Administering IBM Lotus Domino 8.5 servers for beginners

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Summary: This white paper provides a comprehensive overview of how to administer IBM® Lotus® Domino®, explaining the fundamental components and terminology so that new administrators can feel familiar with the product. Specifically, we explain key features and functionalities such as the Notes.ini file, the Data Directory, IDs, server commands and documents, and server activities. Also included are discussions of server maintenance and NSDs.

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1 Introduction

The intent of this document is to help the beginner Domino administrator get started by presenting a general illustrated overview of basic Notes and Domino functionalities. Sometimes new administrators don't have the necessary references or documentation on how to get started. So our purpose here is to present, as simply as possible, how to perform the basic duties of a Domino server administrator.

1.2 Products overview

IBM Lotus Domino is a server product that provides enterprise-grade email, collaboration capabilities, and custom application platform. Lotus Domino began life as Lotus Notes Server, the server component of Lotus Development Corporation's client--server messaging technology.

It can be used as an application server for Lotus Notes applications and/or as a Web server. It also has a built-in database system in the .nsf format. (Beginning in release 7, the Domino server can use the IBM DB2® system as its backend database.)

IBM Lotus Notes is a client--server, collaborative application developed and sold by IBM Software Group. IBM describes the software as an "integrated desktop client option for accessing business e-mail, calendars and applications on an IBM Lotus Domino server.

IBM Lotus iNotes™ offers a fully featured Web-based version of the Lotus Notes client. It provides an interactive interface that duplicates the functionality of Lotus Notes within a Web browser (see figure 1).

Figure 1. Lotus iNotes UI
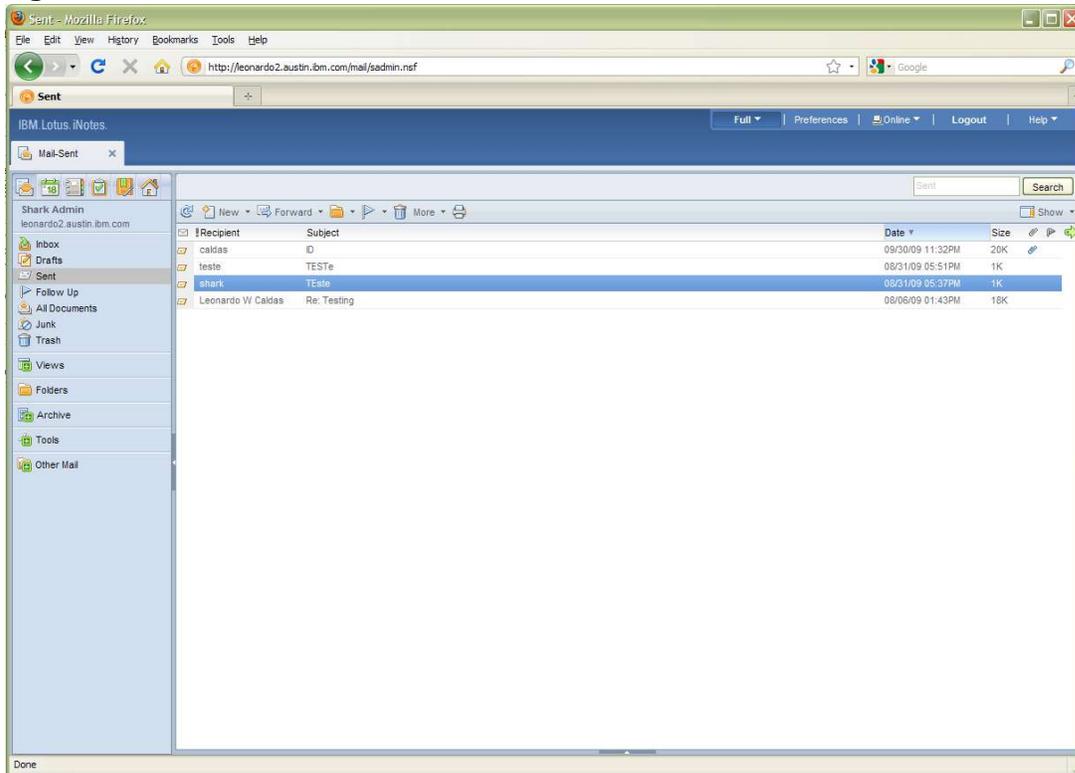
IBM Lotus Domino Administrator is a client--server application providing a graphic interface whose main purpose is to administer and manage the server, access the server's console, and perform basic tasks such as renaming a user (see figure 2). All this can be done remotely the same way a Lotus Notes user would access the server to check his/her email account.

Figure 2. Domino Administrator UI
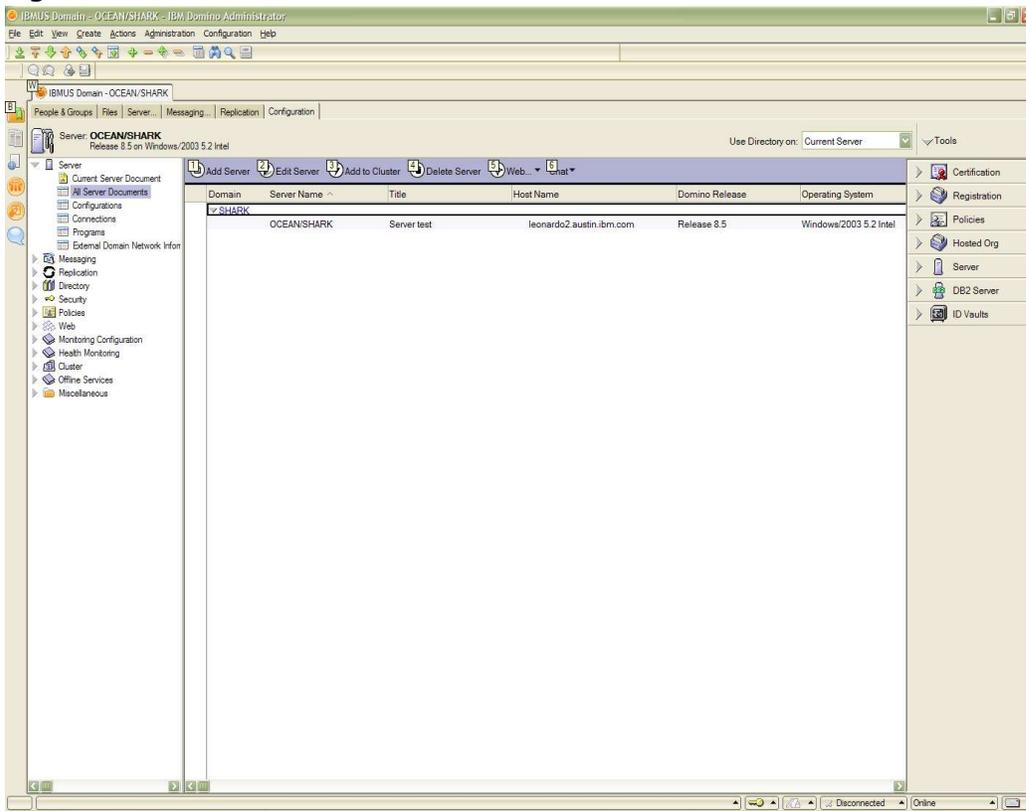
Lotus Domino Designer is an application development software that allows developers to rapidly build and deploy security-rich, multi-platform collaborative or workflow-driven business applications, allowing the integration of assets from across IT systems and providing application access through many different types of clients and devices (see figure 3).

Figure 3. Domino Designer UI
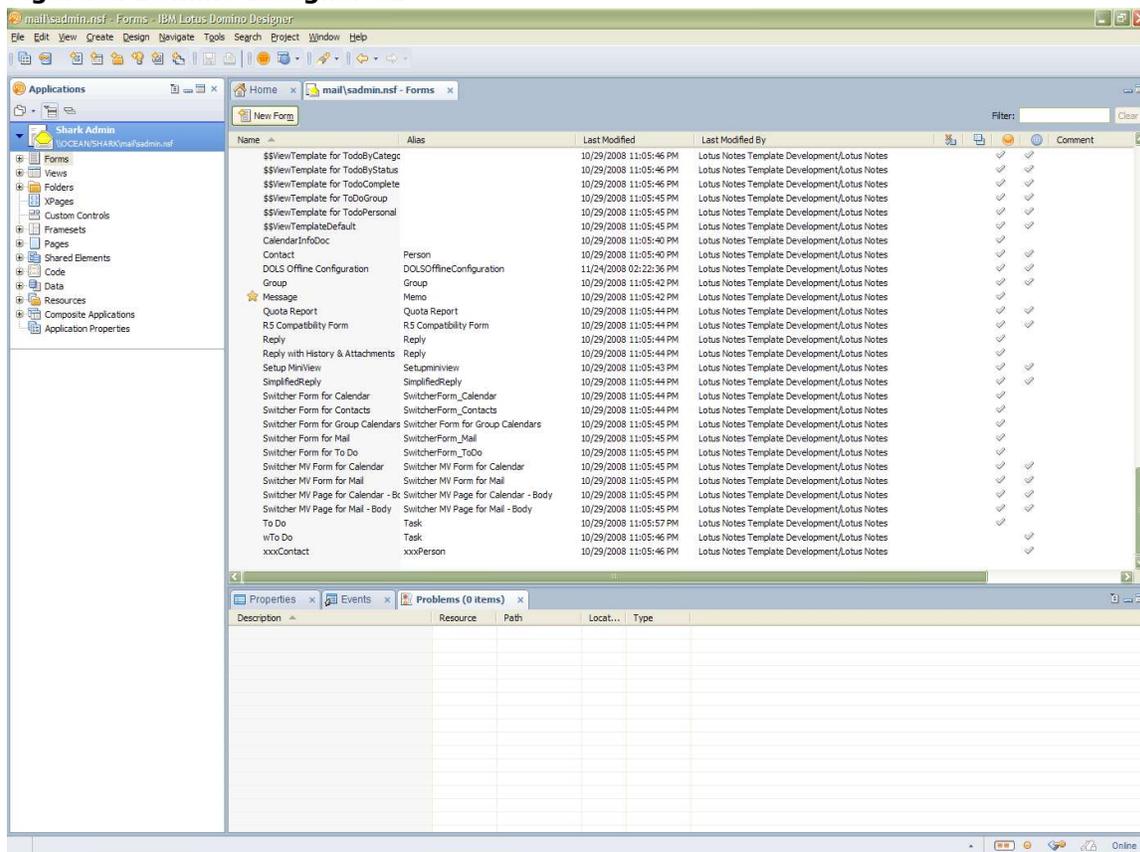
2 Commonly used Notes and Domino files

Below we briefly describe the key Notes and Domino files, file extensions, and folders:

Names.nsf. Also called the Domino Directory, which some previous releases referred to as the Public Address Book or Name and Address Book, this database is automatically created by Lotus Domino on every server.

The Domino Directory is a directory of information about users, servers, and groups, as well as custom entries that you may add. It contains Server documents, Configuration Settings, Person documents, and Domain, Connection, and Internet Site documents. The Domino Directory is also a tool that administrators use to manage the Domino system.

Log.nsf. Every Domino server has a log file (LOG.NSF) that reports all server activity and provides detailed information about databases and users on the server. The log file is created automatically when you start a server for the first time.

Admin4.nsf. The Administration Requests database (ADMIN4.NSF) is created when the server starts for the first time. Requests for work to be done by the Administration Process (AdminP) are stored in the Administration Requests database.

The status of work done by AdminP is also stored in the database as response Log documents to the requests. To complete tasks, AdminP posts and responds to requests in

the Administration Requests database. Domino servers use replicas of this database to distribute requests made on one server to other servers in the domain. Some requests are only performed by the Administration Server of the Domino Directory.

Notes.ini. The NOTES.INI file is a text file that contains many settings on which both Lotus Notes and Domino rely to work properly. An accidental or incorrect change may cause Lotus Domino or Lotus Notes to run unpredictably. Therefore, you should edit the NOTES.INI file only if special circumstances occur or if Lotus Support Services recommends that you do so.

Mail.box. This is a special database on the server, created automatically at startup, that acts as a temporary repository for all messages in transit to and from mail clients, applications, and other servers. The server creates the number of MAIL.BOX databases specified on the Configuration Settings document.

User.id. The Notes ID is one of the security features of Notes and is a unique file that identifies a Notes user. The user ID is created when a Domino Administrator registers a user and contains, among other things, the following: name of the user, certificate from a Certifier ID, public key, private key, password, and encryption keys.

The **.NSF** extension stands for Notes Storage Format (.nsf), which is a database format, also called application, commonly used by Lotus Notes clients and Domino servers. Some examples of these databases are the Names.nsf, Admin4.nsf, Log.nsf, and user mail files.

The **.NTF** extension stands for Notes Template File (.ntf), which is the extension for a Notes template file. A template contains the structure elements (views, forms, folders, etc.) used on the creation of system and application databases, but it does not contain any documents. For example, the database Names.nsf on the server is created from the Pubnames.ntf template.

Program folder. This is the directory in which the Domino server or Lotus Notes client is installed, and in general this is where the Notes/Domino executable files are located along with the Notes.ini. This folder is specified by the user during the installation process.

Data folder. This is where the data directory for the Domino server or Notes client is installed, and in general this is the folder where the Notes/Domino applications and templates are located. This folder is specified by the user during the installation process.

3 Domino Directory (Names.nsf)

The Domino Directory is considered the core of the server. This is where you find the registered users, the other servers in the same domain, security settings, mail settings, policy settings, etc. It's important to understand the architecture of the Domino Directory by becoming familiar with the documents that form it, and also explore the available settings and options.

We cover the basic components that comprise the Domino Directory without going into much detail because the idea is to give a beginner administrator the basic knowledge with which to learn the product. For more information about any specific topic, refer to the product Help.

To access the Domino Directory, we open the Domino Administrator client and first check whether it's connected to the correct server, specified in the highlighted field in figure 4.

In this case, the Domino Administrator is set to "Local," meaning it is not connected to any servers, so we need to open the server containing the Domino Directory we want to access.

Figure 4. Server field
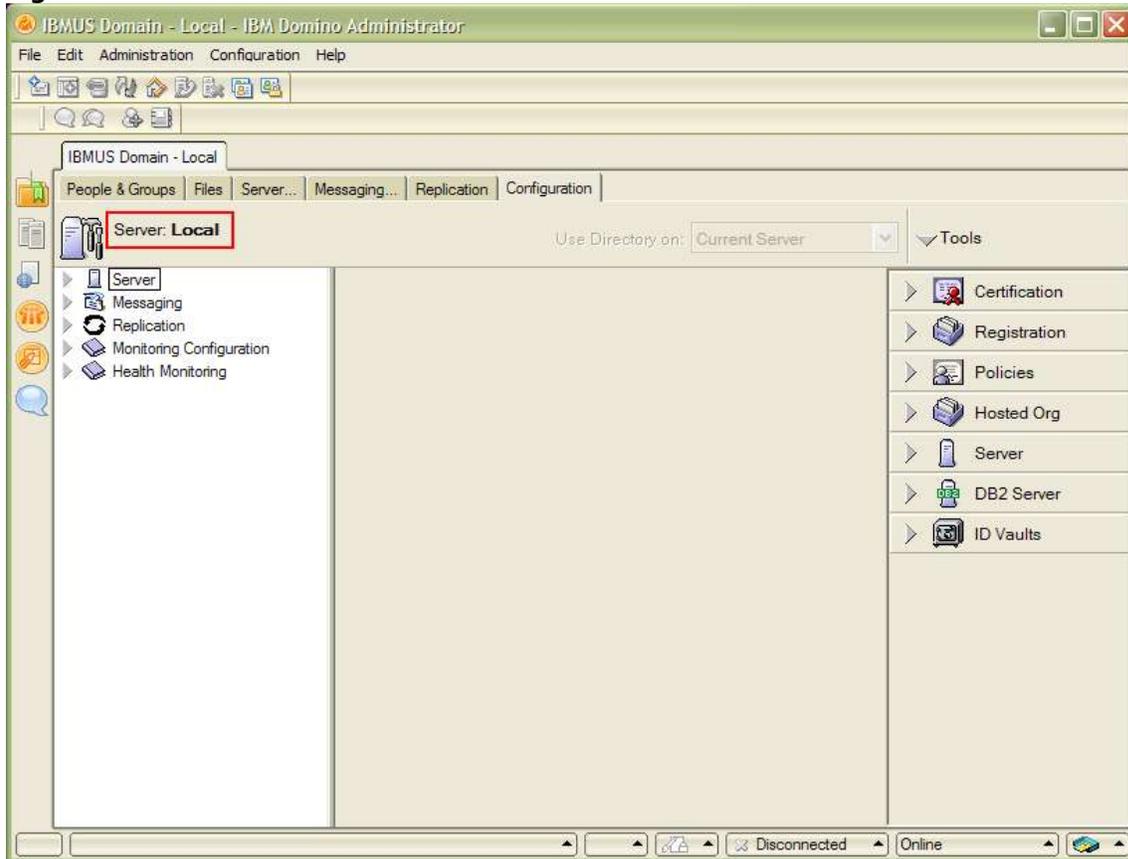
To do this, follow these steps:

1. Select File > Open Server, from the top menu bar. A window should pop up prompting you to select the server to which you want to connect (see figure 5).

2. Select the server you wish to access and click the OK button. If the server is not listed, you can manually type the name of the server or the server address.

Figure 5. Open Server window
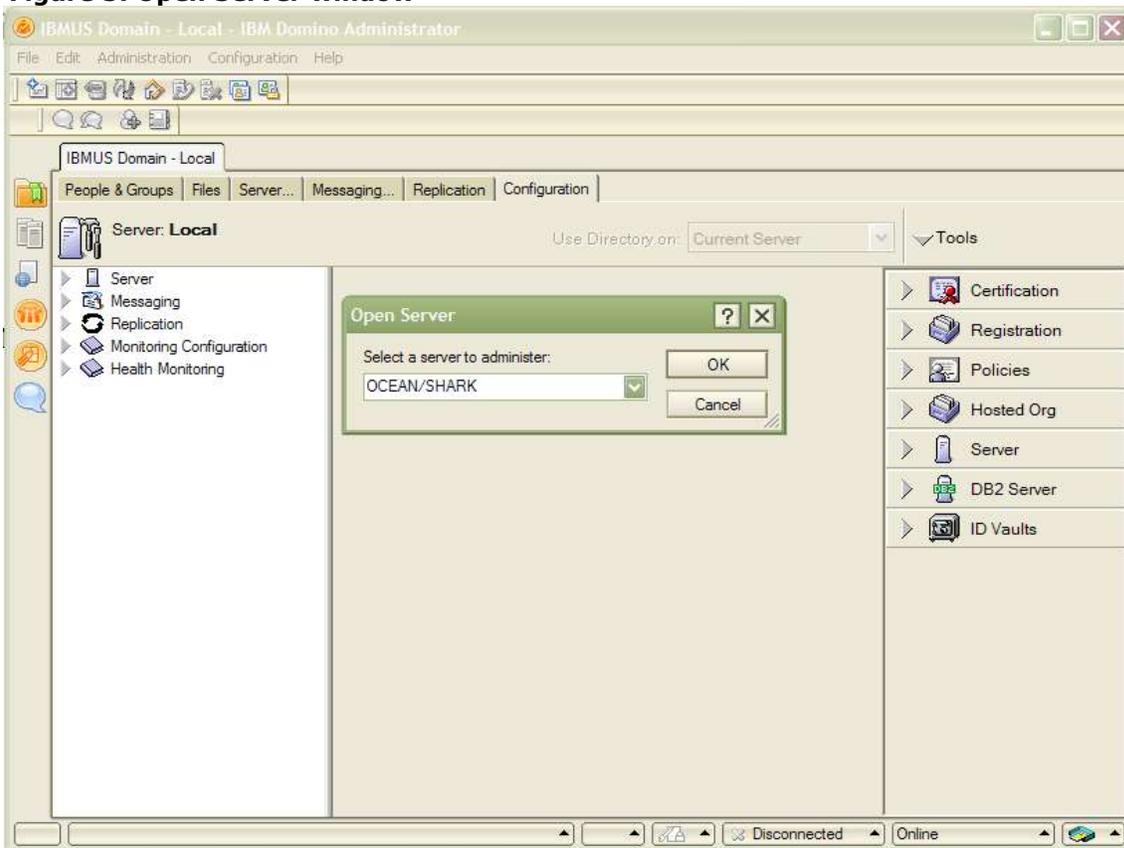
After connecting to the server you should see the name of that server, as shown in the highlighted field in figure 6. The Domino Administrator should open the Domino Directory by default.

Figure 6. Server name to which you are connected
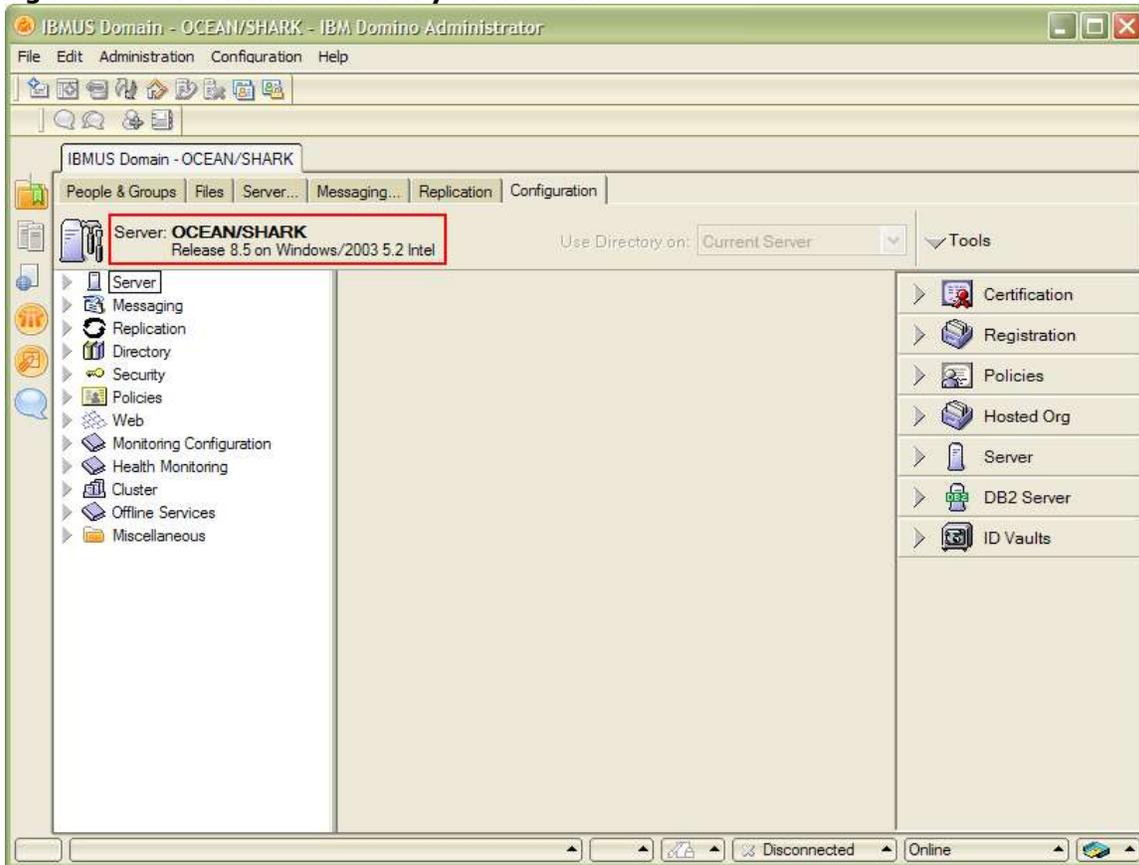
Since our goal is to present a general overview of the structure, we now highlight the most relevant components of the Domino Directory, which should help the beginner administrator get more comfortable around the product and the terminology used by Lotus Technical Support.

