP communications.

Exam Prep Questions

Question 1

Which of the following options are available to administrators to monitor the Domino server?

- A. Using the Domino console
- B. Using HP OpenView
- C. Examining the server log, miscellaneous view
- D. Using the Web Administrator

Answers A, C, and D are correct. Domino offers multiple ways to monitor server tasks. These include:

- ▶ Using the Domino console
- ▶ Using the Domino Administrator
- ▶ Using the Domino Web Administrator
- ▶ Examining the server log, miscellaneous view
- ▶ Setting up statistics monitoring

Question 2

What is the maximum size possible for a database on Windows and Unix servers?

- A. 100 gigabytes
- B. 64 gigabytes
- C. 1 terabytes
- D. None of the above

Answer B is correct. The maximum database size on Windows and Unix servers is 64 gigabytes.

Question 3

Which command is issued at the server prompt to generate a status report concerning the Agent Manager?

- A. **show agent report**
- B. **tell agent manager show status**
- C. **tell amgr status**
- D. **show agent manager status report**
- E. None of the above

Answer C is correct. The command `tell amgr status` asks the server to generate a status report about the Agent Manager.

Question 4

Which of the following items could cause database replication problems?

- A. The databases might have different names.
- B. The server task "Replica Check" might not be running.
- C. The replica IDs do not match.
- D. The database might need to be compacted.

Answer C is correct. Make sure that the replica IDs are the same between the two databases that are replicating. Remember that replication is dependent on the replica IDs and not on the database names.

Question 5

What is the purpose of event handlers?

- A. They are used to determine holidays in calendaring and scheduling.
- B. They are used to generate system records in the `EVENTS.NSF` database.
- C. They are used to determine which tasks launch when an event is triggered.
- D. They are used to perform an orderly shutdown of the server if a critical system failure occurs.

Answer C is correct. Event handlers are used to determine which tasks launch when an event is triggered.

Question 6

Which of the following statements are true about the Administration Process?

- A. It is very memory intensive.
- B. It can be launched by a user.
- C. An Administration Server must be defined in the Directory for the process to be able to launch.
- D. Running the process quarterly is adequate for maintaining the administrative tasks.

Answers A and C are correct. The Administration Process is a memory-intensive process and care should be taken to ensure that the server has an adequate amount of memory to execute the task. An Administration Server must be defined in the Directory and in all databases in the domain. If the Administration domains are not defined in the databases, the AdminP process cannot run against them.

Question 7

What is the purpose of an NSD file?

- A. To assist in troubleshooting the reason for a system crash
- B. To generate a listing of all Non Standard Domains accessing the network
- C. To compile a report of all available Notes users accessing the server
- D. To generate a report showing a list of Internet users accessing the server using a Web client

Answer A is correct. An NSD file can be generated when the server crashes and can be valuable for Lotus tech support to analyze the crash and provide possible solutions. This file is not created at every server crash.

Question 8

Which of the following selections are possible solutions for troubleshooting mail routing issues on the server?

- A. Set up the Failed_Mail statistics generator in the EVENTS.NSF database.
- B. Examine a delivery failure report.
- C. Execute a mail trace.
- D. Check the Domino Directory and make sure mail routing is enabled.

Answers B, C, and D are correct. The following items can assist in troubleshooting mail routing issues:

- Request a delivery failure report from the user. Examine the information in the report to determine how the problem may be resolved.
- Perform a mail trace to determine where the mail is stopping along the route and correct the problem.
- Check the Domino Directory and ensure that mail routing is enabled.

Need to Know More?



The Lotus Developers Domain: www-10.lotus.com/1dd.



Upgrading to Domino 6: Performance Benefits: www.ibm.com/redbooks.