3.1 Server document

The Server document is where we specify the basic settings that define the server's main functionality, including the protocols and services supported, server tasks, and security settings.

To access the Server document, do the following:

1. Click the Configuration tab, expand Server, and then select Current Server Document or All Server Documents from the left-hand navigation pane (see figure 7).

Figure 7. All Server Documents view
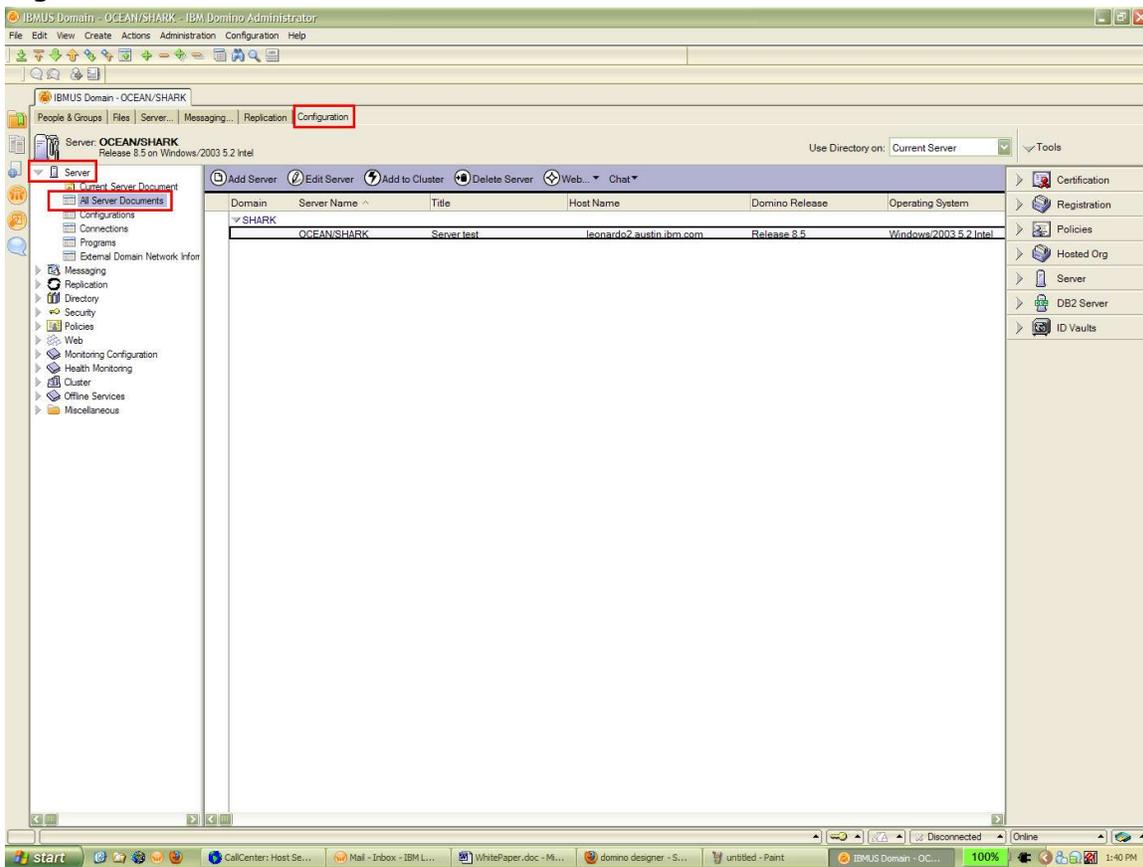
2. Double-click the desired Server document to open it; you should see a screen similar to that shown in figure 8 below, with all the options available in a Server document.

3. Click on each of the tabs to get an idea of what can be configured in the Server document.

Figure 8. Server document Basics tab
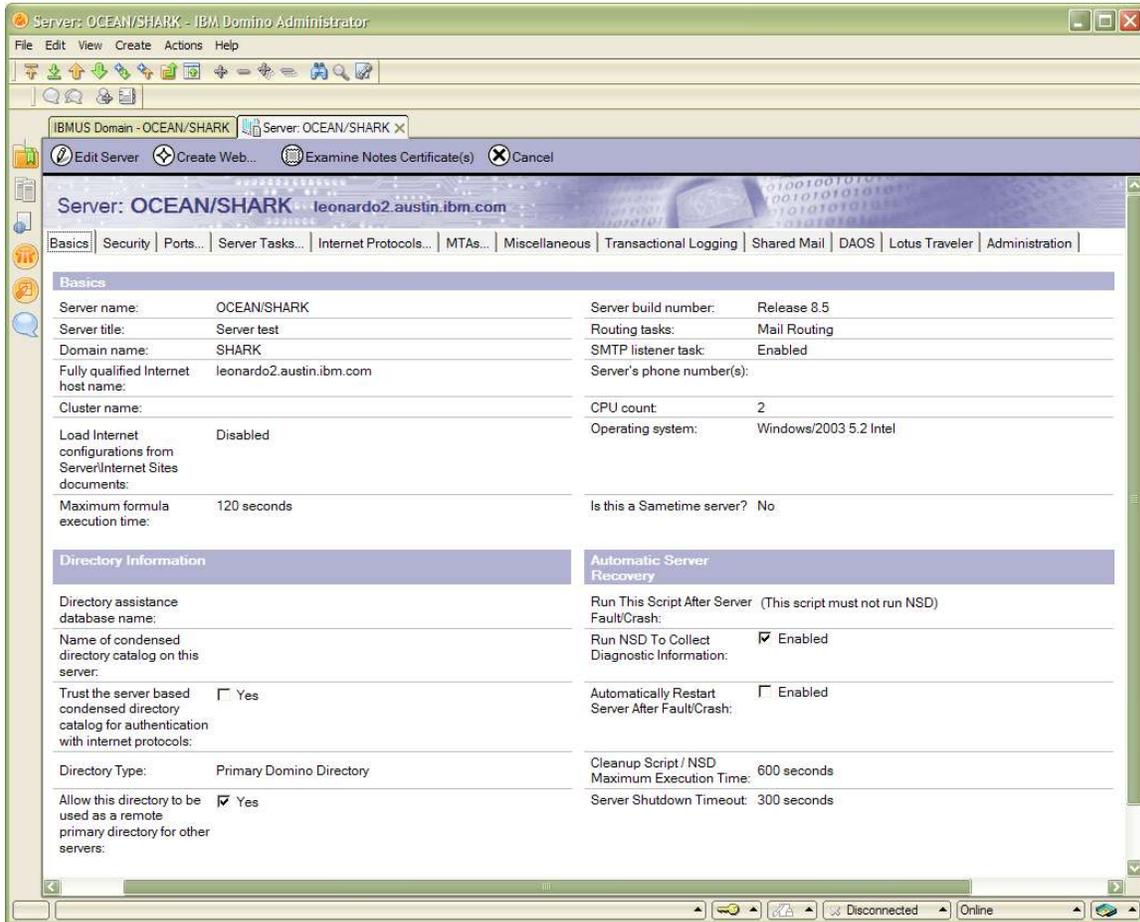
TIP: If you left-click on a specific field and hold, it will display a brief description of what that field does or represents, which can save you some time. Figure 9 shows what you see if you click and hold on the server name.

Figure 9. Server field description help
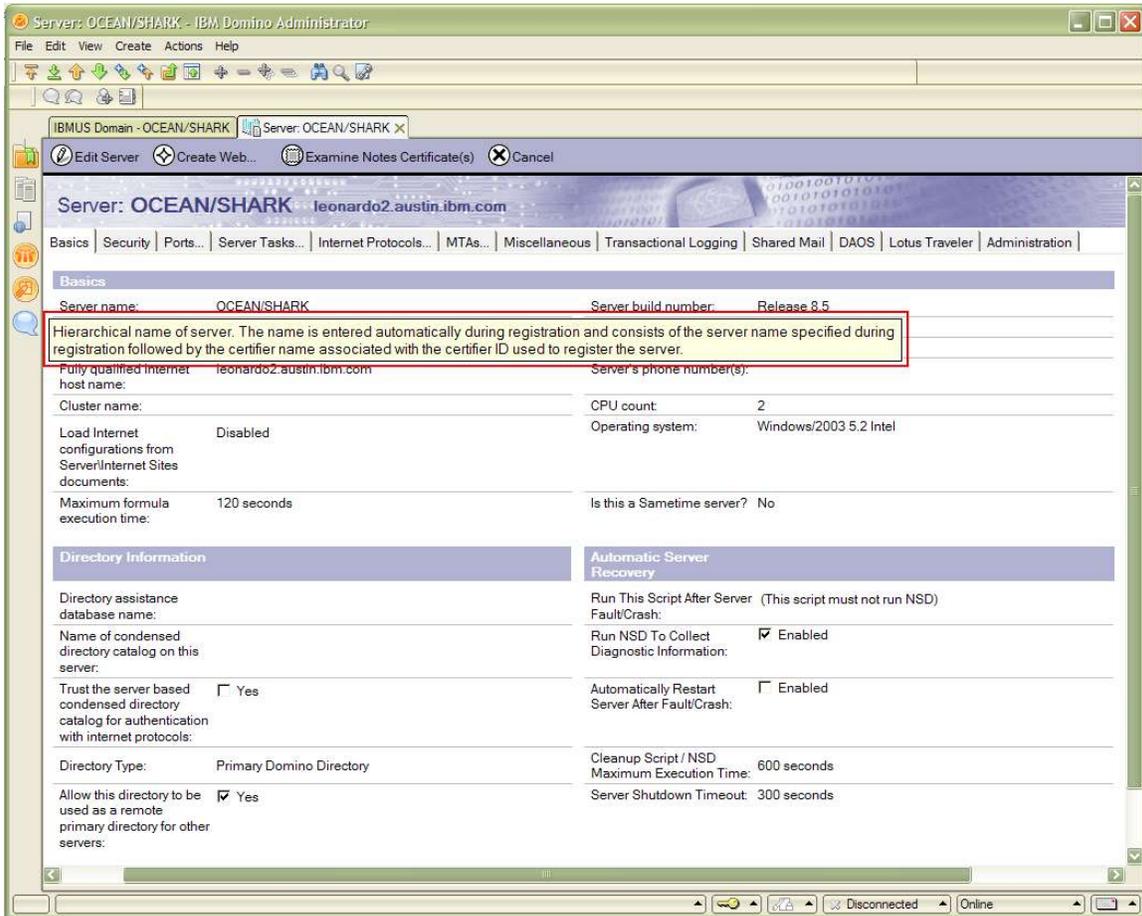
3.2 Configuration document

The Configuration document is where we define the operational configurations for the server, including routing options and restrictions, configuration parameters, Lotus iNotes settings, etc.

To access the Configuration document:

1. Click the Configuration tab, expand Server, and then select Configurations from the left-hand side.

2. Double-click on the Configuration document for the server you want to open.

3. After opening it you should see a screen similar to that shown in figure 10, with all the options available in a Configuration document. Click all the tabs to get an idea of what is configurable in the Configuration document.

Figure 10. Configuration Settings document
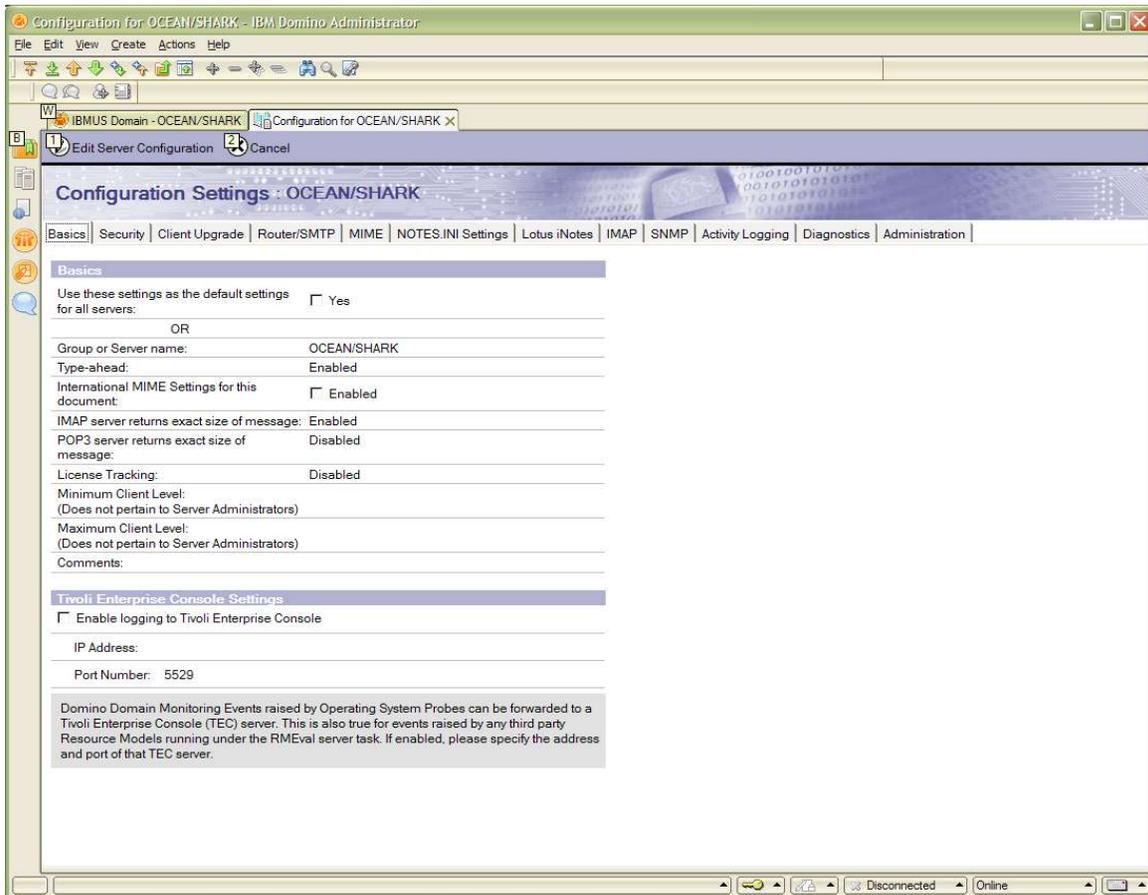
3.3 Person document

The Person document is where all the information regarding a registered user is located, such as user name, mail server, Internet address, and Internet password.

To access the Person document, click the People & Groups tab, choose People from the left-hand navigation pane, and double-click on the Person document for the desired user (see figure 11).

Figure 11. Person document view
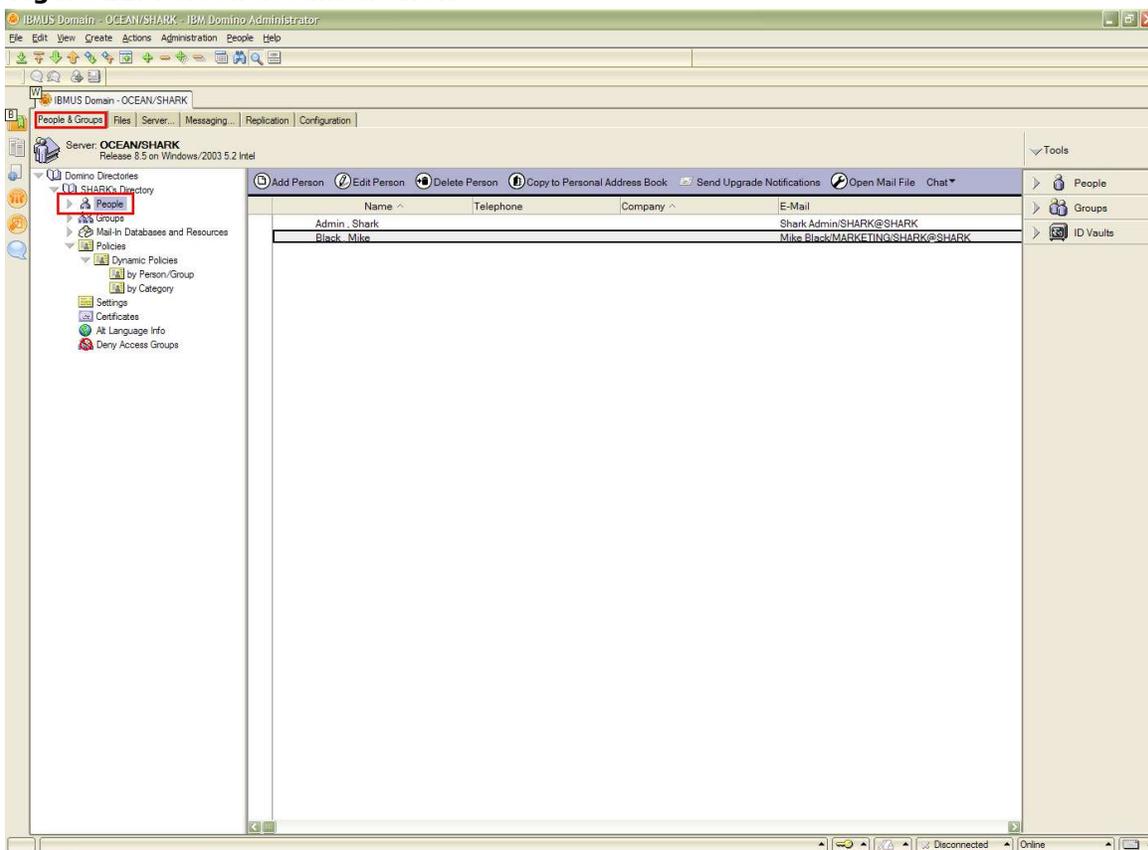
After opening it, you should see a screen similar to that shown in figure 12 containing all the information available for a specific user. Click through the tabs to get an idea of what can be configured in the Person document.

Figure 12. Person document
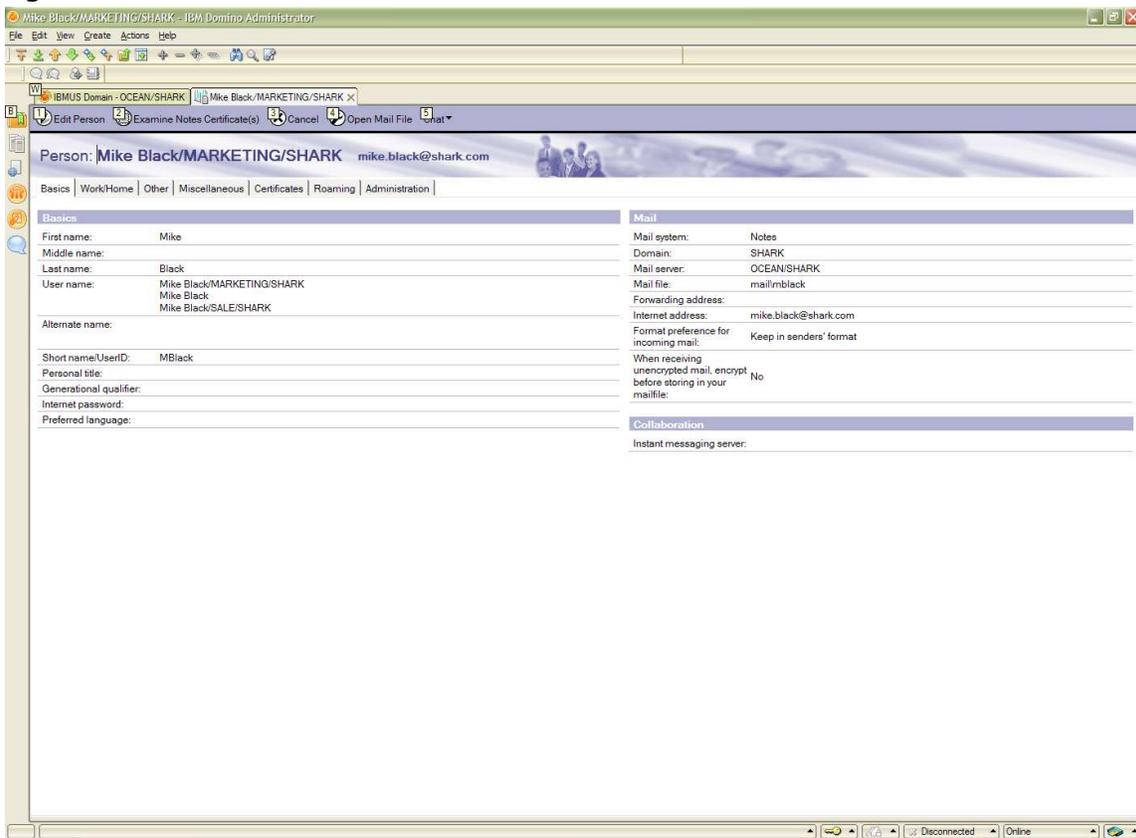
Notice that the "User Name" is Mike Black/MARKETING/SHARK. According to the naming convention of Domino/Notes, Mike Black is the "common name", MARKETING is the "organizational unit", and SHARK is the "organization".

NOTE: The Person document, along with the Server and Configuration documents, are the most commonly used and often the most important as well, so understanding and becoming familiar with these documents is critical for a Domino administrator.

3.4 Group document

The Group document is used to create a group and to specify the members who belong to it, and contains the group's Internet address, the group type, etc. This can be useful when sending email to a group of people instead of individual recipients, restricting or allowing access to a determined group, creating rules, etc.

To access the Group document, click the People & Groups tab, select Groups from the left-hand navigation pane, and double-click on the Group document for the desired group (see figure 13).

As the figure shows, some groups already display by default, and groups can contain more than just users; some groups also contain servers, as is the case of the group "LocalDomainServers".

Figure 13. Group document view
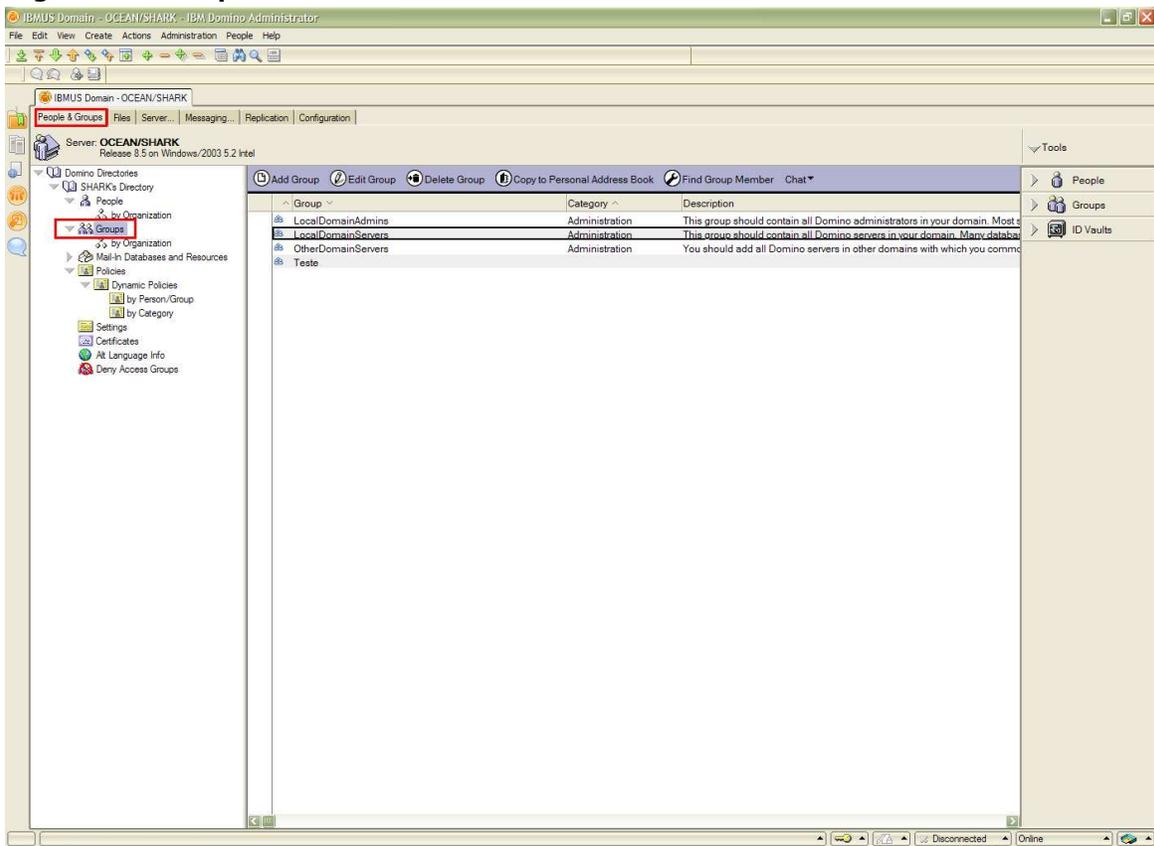
In figure 14, we can see the details of the group LocalDomainAdmins, such as the group's name, type, members, and Internet address. In this case the group does not have an Internet address, but you could create one so that all email delivered to this address will be delivered to all the members specified in the group.

Figure 14. LocalDomainAdmins Group document
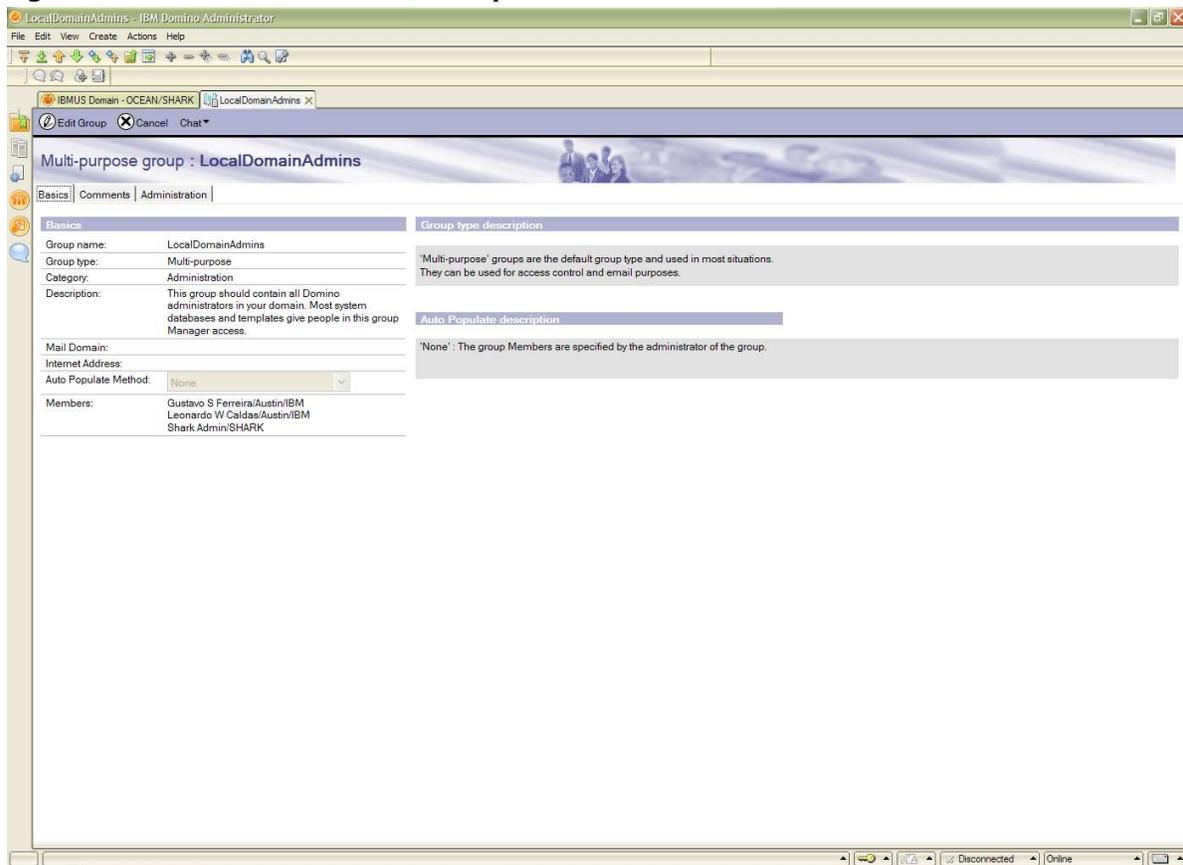
3.5 Server Mail rules

Server mail rules allow Domino administrator to filter messages passing through the server's Mail.box based on the content of the messages as defined by some criteria.

When a message arrives in the server's Mail.box, it checks whether the message meets any conditions defined by the administrator. If it does, then the server automatically executes the action specified in the server mail rule. If it does not meet any specified conditions, then the message continues its normal flow.

To access the system mail rules, open the Configuration document, click the Router/SMTP tab, then the Restrictions and Controls tab, and then finally the Rules tab (see figure 15).

Figure 15. Rules window
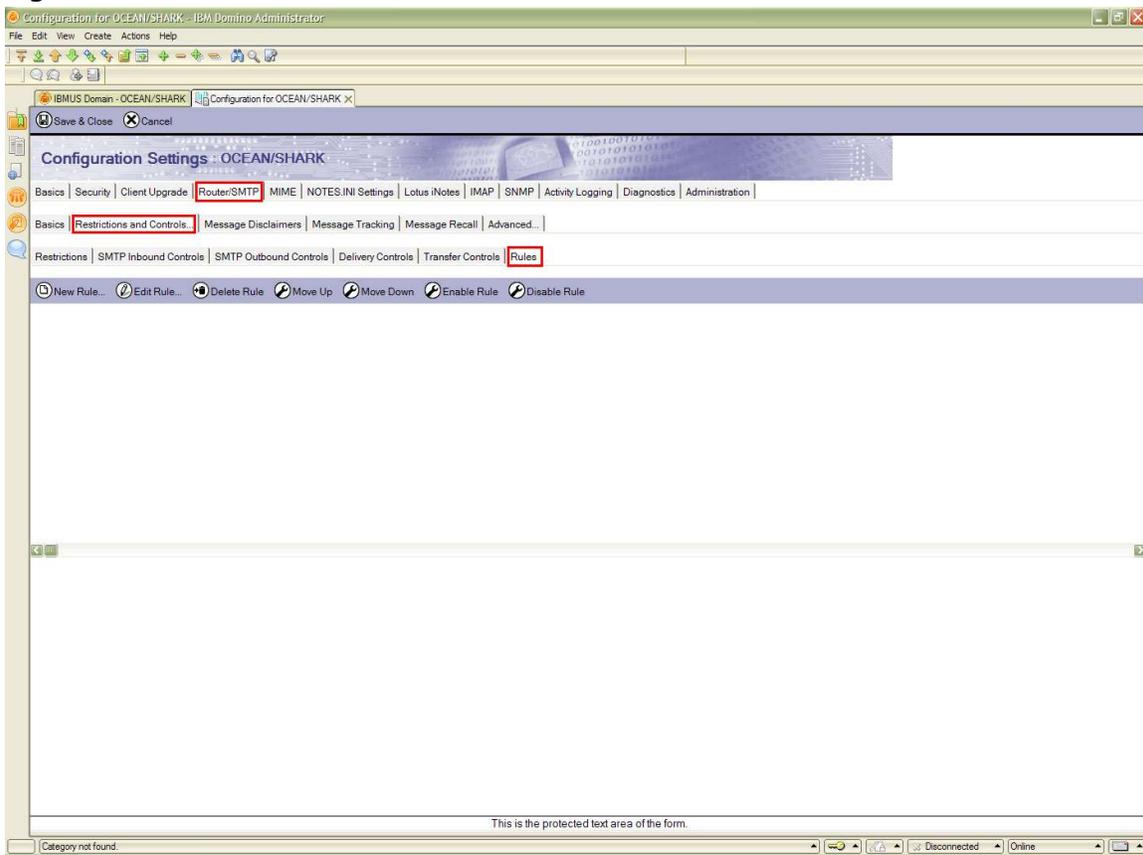
To create a new rule, put the document in into edit mode by clicking the Edit Server Configuration button on the top, and then click New Rule, as shown in figure 16, which already contains some rule examples.

Figure 16. Create a new rule
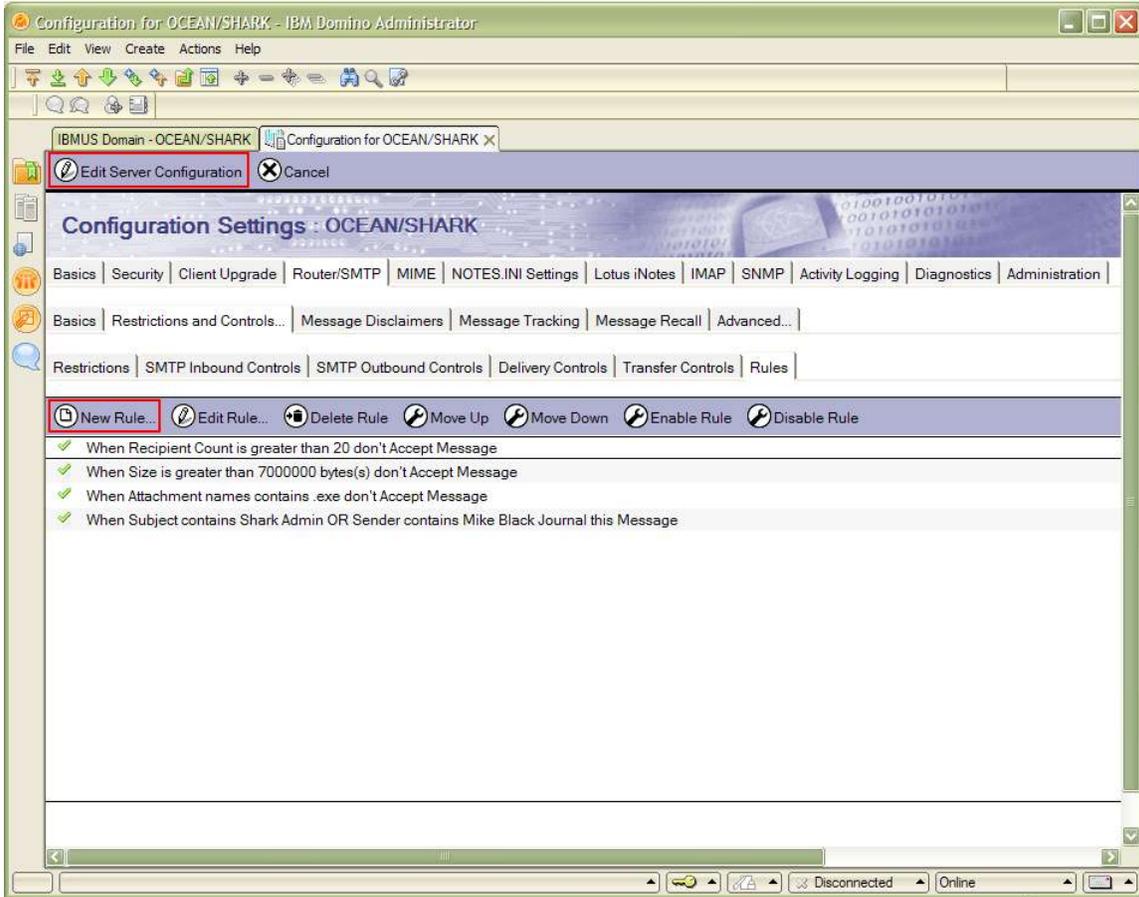
The Server Mail Rule – New Rule window opens, allowing you to create a new system mail rule. The top section is where you specify the condition(s) for a certain rule; the bottom part is where you define what should be done to the message, in case the specified condition is met (see figure 17).

Figure 17. Server Mail Rule – New Rule window
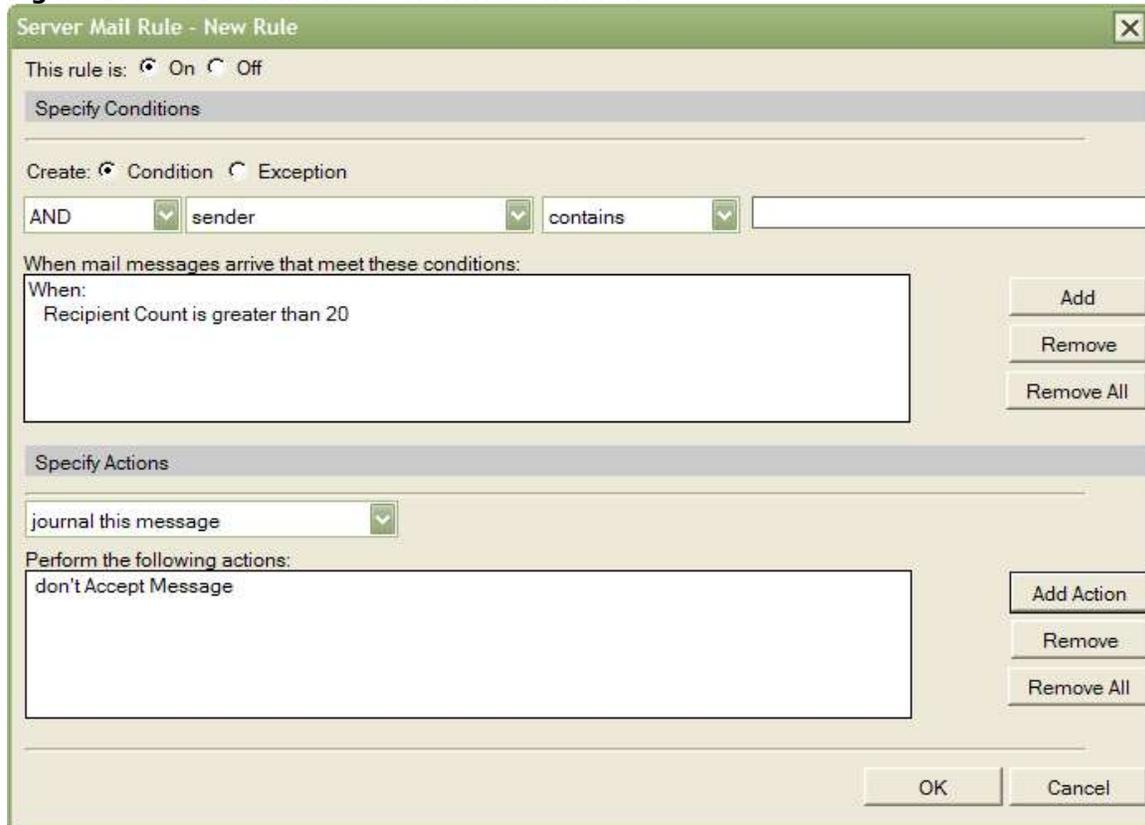
Possible actions for a rule include journaling a message, moving it to a database, refusing to accept or deliver a message, changing the routing state of a message, or stopping the processing of subsequent rules. Rule conditions are based on content in the message header or in the message body.

This feature can be quite useful in preventing messages with certain content from leaving the server or being delivered to users, in blocking spam, or enforcing company guidelines and business conduct policies or any other form of abuse.

4 Server commands

The most common way to send a command to the server is either through the Domino Administrator client or directly into the server console.

To access the server console through the Domino Administrator, click the Server tab, then the Status tab, and then select Server Console (see figure 18). Finally, click the Live button on the right-hand side to enter the live mode.

This allows you not only to issue commands but also to view everything that is being executed in the server console. If you just wish to send commands to the server console and view the result, you can input and send the command through the Domino Command box at the bottom of the window.

Figure 18. Server console Live mode
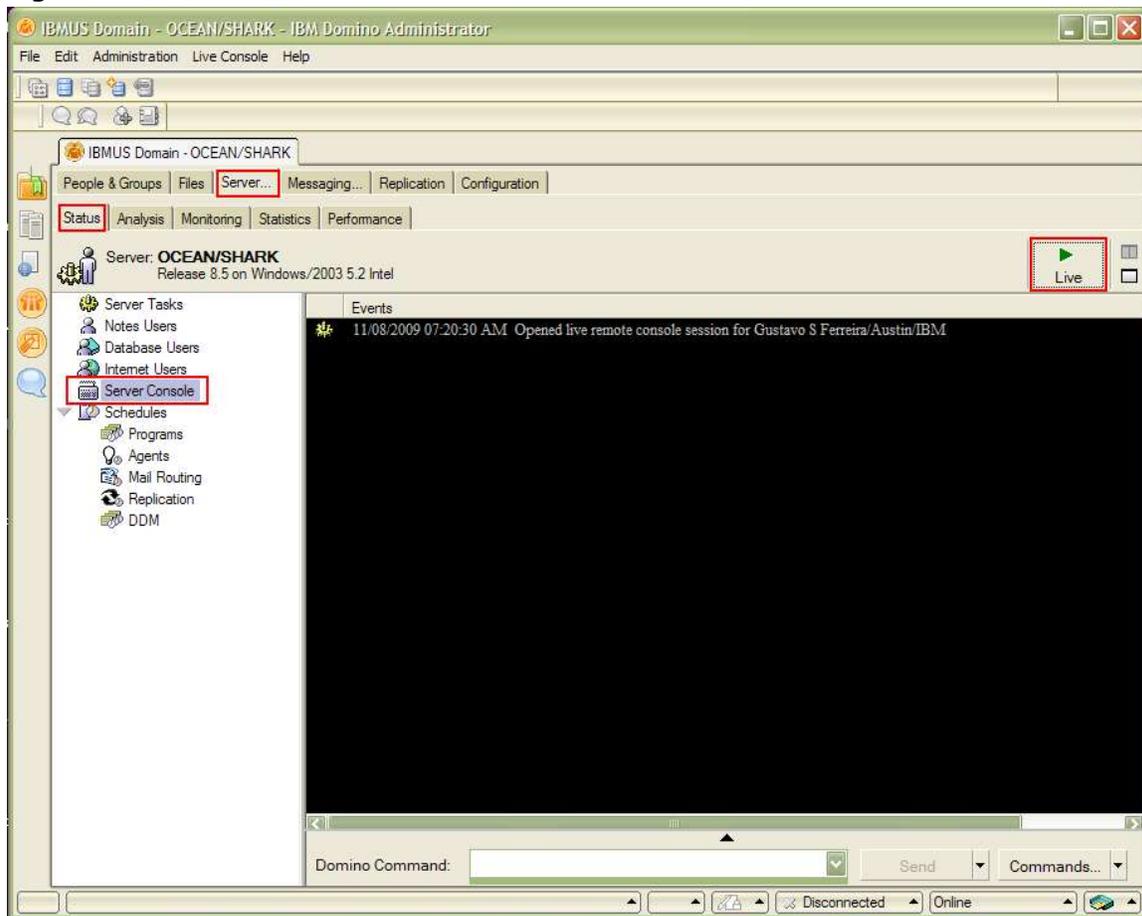
In the examples below, we issue the commands directly into the server console, but this can also be done via the Administrator client. This should help you get more familiar with how to issue commands on the server. For more information about available commands and their correct syntaxes, enter "HELP" in the server console or consult the Administrator Help.

Most commands have an associated abbreviation to make things a little easier; to see some common command abbreviations, refer to the Lotus Support Technote #1100045, titled "Domino server console command abbreviations."

4.1 Show commands

The Show command has several options available, but here we use the "show server" and the "show tasks" commands for our examples.

The show server command is used to display information about the Domino server, including the version of the server, as shown in the first line of figure 19.

Figure 19. Show server display

As the name itself implies, Show Tasks displays information about the server tasks currently running and their status (see figure 20).

Figure 20. Show tasks display

4.2 Tell commands

The Tell command has several options, but we use the "tell amgr" and "tell router" commands for our examples here.

Tell amgr. Amgr is the Domino task responsible for running agents. This command displays the agents that are scheduled to run on the current day, as well as the database in which they are located (see figure 21). One common agent is the OutOfOffice agent, or OOO, for short.

Figure 21. Tell agmr display

Tell router. The router task is responsible for delivering mail to databases located on the server and for transferring mail to other servers, if necessary. Quite often it is necessary to check the router's queues or update its configuration tables, to verify it is working correctly.

The OOO feature can run as an agent or as a service, depending on how it is configured. The example in figure 22 shows how to view the information regarding the OOO when running as a service, which is through the router.

Figure 22. "Tell router o" display

For a brief explanation of what these commands (and a few more) do, see Technote # 1382161, titled "Tell commands for the Domino router."

4.3 Starting and stopping tasks

It's often necessary to stop a certain task or to start another one, either for testing purposes, maintenance, a performance issue, or whatever the case may be.

As you probably noticed in the last example above, you can stop a task running on the server by issuing the command "tell task quit", or "tell task q" for short, where "task" is the task you wish to terminate (for example, "tell http q" or "tell smtp quit").

This is yet one more option for the tell command and is illustrated in figure 23.

Figure 23. Quit command examples
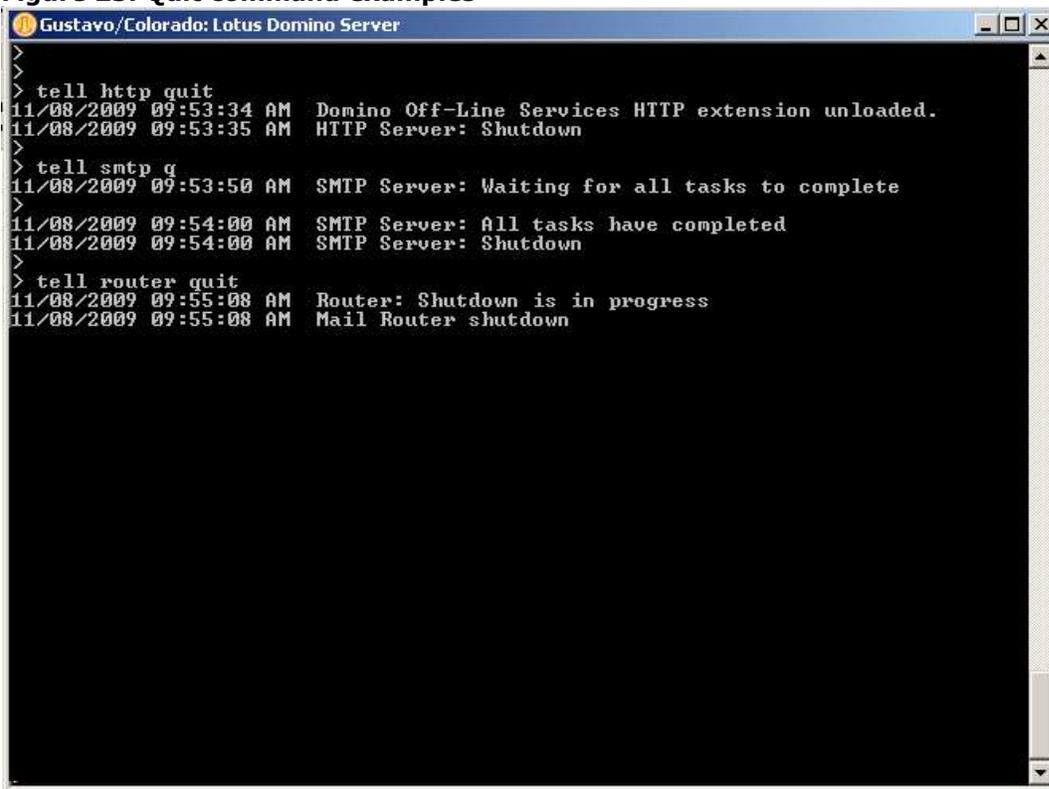
You can start a task by using the command "load task", where "task" is the task you wish to start (for example, "load router" or "load http"). In figure 24 we start the tasks we stopped previously.

Figure 24. Load task command example

Restart server. Some changes made to the server, especially if made to the Server document, may require an entire server restart (see figure 25).

Figure 25. Restart server display

Quit server. When you must stop the entire Domino server completely, we recommend using the quit command, or "q" for short. Some examples of when this is necessary are when restarting the operating system, performing hardware maintenance, and installing a fixpack.

> **IMPORTANT:** Be sure to wait until the server has completely and safely terminated all its tasks and services (see figure 26). The server console window should be closed automatically by the server when the entire shutdown process is complete. Do not close it manually as this may cause the server to crash.

Figure 26. Quit server display

5 Activities

Now let's discuss some server administrative activities.

5.1 Registering a user

Here we describe the steps for a standard, basic user registration. For information on other methods, for example, registering multiple users using text files, consult the Domino Administrator Help (click F1 for the shortcut to Help).

To register an example user, we use the following required information:

First name of the user: Mike
Last name of the user: Black
Department: SALE
Internet address (email): mike.black@shark.com

1. Open the Domino Administrator and click the Configuration tab (recall figure 7).

2. Click the Registration button on the right-hand side, as shown in red in figure 27, and select Person from the list of options.

Figure 27. Register Person
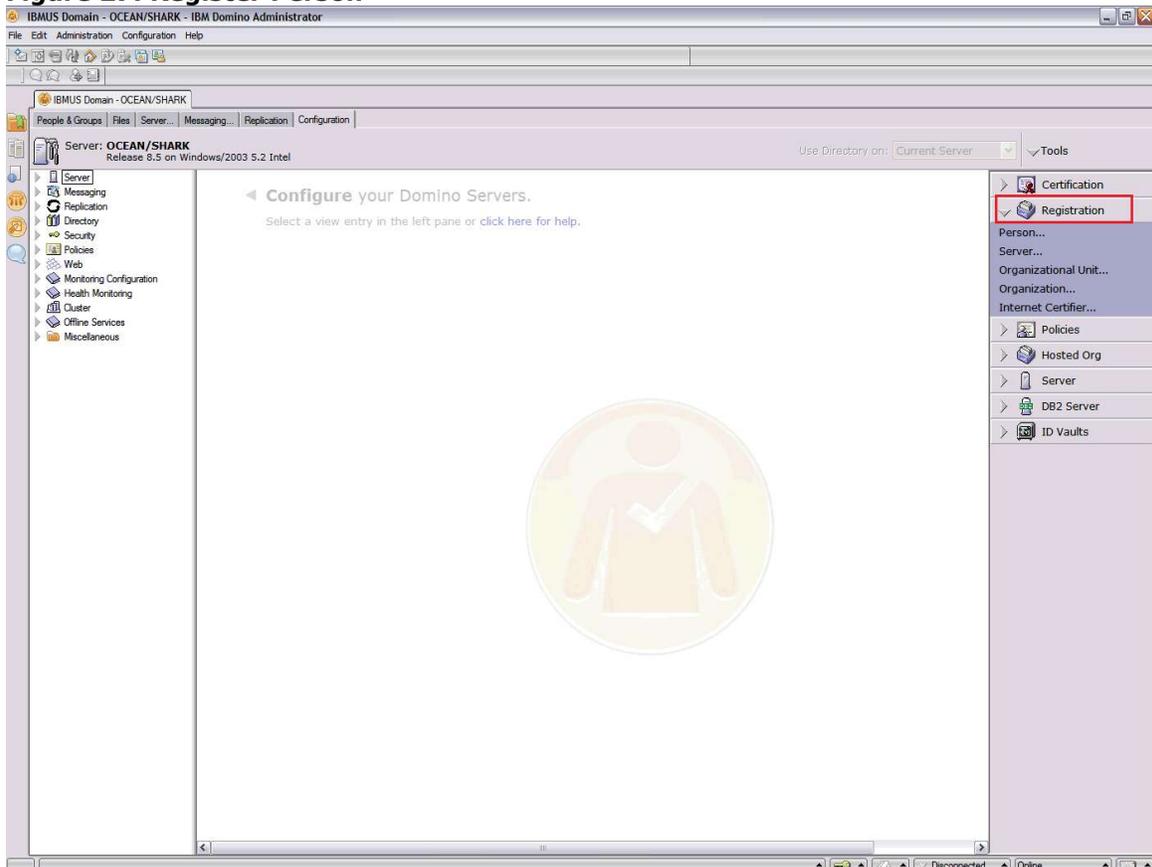
3. Now you must select the cert.id (Domino Domain) or the Organization Unit (OU) under which you want register the user. Figure 28 shows an example of a cert.id (/SHARK, highlighted in red). Some companies use the name of the corporation as the cert.id.

4. Type in your password for the cert.id and click OK.

Figure 28. Certifier Name and password prompt
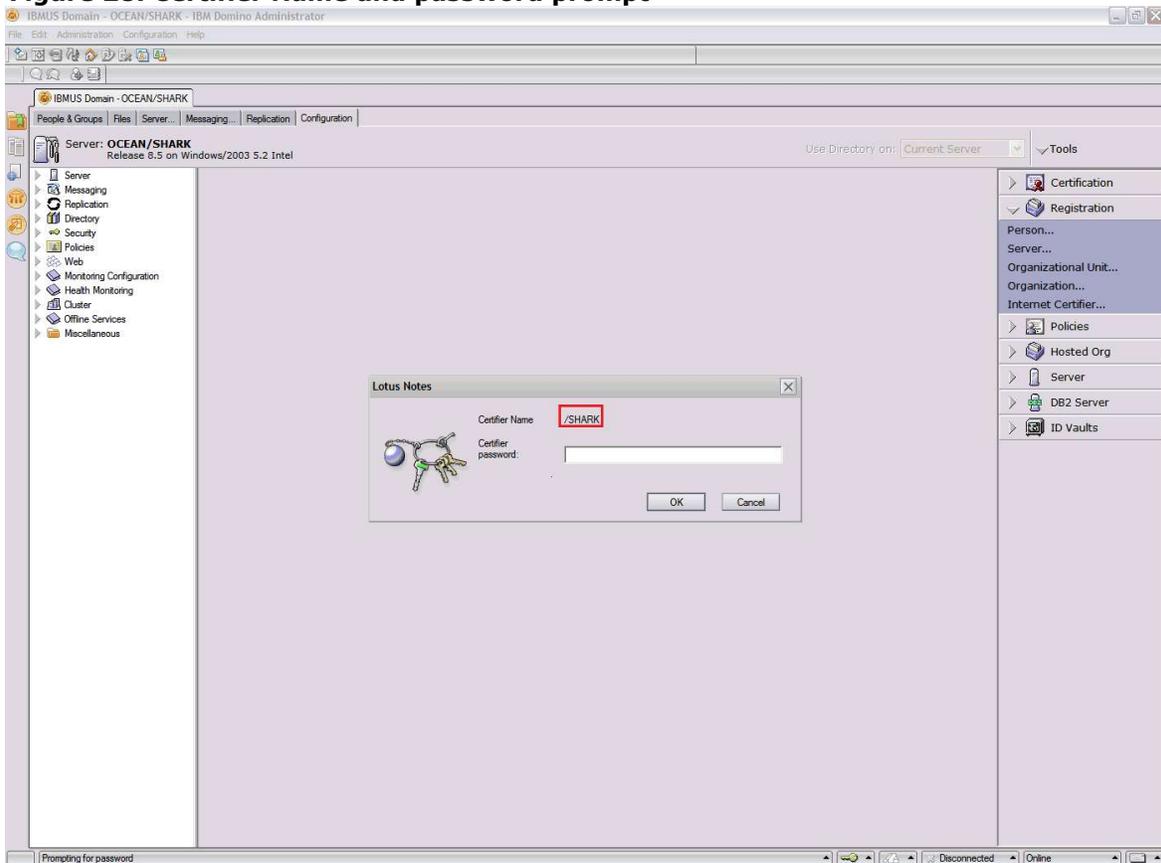
5. In this case, the user is to be registered under the "SALE" department, so we must switch to the SALE OU (/SALE/SHARK, in red in figure 29). Type your password for the SALE ID and click OK.

Figure 29. OU name password prompt
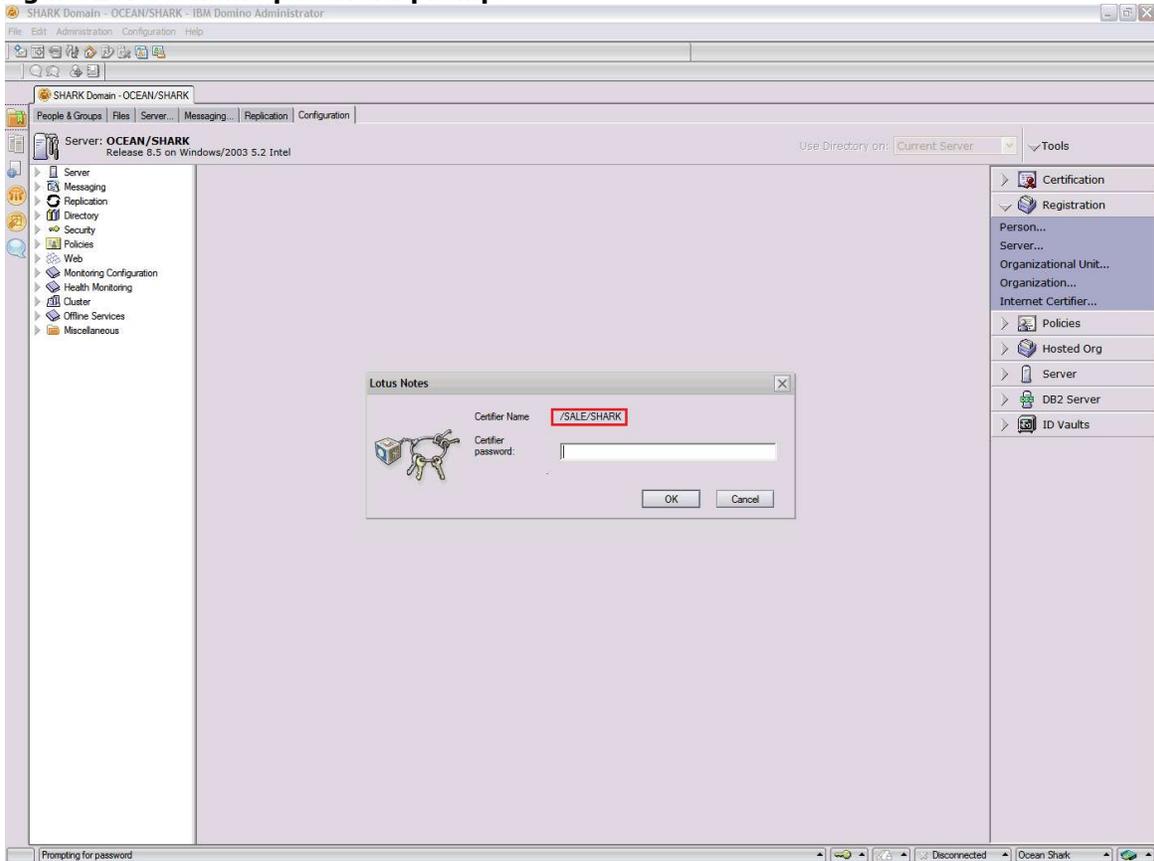
6. In the Register Person – New Entry window (see figure 30), the Registration Server name is OCEAN/SHARK; enter the required fields of First name, Last name, and Password for our example user, and then click the Password Options button.

Figure 30. Register Person – New Entry window
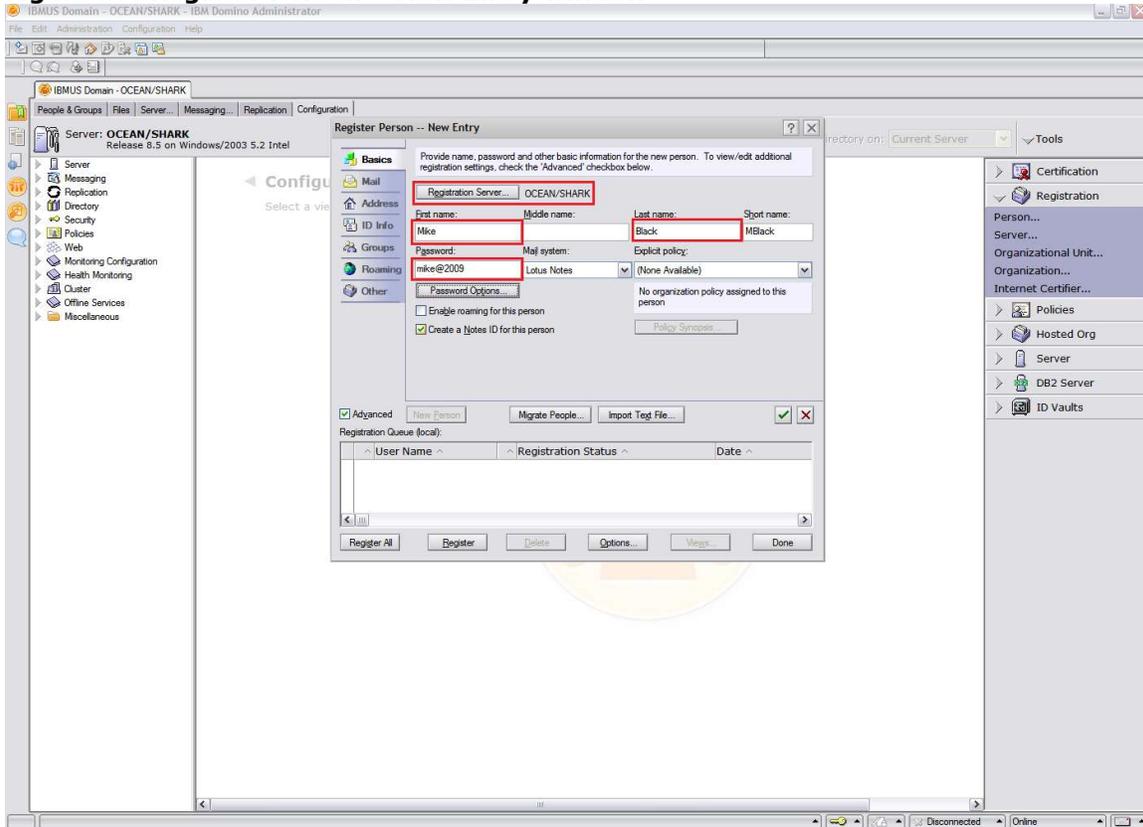
7. In the Password Options window (see figure 31), enable (check mark) the Set internet password option (in red) if you want the user to be able to access his mail database via iNotes (that is, with a browser). Click OK.

Figure 31. Password Options window
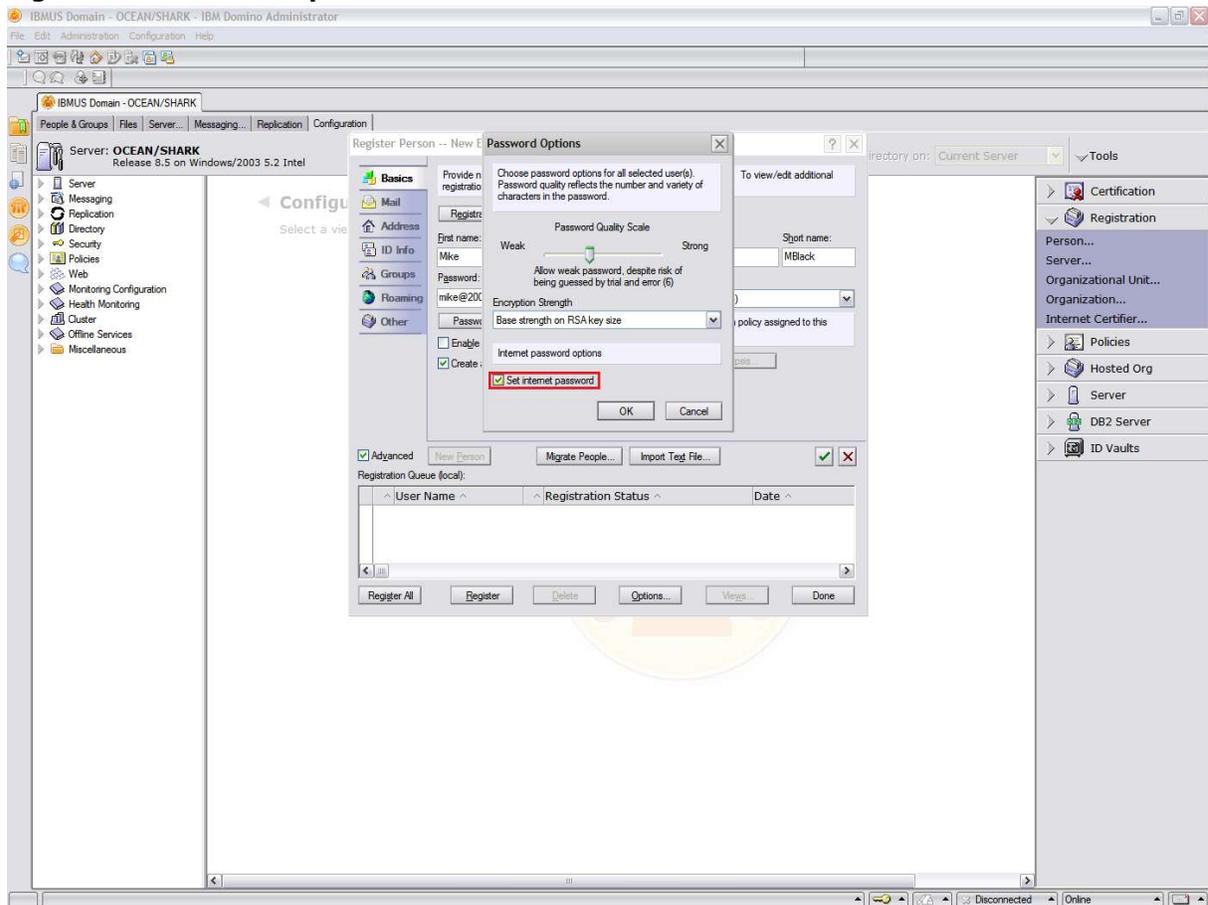
8. Select Mail from the the left-hand side of the Register Person – New Entry window and verify that the Mail Server field shows the correct name of the user's mail server (see figure 32).

- For the "Mail file name" field you can use any name, but make sure the name of the mail database does not exist in this mail server; also, the folder should be "mail\".

- In this example we used the default suggestion for the Domino Administrator, that is, first letter of the first name and the last name.

- In the end, make sure you select the "Mail(R8.5)" in the "Mail file template" field.

Figure 32. Mail fields
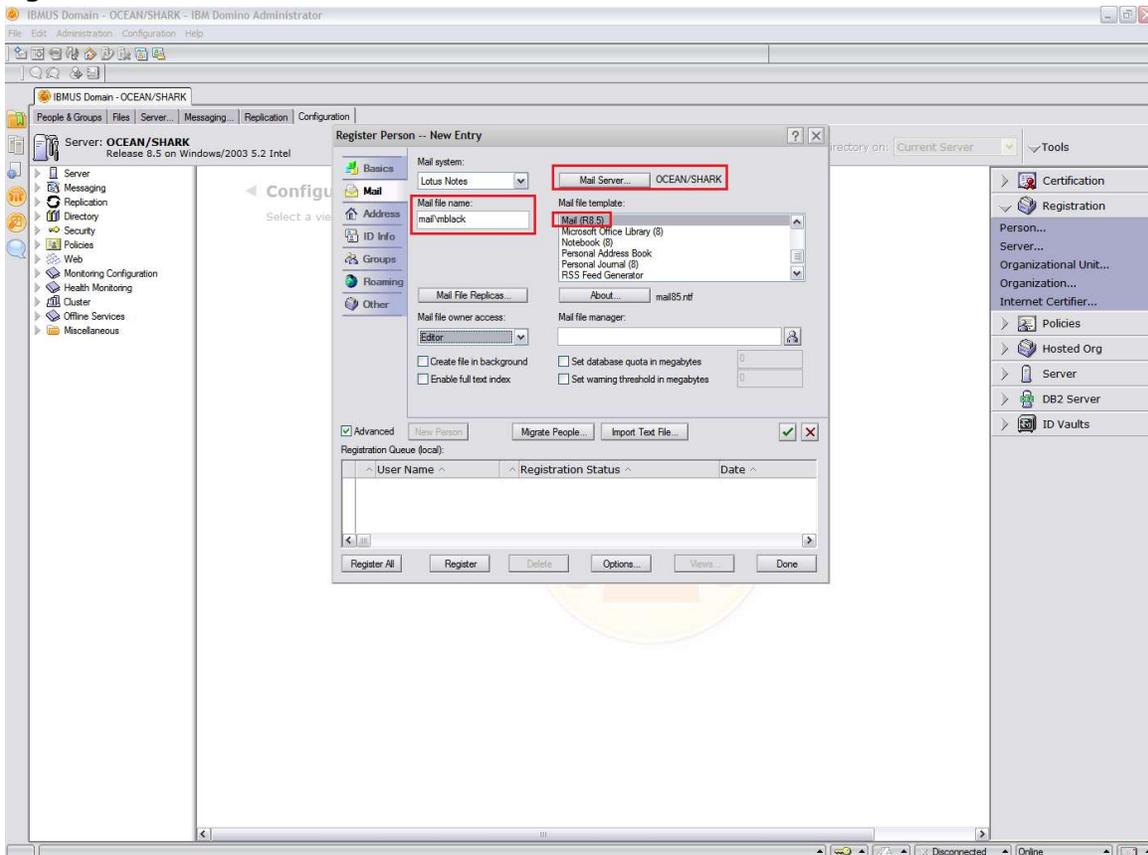
9. Select Address from the left-hand side of the window. In the Internet address field, set the Internet address of the user, making sure you use an Internet domain registered in this Domino server (see figure 33). In the Internet Domain field, set the Internet domain for this user.

Figure 33. Address fields
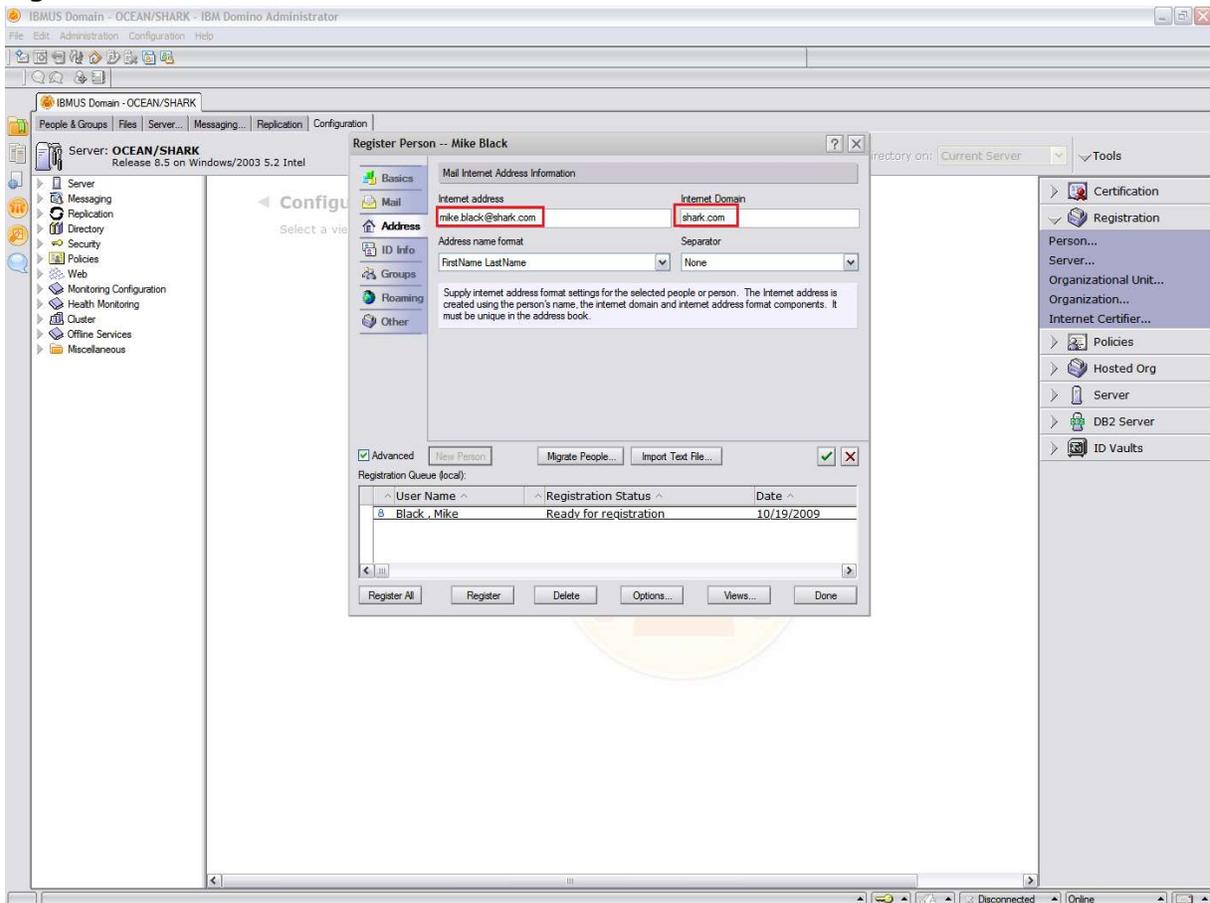
10. Select ID Info and make sure the option "Create a Notes ID for this person" is enabled and that the Certifier ID is set correctly (see figure 34). We recommend not enabling the option "In Domino directory", especially if you use any initial standard passwords.

11. Enable the "In file" option, and set the path where the user ID will be saved in the registration.

12. Now click the large check button [✓] , to confirm all the user's information is correct.

Figure 34. ID Info fields
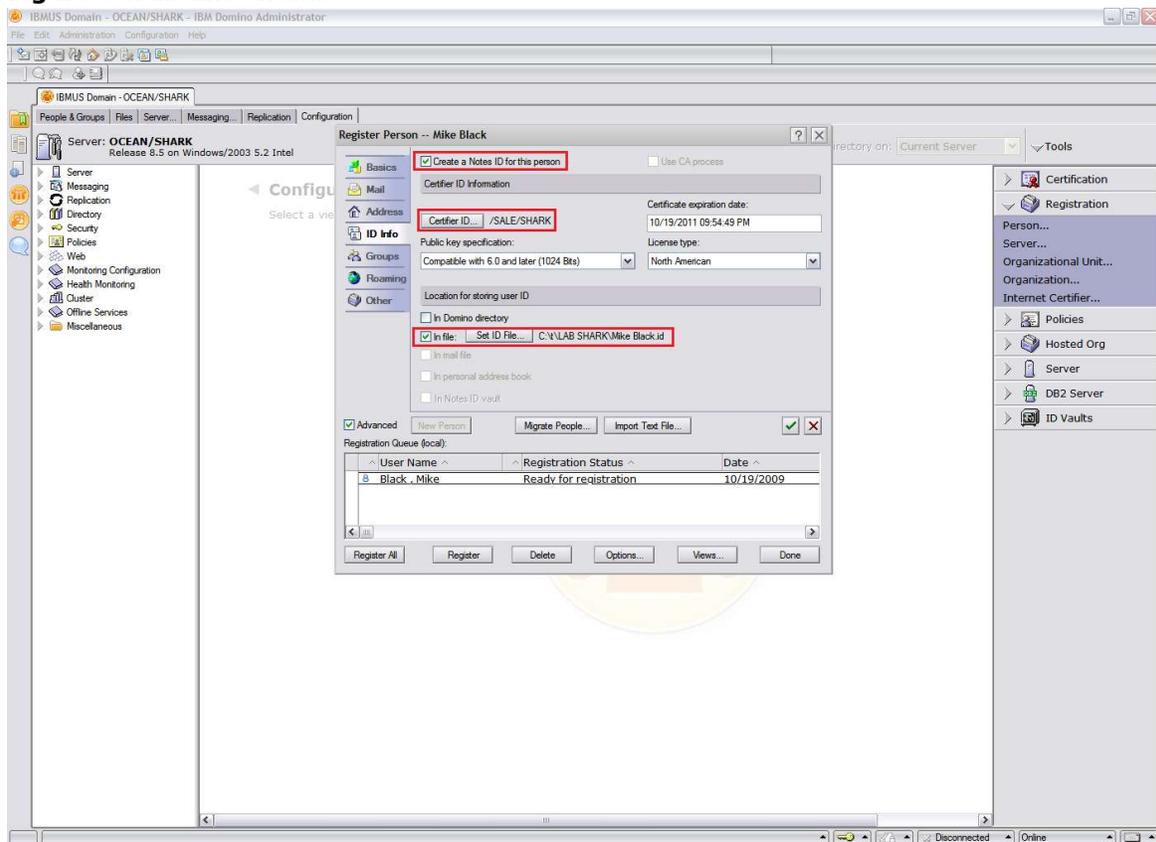
13. If an OK symbol displays for the user, you can go ahead and click the Register button if you only have one user to register. If you have more than one, click the Register All button.

14. After the user is registered, a window pops up confirming that the registration is complete, or displaying how many errors the registration had. If there are any errors, you need to check the local Log.nsf to determine what the issue was.

15. Finally, when you are finished with the registration, click the Done button.

5.2 Recertifying a user

You have two options for recertifying users, either via the AdminP task (recommended) or manually (if a user's ID has expired). If you need to recertify the user manually, refer to the Domino Administrator Help (F1 key) and search for the topic "Recertifying a certifier ID or a user ID".

To recertify a user via the AdminP task:

1. Open the Domino Administrator, click the People & Groups tab, select People from the left-hand pane, and then select the user(s) you want to recertify (see figure 35).

Figure 35. Select user(s) to recertify
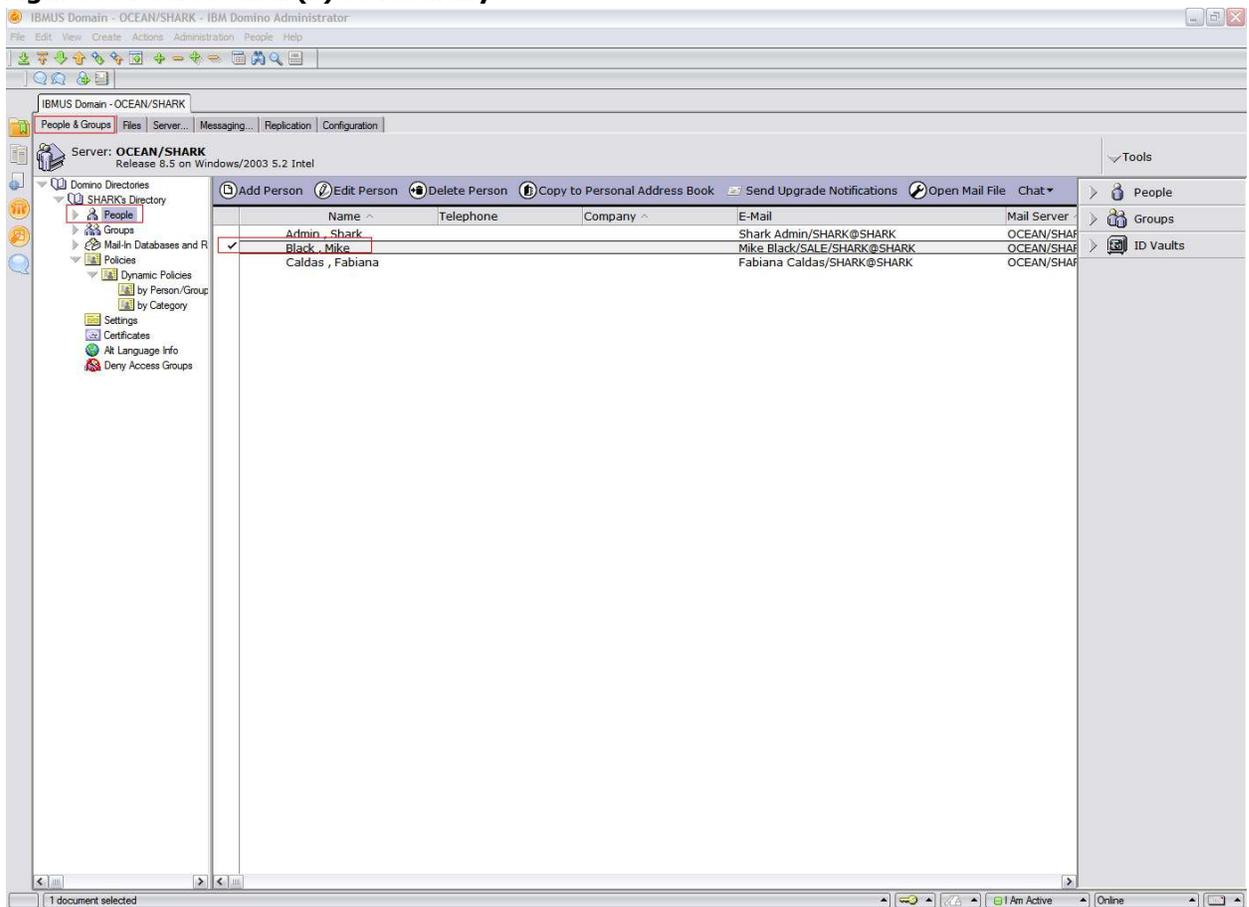
2. Expand the People twistie on the right-hand side and select Recertify from the drop-down menu (see figure 36).

Figure 36. Recertify menu option
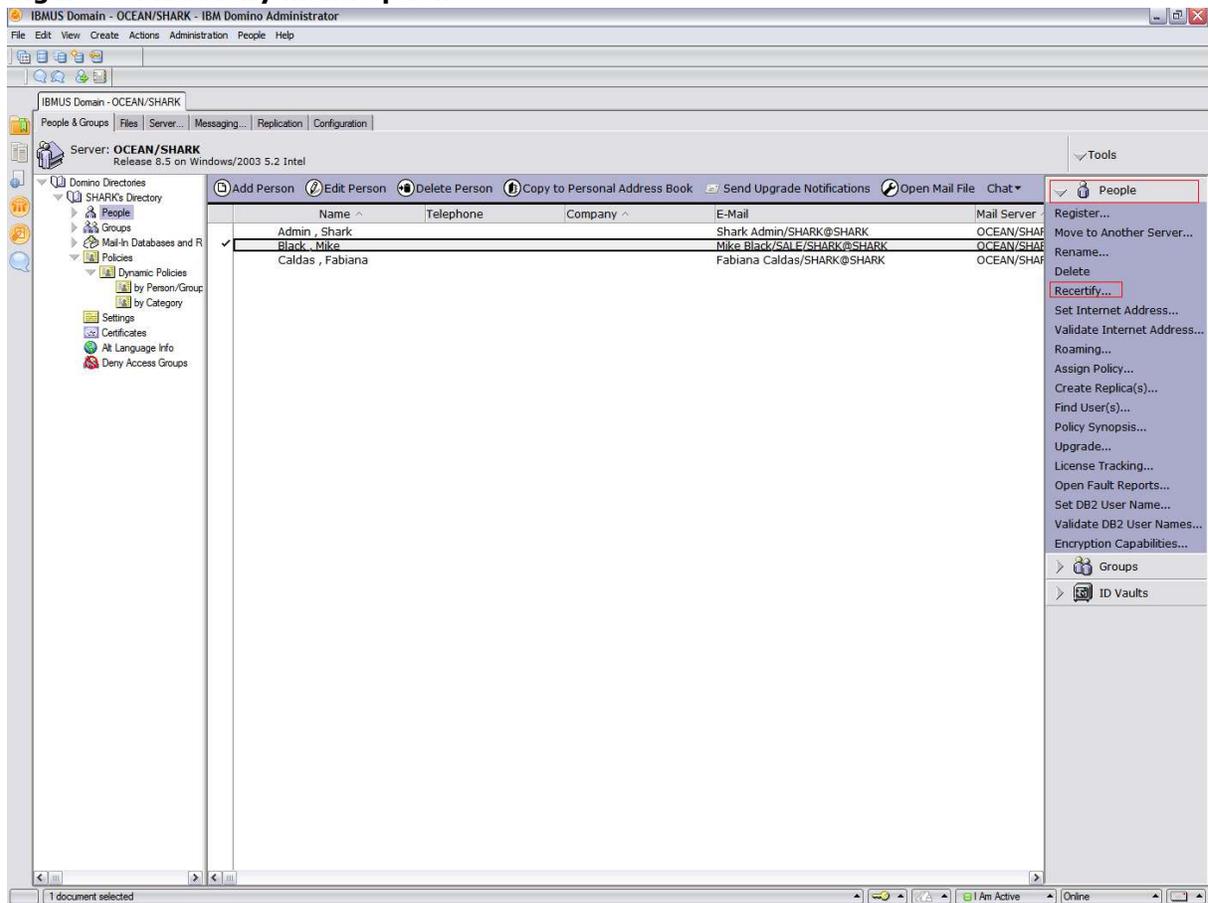
3. The Choose a Certifier window should display. Make sure the server name and the cert.id or ID from the user's OU are correct (see figure 37). If they are, then click OK.

Figure 37. Choose a Certifier window
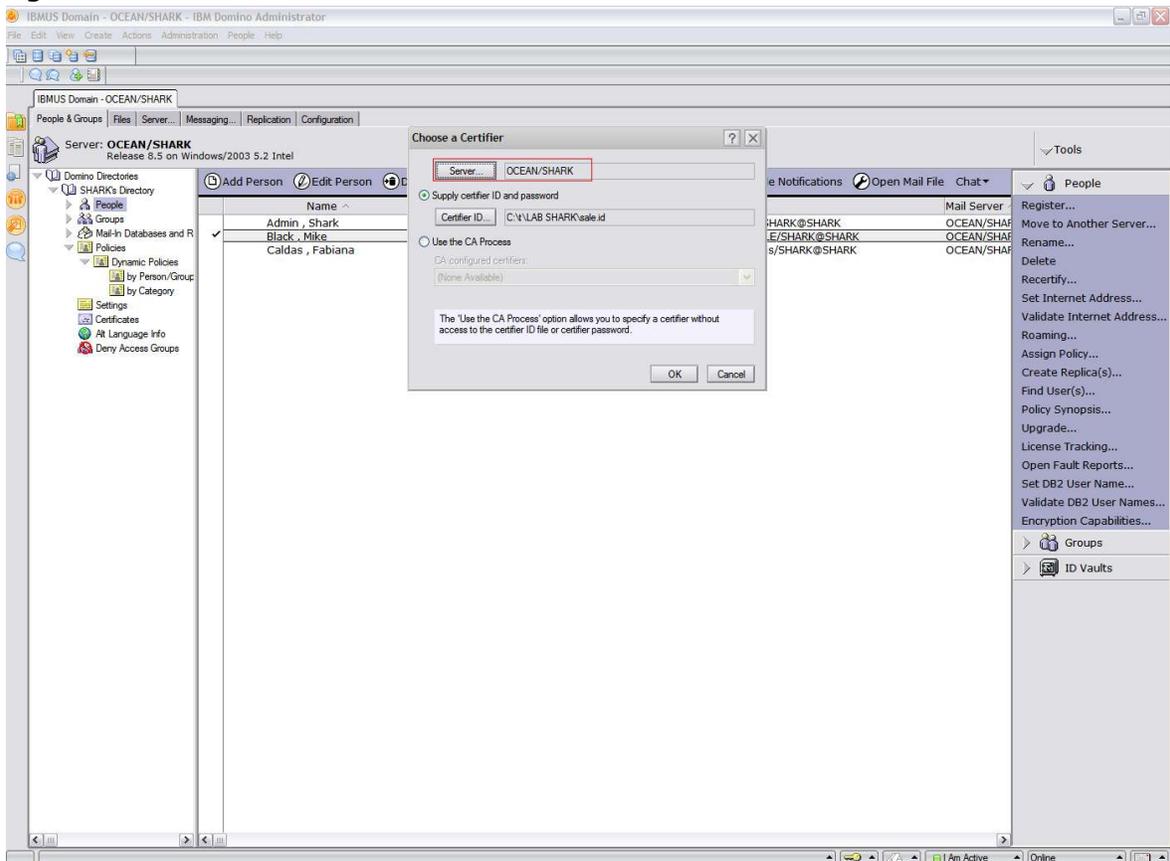
4. In the password prompt box, type the password for the OU ID, as shown in figure 38.

Figure 38. Certifier password prompt
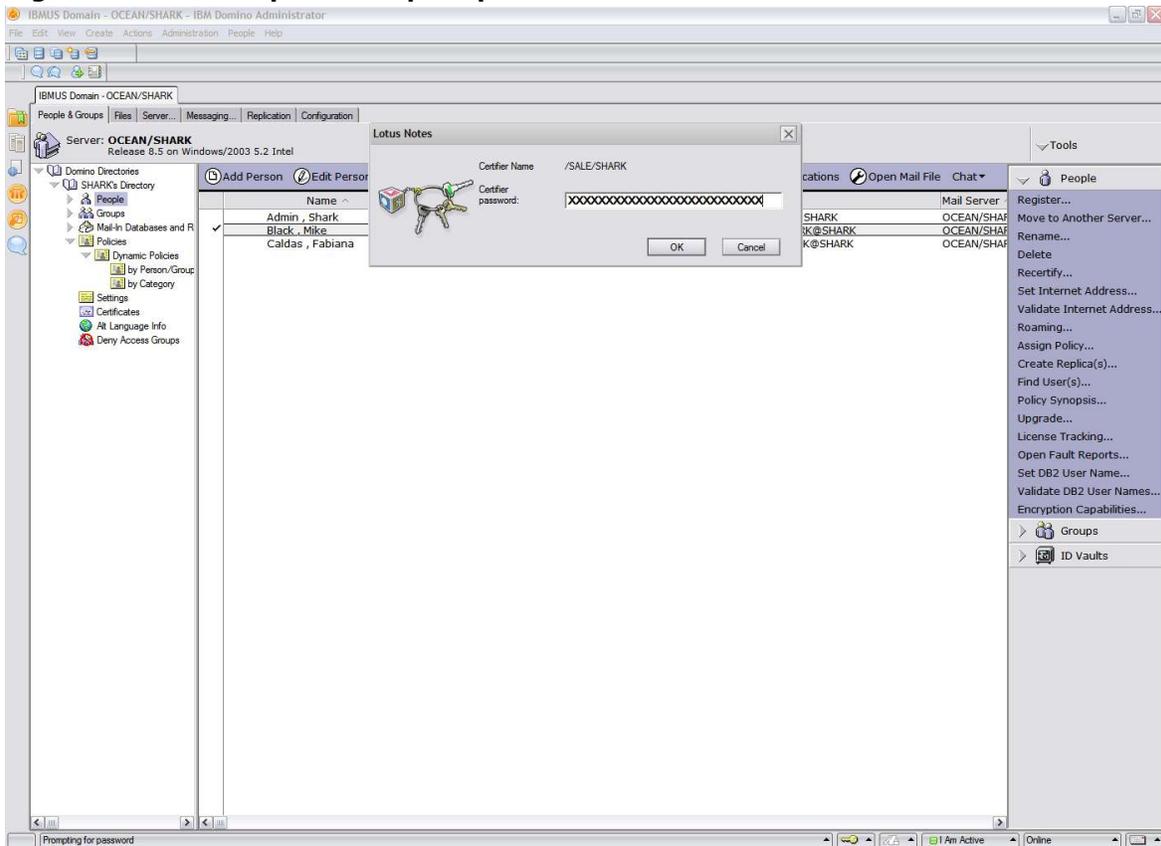
5. You should now see the Renew Certificates in Select Entries window, in which you can change the date when the user's certificate will expire (see figure 39). It's recommended to set the date of expiration no more than 2 years out. After setting the date, click OK.

Figure 39. Renew Certificates in Select Entries window
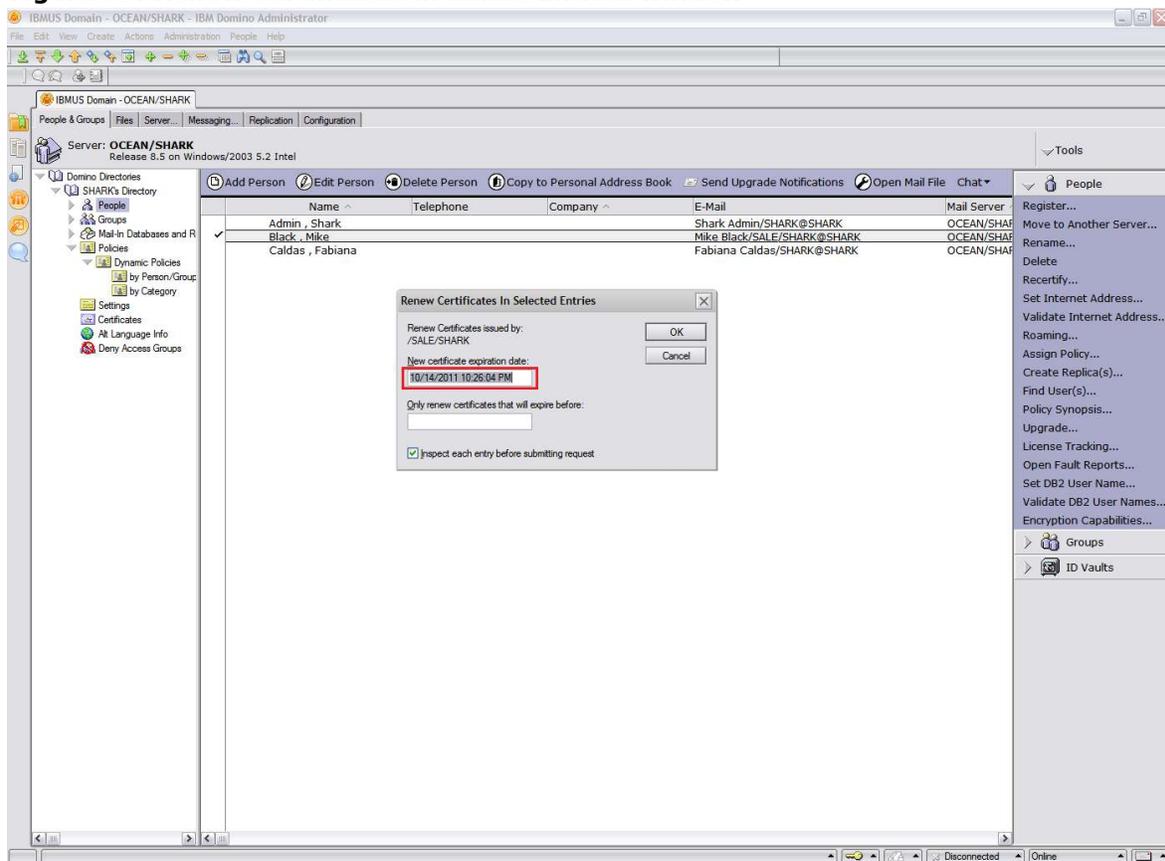
6. You should now see the Recertify User window (see figure 40). Confirm the information is correct and click OK.

Figure 40. Recertify User window
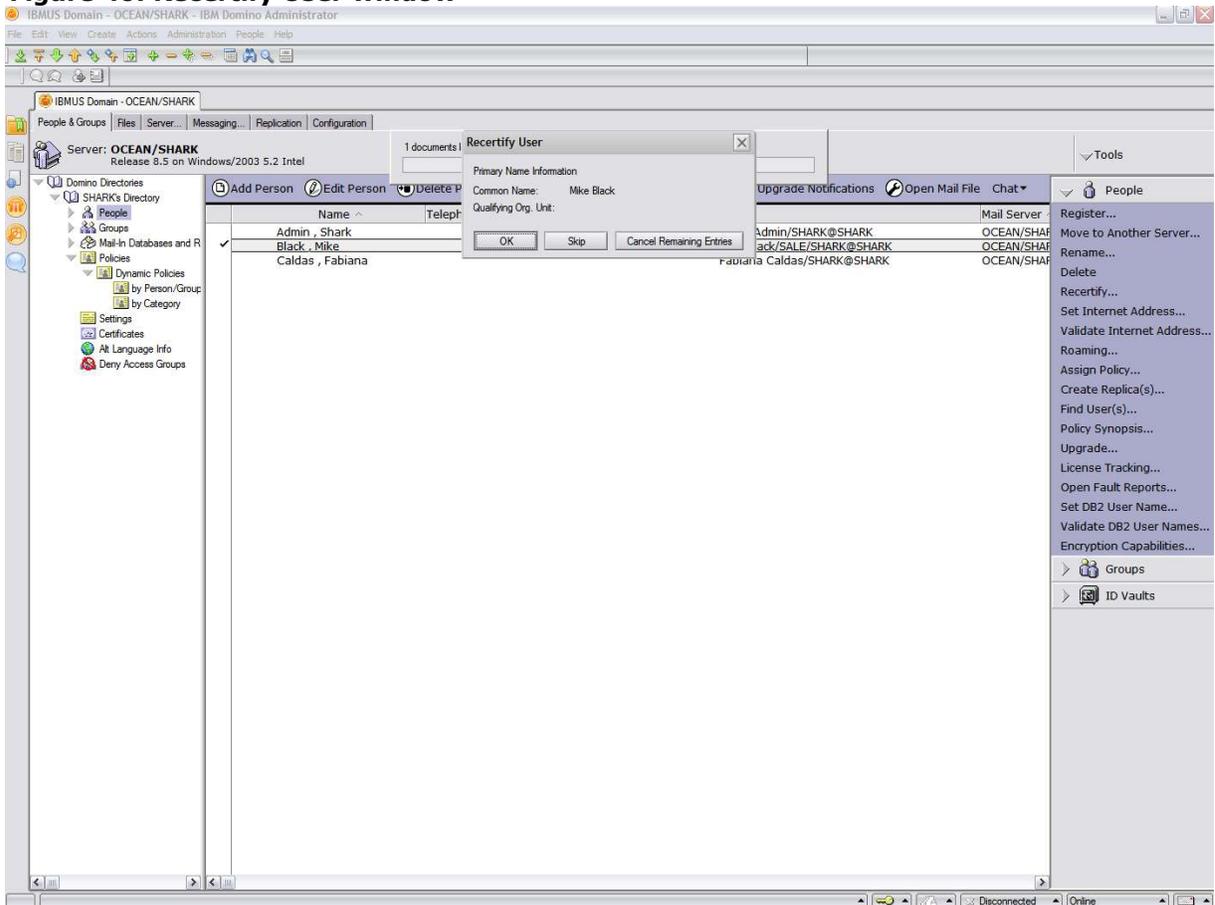
7. If the process is successful, you should see the Processing Statistics window, as shown in figure 41.

Figure 41. Processing Statistics window
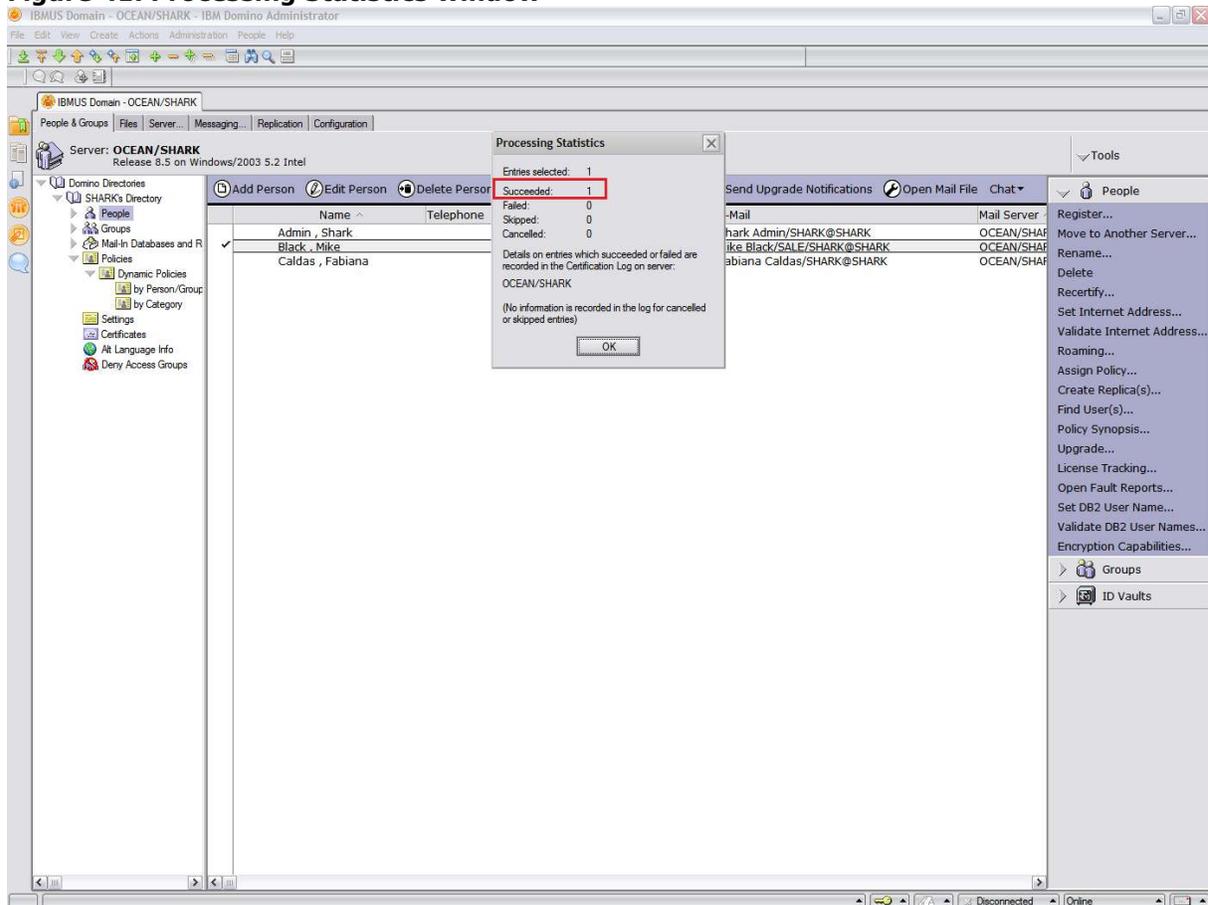
By default, AdminP processes requests marked as daily, at 12:00 AM (midnight). If you need to run this process before 12:00 AM, issue the command "tell adminp process new" on the Domino console.

To run the command from Domino's console (see figure 42):

1. Open the Domino Administrator, select the Server tab, and select Server Console from the left-hand pane.

2. Click the Live button and type the command "tell adminp process new" in the Domino Command field at the bottom of the screen.

3. Click the Send button.

Figure 42. Running server command from the Domino console
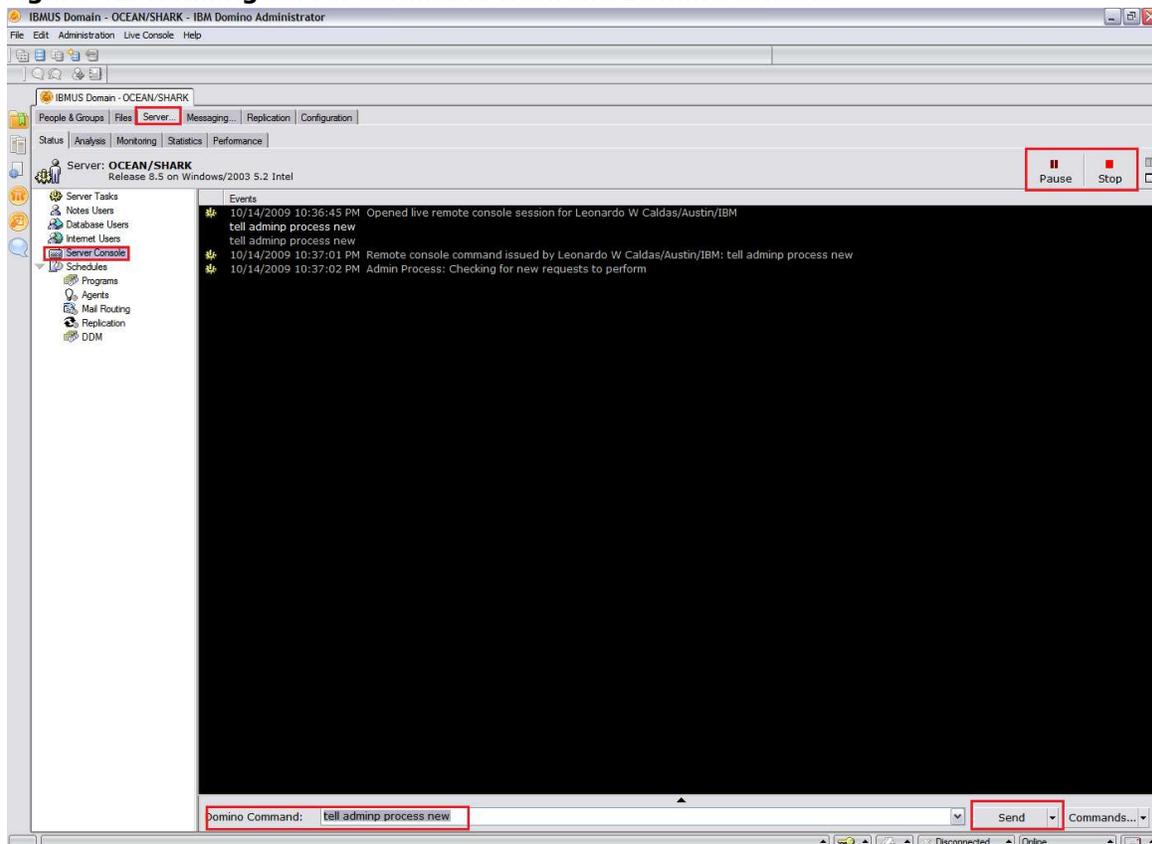
NOTE: The user's ID won't update until the user connects to the server after AdminP processes the request.

5.3 Renaming a user

The Rename User function can be used to change the name of users, as in the situation when a user gets married and changes the last name, but the most common reason is when a user moves to another department. (For more information, use the F1 key to access the Domino Administrator Help and search for the topic, "Moving a user name in the name hierarchy".)

For example, suppose the following user is to be moved to the department MARKETING:

   User: Mike Black
   Department: SALE
   Notes name: Mike Black/SALE/SHARK

1. Open the Domino Administrator, select the user you want to rename, and then select Rename from the right-hand menu (see figure 43).

Figure 43. Rename menu option
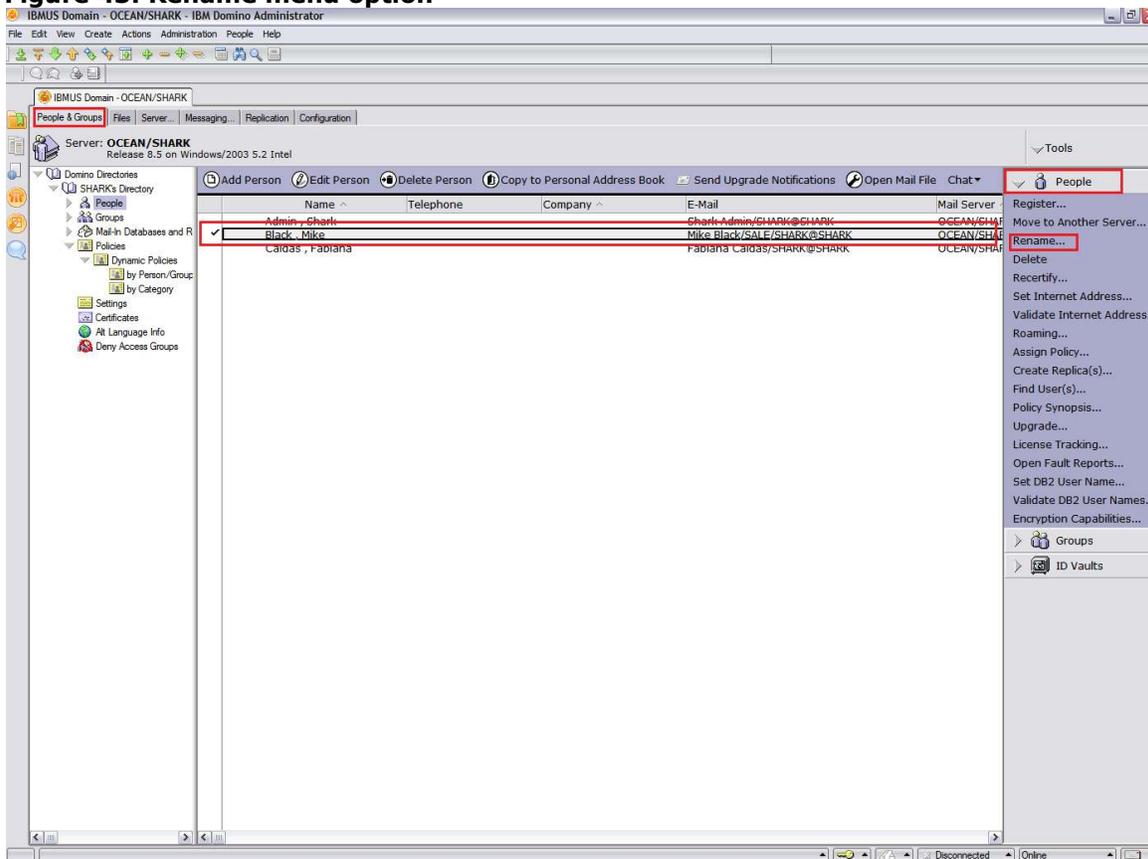
2. In the Rename Select Notes People window, click the Request Move to New Certifier button (see figure 44).

Figure 44. Rename Select Notes People window
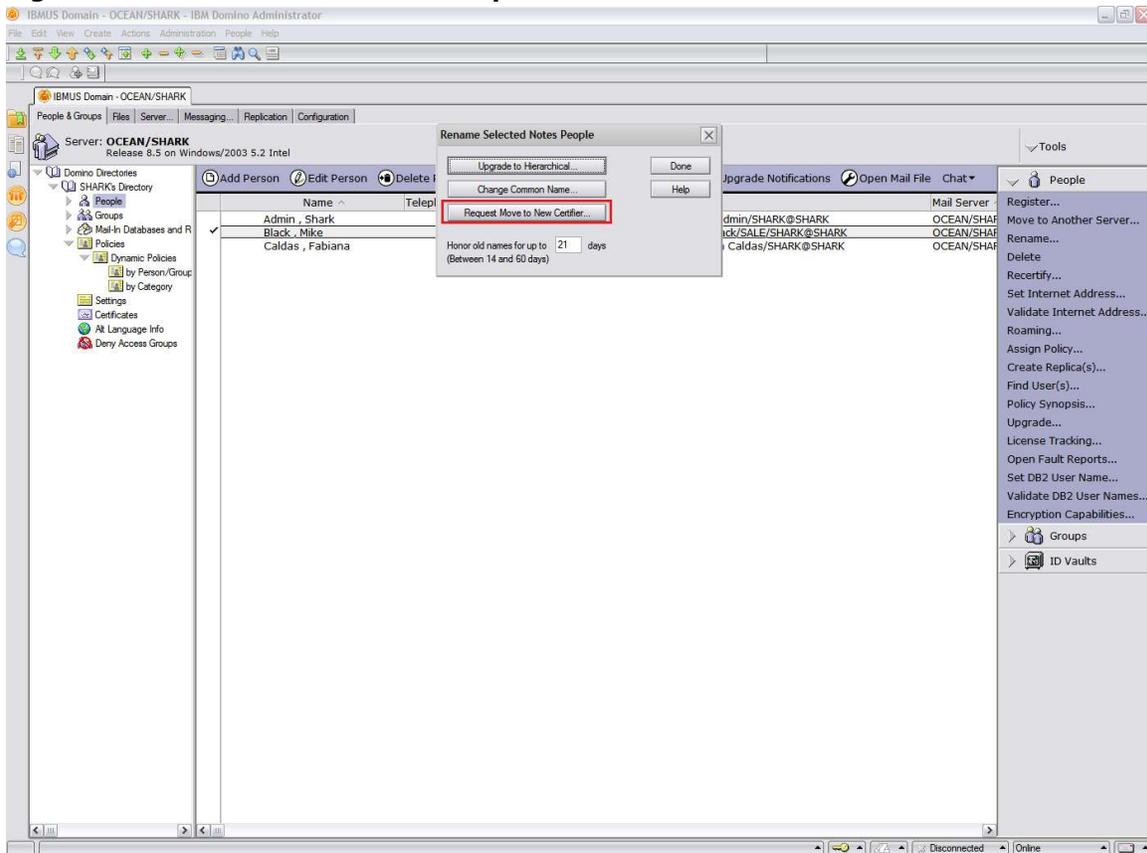
3. In the Choose a Certifier window, make sure to select the user's server and the OU's ID the user is now under, for example, SALE/SHARK (see figure 45). Type the SALE/SHARK OU's password, and click OK.

Figure 45. Choose a Certifier window
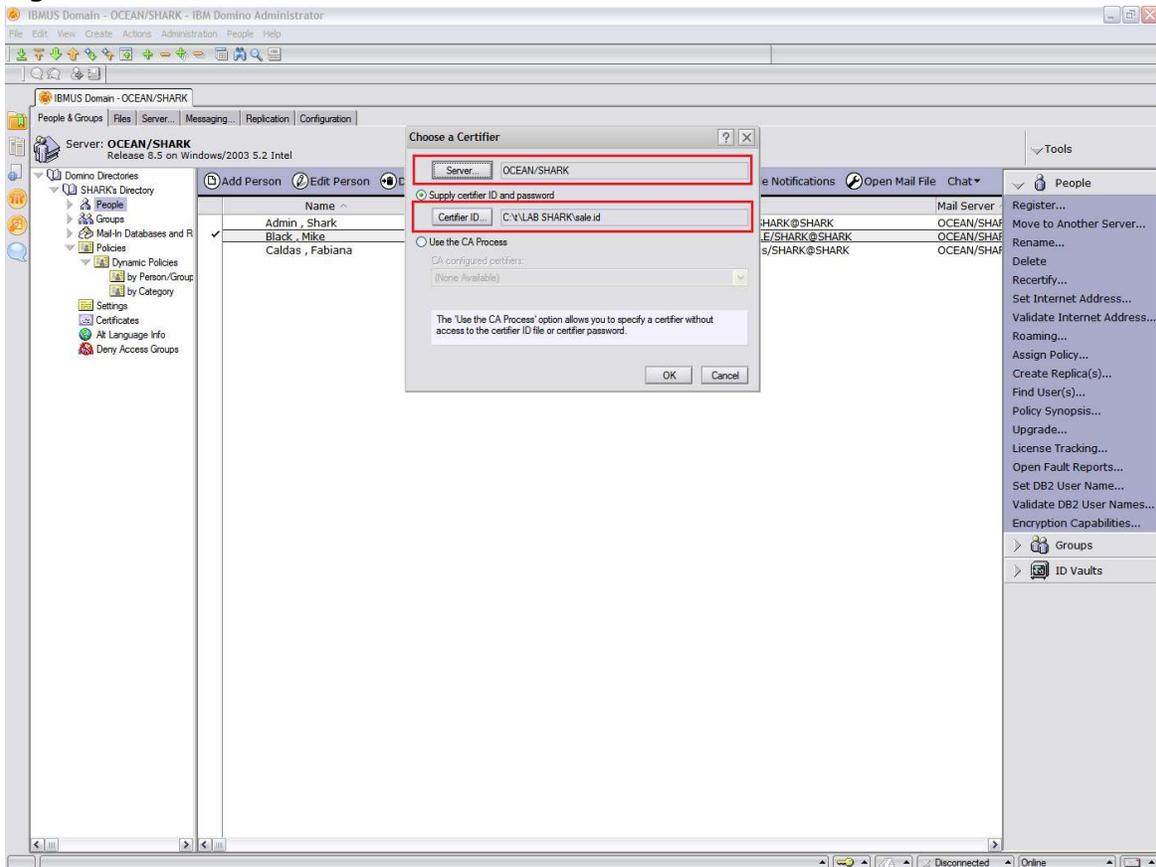
4. In the Request Move for Selected People window, select the new OU for the user, for example, MARKETING/SHARK (see figure 46); click OK.

Figure 46. Request Move for Selected People window
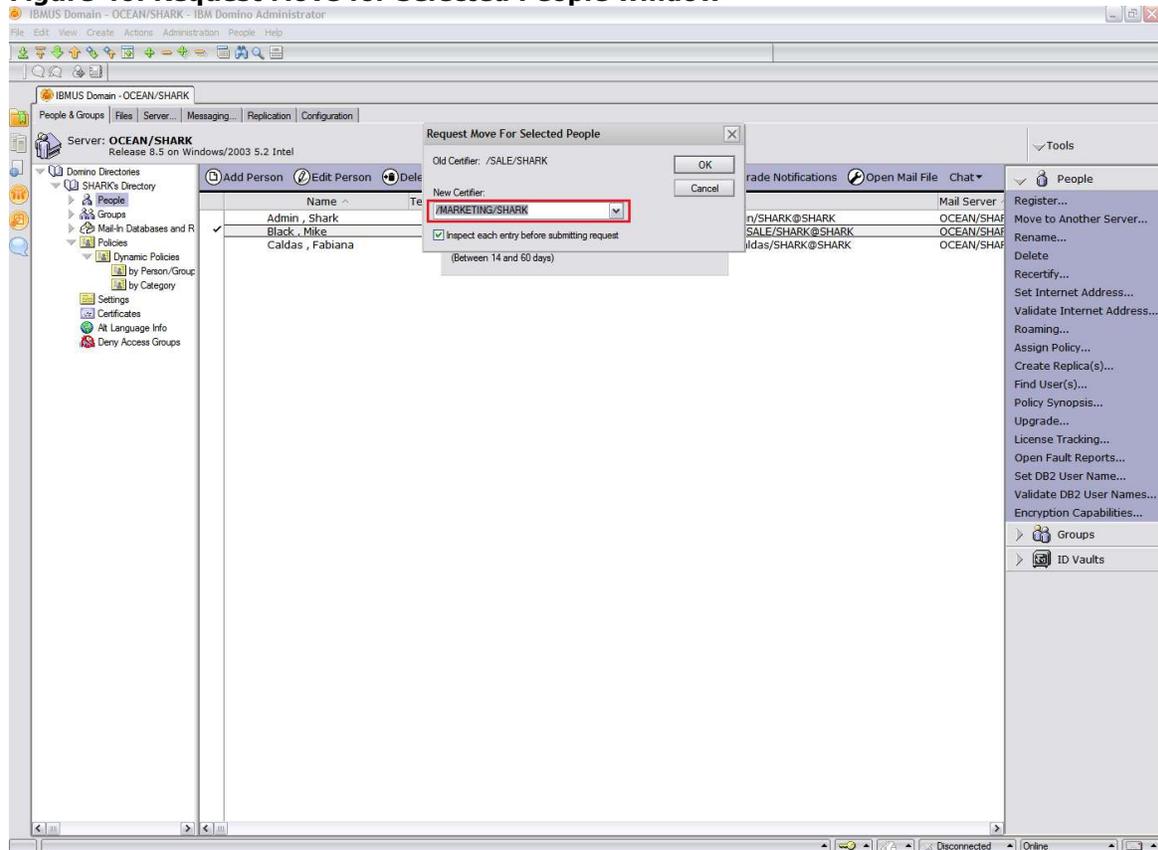
5. In the Rename Person window, make sure you renamed the correct user, and then click OK (see figure 47).

Figure 47. Rename Person window
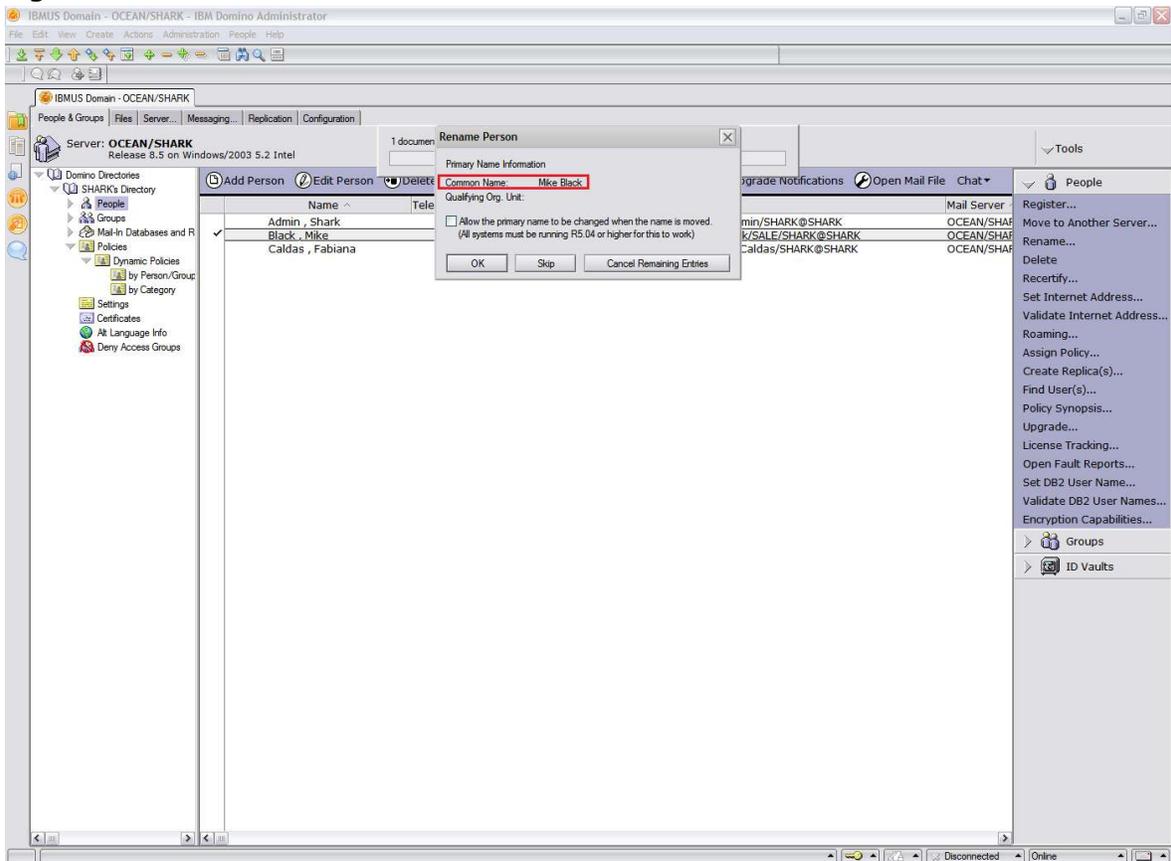
6. If the process was successful, you should see the Processing Statistics window (see figure 48); however, we're not done yet.

Figure 48. Processing Statistics window
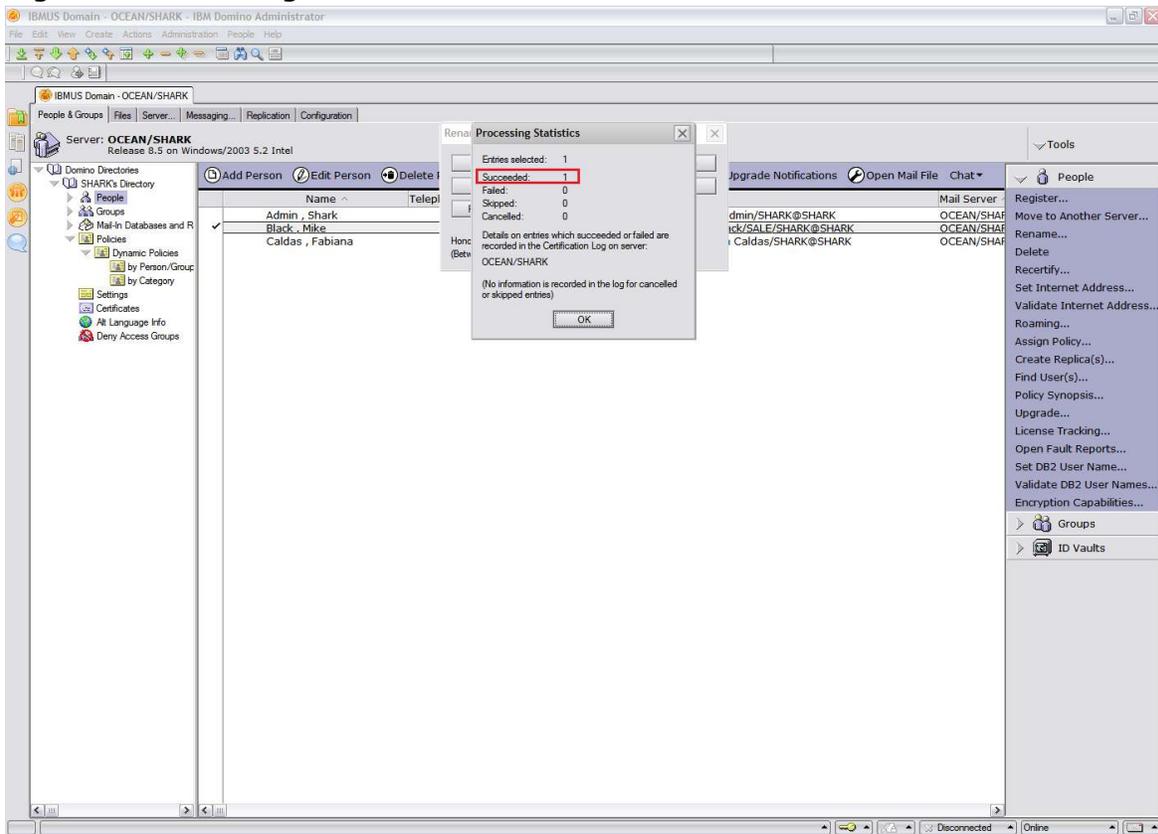
7. Now you must go into the Administration database to complete the rename process. In the Domino Administrator, select the Files tab, and double-click Admin4.nsf in the list of databases (see figure 49).

Figure 49. Database list
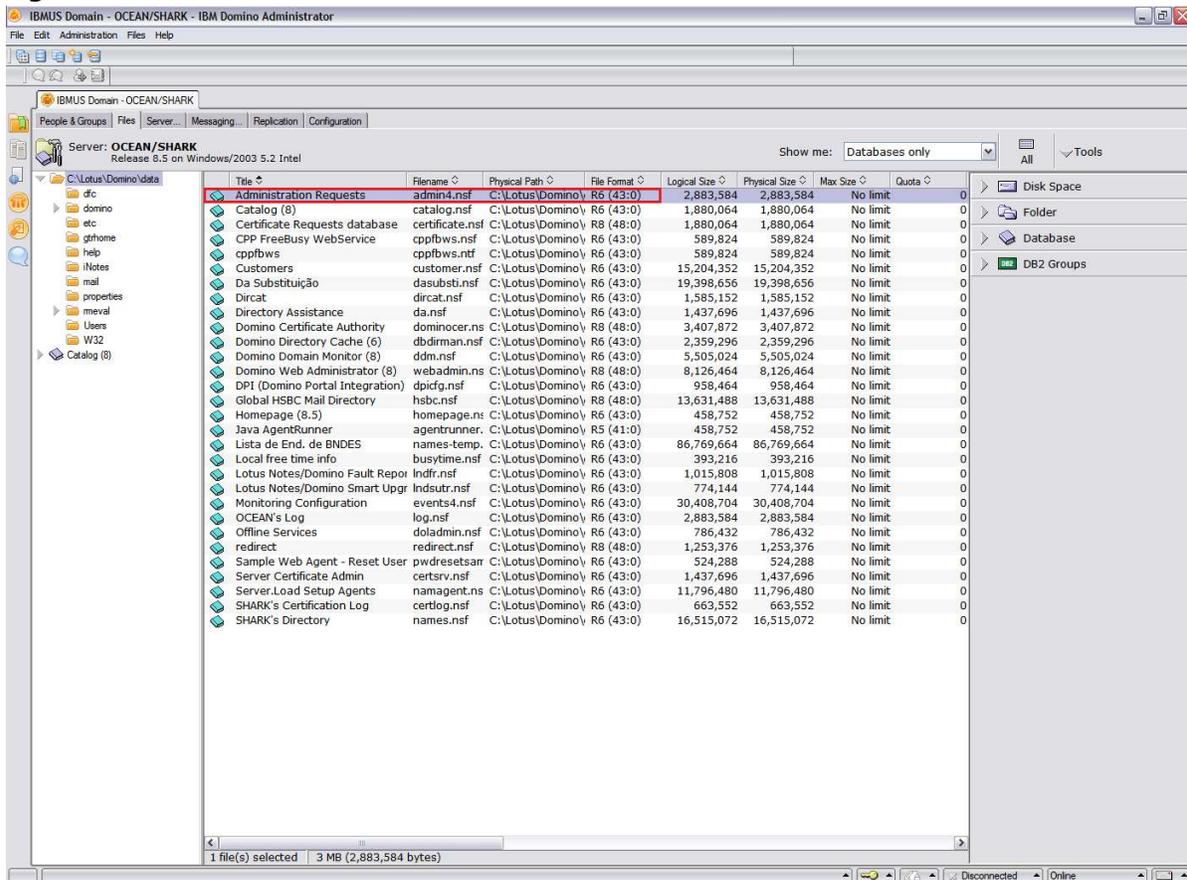
8. In the Administrative Requests database, select the Name Move Requests view, select the user you want to rename (in this example, Mike Black/SALE/SHARK), and then click the "Complete Move for selected entries" button at the top (see figure 50).

Figure 50. Name Move Requests view
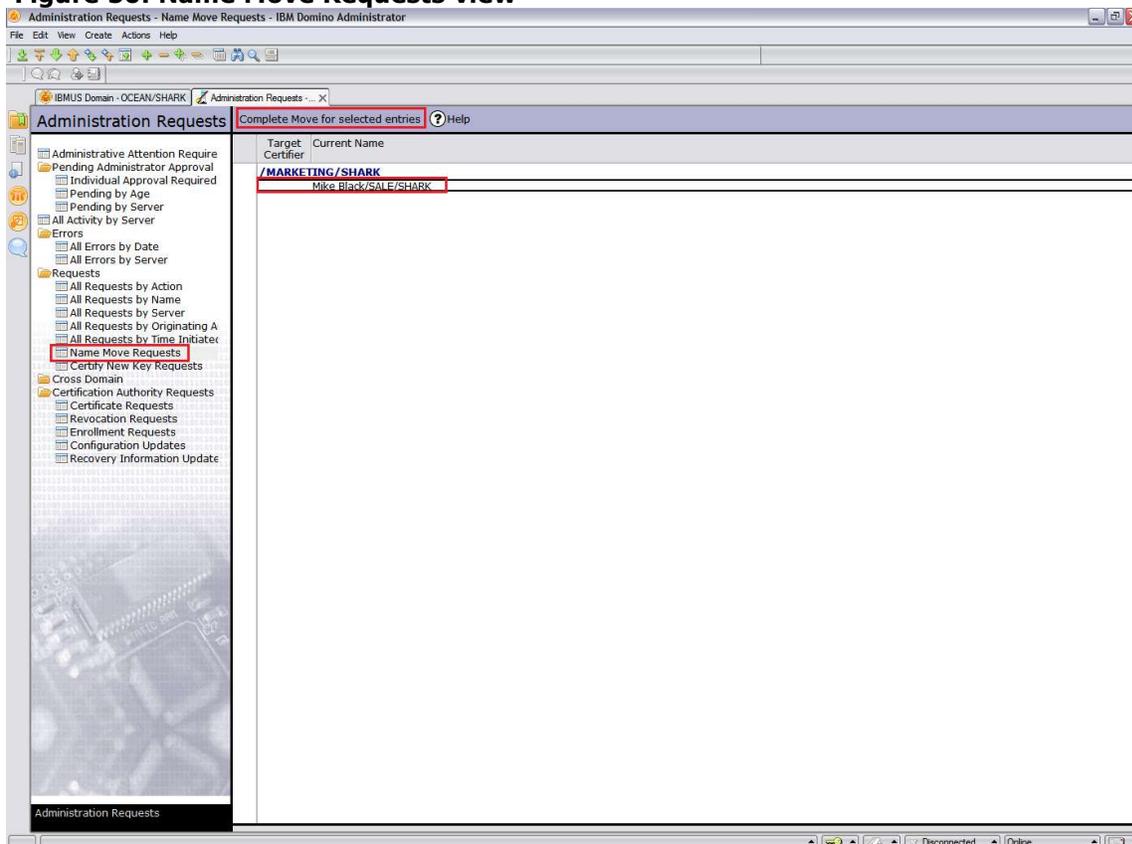
9. In the Choose a Certifier window, select the user's server and the OU's ID to which the user is going (in this example, MARKETING/SHARK), and then click OK (see figure 51). Type in the password for the MARKETING/SHARK OU ID.

Figure 51. Choose a Certifier window
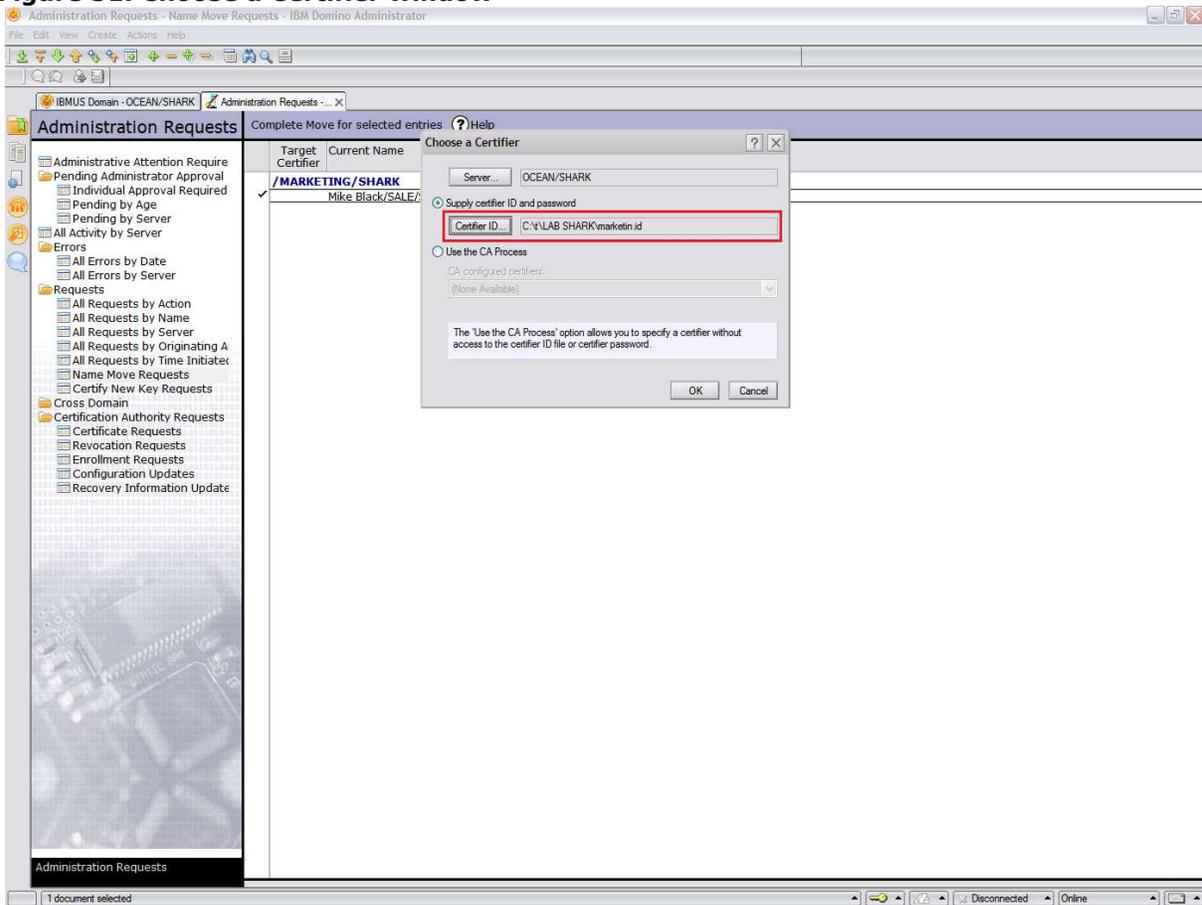
10. In the Certificate Expiration Date window, set the date of expiration for the user ID (we recommend 2 years, the default), and then click OK (see figure 52).

Figure 52. Certificate Expiration Date window
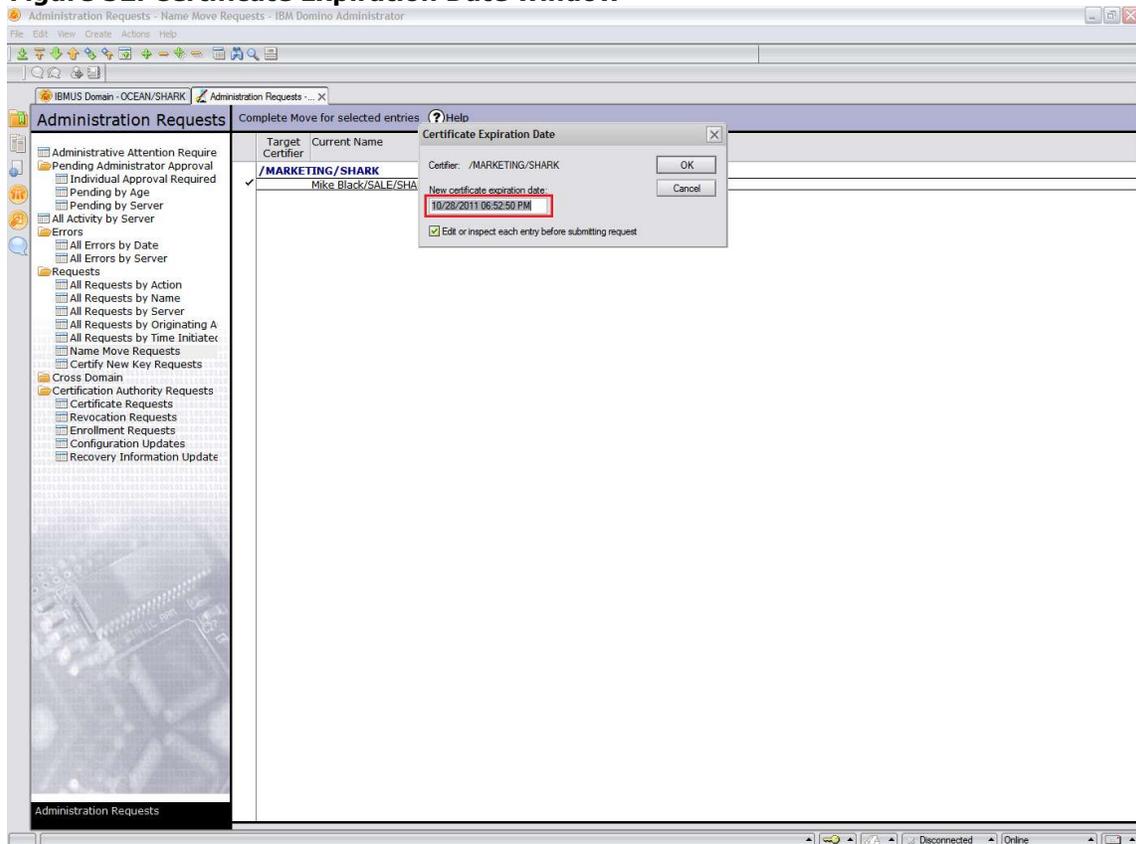
11. In the Rename Person window, confirm that you renamed the correct user; click OK (see figure 53).

Figure 53. Rename Person window
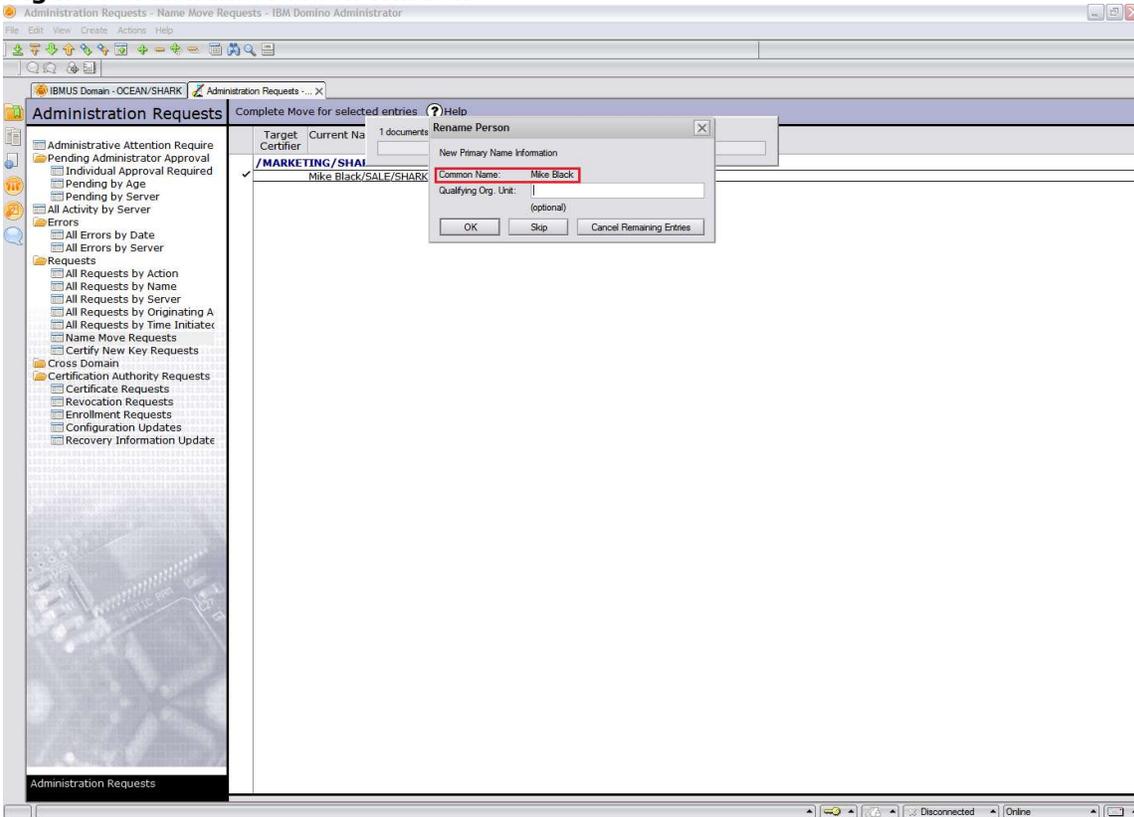
11. If the process was successful, the Processing Statistics window should display, indicating "Succeeded". However, the process to rename the user is still not done.

By default, AdminP processes requests marked as daily, at 12:00 AM (midnight). If you need to run this process before 12:00 AM, you should run the command "tell adminp process new" on the Domino console.

To run the command via the Domino Administrator, use these steps (recall figure 42):

1. Open the Domino Administrator, select the Server tab, and select Server Console from the left-hand pane.

2. Click the Live button, and type the command "tell adminp process new" in the Domino Command field at the bottom.

3. Click the Send button.

NOTE: Changes to User.ID files are not immediate; AdminP must first process the requests, and the user must connect to his/her home server.

5.4 Deleting a user

You can use this option to remove the user from the server. In this example we delete the user Debby White. (For more information, refer to the Domino Administrator Help and search for the topic "Deleting a user".)

1. Open the Domino Administrator, select the People & Groups tab, and select the user you want to delete (see figure 54).

2. Under the People pane on the right, select Delete.

Figure 54. Deleting user Debby White
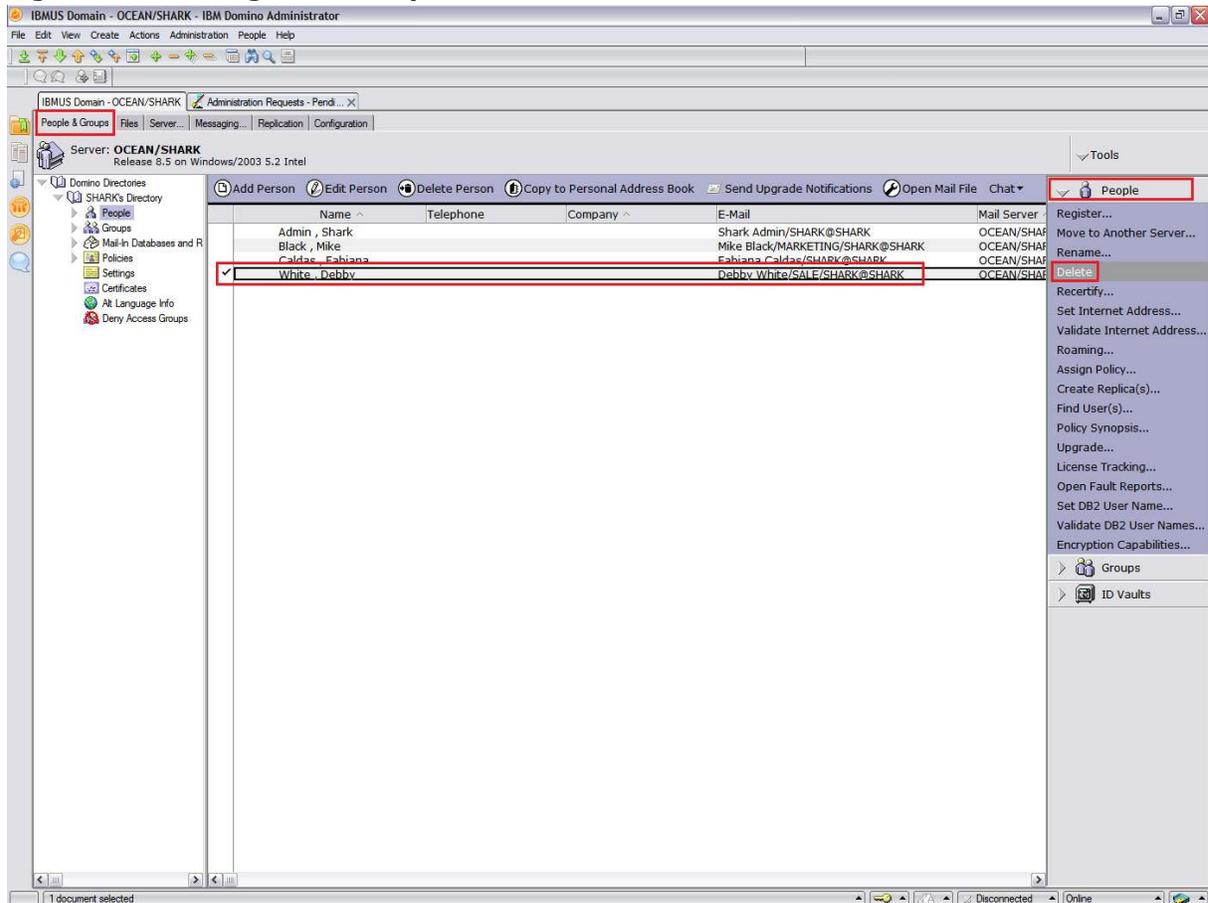
3. In the Delete Persons window, select these options (see figure 55):

   - Delete the mail database on the user's home server
   - Delete mail replicas on all other servers
   - Delete user from the Domino Directory immediately

4. Click OK. At this point, the user cannot access the server anymore; however, the process to delete the user is not done yet.

Figure 55. Delete Person window
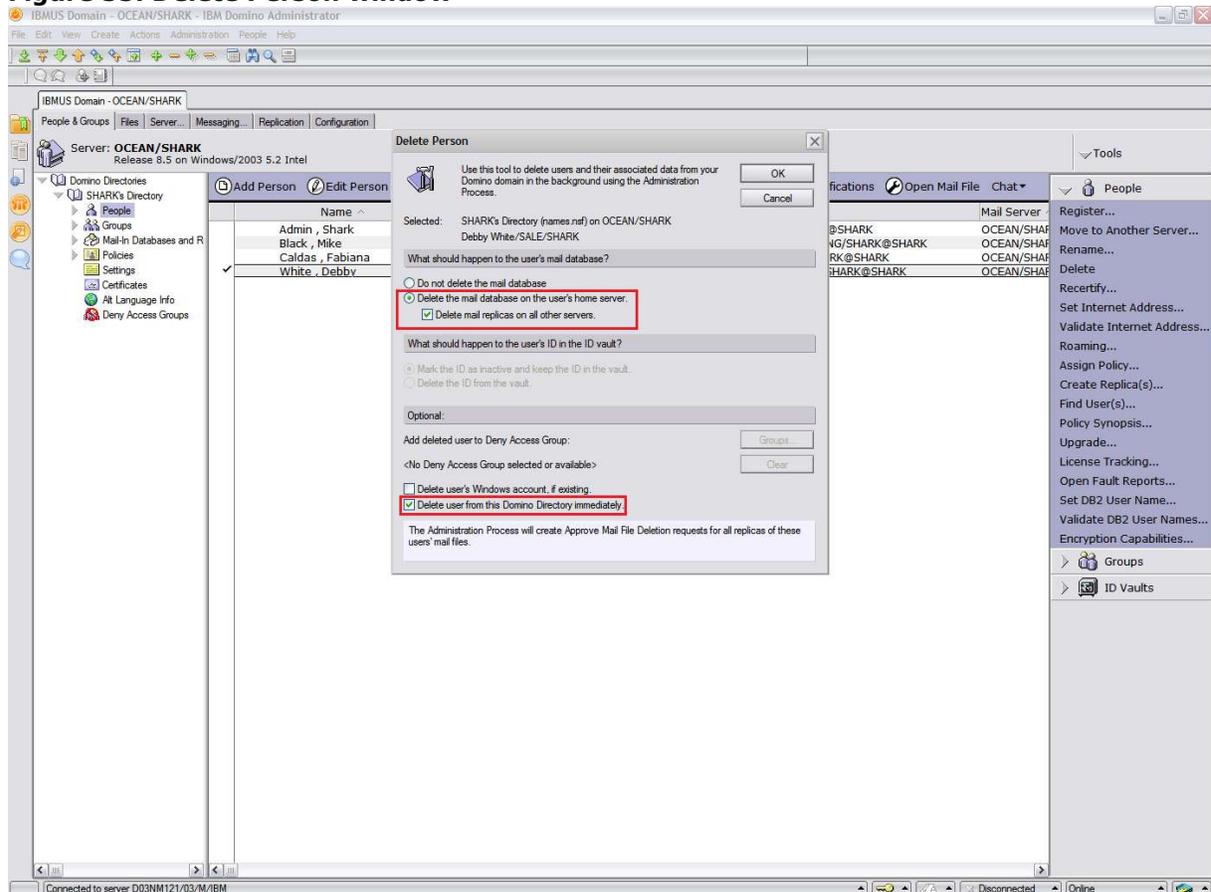
5. From the Domino console, run the command "tell adminp process new", just as we did when renaming a user in Section 5.3.

6. Now you must go into the Administration database to complete the delete process. In the Domino Administrator, select the Files tab, and double-click Admin4.nsf in the list of databases (recall figure 49).

7. Select the Pending by Server view, and open the sub-view of the user's home server. Select the user you want to approve to delete the mail database, and then click the Approve selected Requests button (see figure 56).

Figure 56. Pending by Server view

8. Verify you've selected the correct user's mail database to delete. We recommend waiting for AdminP to delete the user's mail database when it runs at 12:00 AM (by default). (Remember that the user cannot access the server anymore after Step 4 above is done.)

5.5 Setting quotas

You can control the size of users' mail databases by setting quotas. (For more information, refer to the Domino Administrator Help and search for the topic "Database size quotas".) To do this:

1. Open the Domino Administrator, select the Files tab, and select the Mail view from the left-hand pane (see figure 57). Highlight the user's mail database for which you want set the quota.

Figure 57. Mail databases view
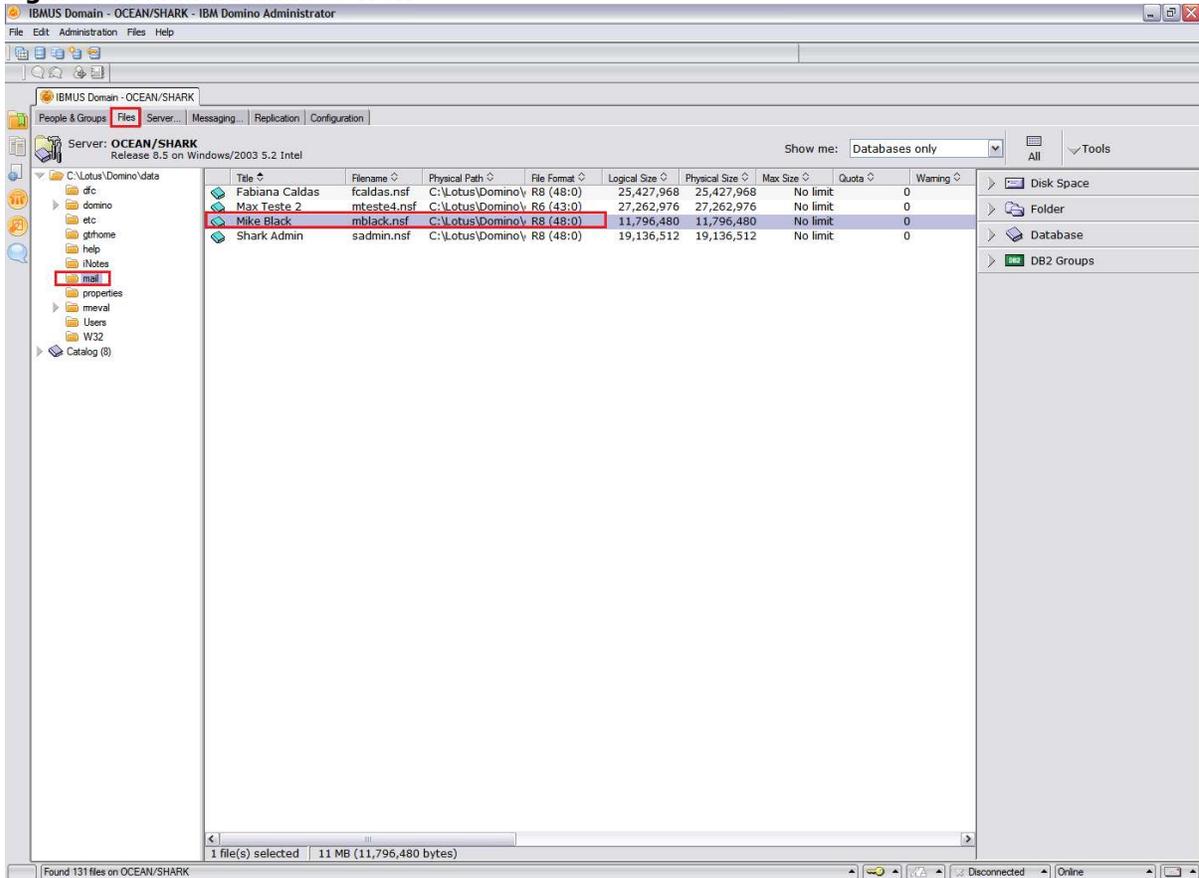
2. Right-click on the user's database (here, Mike Black's) and select the Quotas option from the drop-down list (see figure 58).

Figure 58. Quotas option
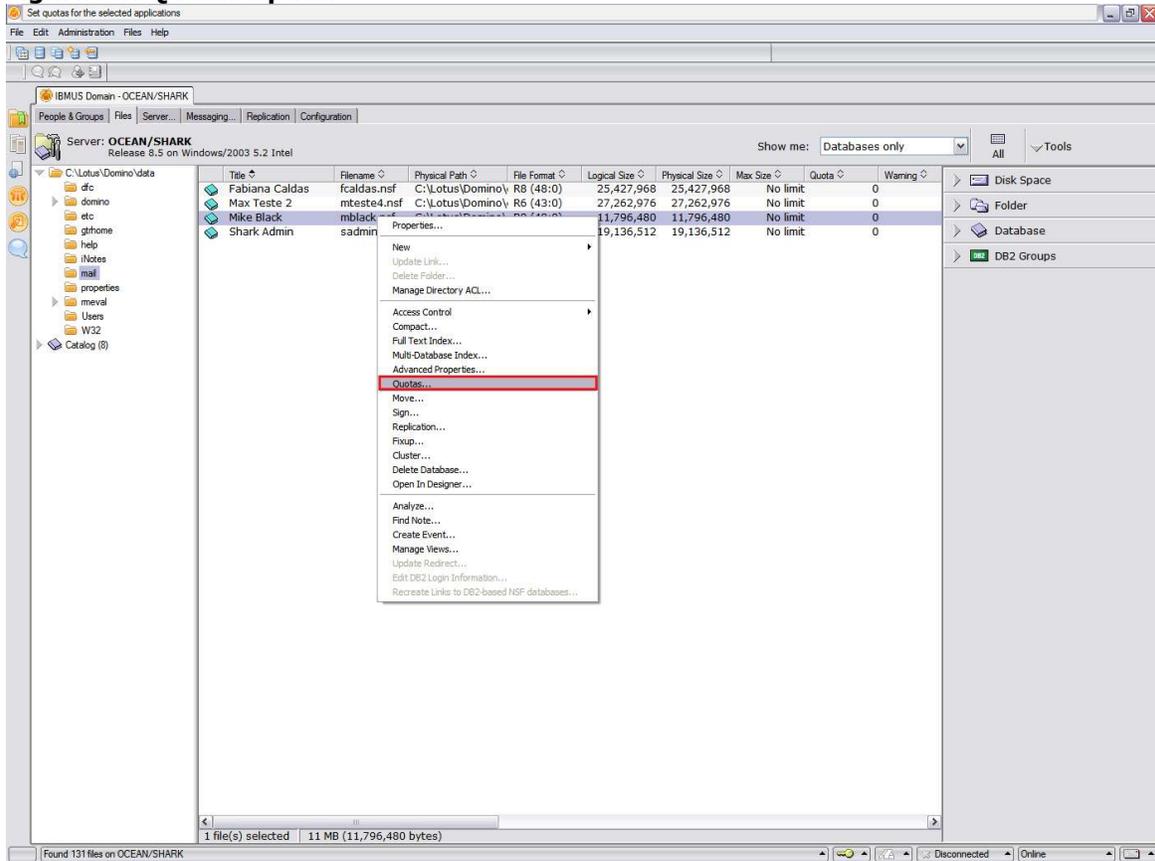
3. In the Set Quotas window, select the user's mail database, and select the options "Set database quota to" and "Set warning threshold to" (see figure 59). In this example, we set the quota at 250 MB.

4. It's recommended to set an alert to the user, to let him know when the database is about to reach the limit of the quota. To do that, you need set a value for the "Set warning threshold to" option. We recommend setting the value at about 90% or less of the quota limit.

5. To complete the process, click OK.

Figure 59. Set Quotas window
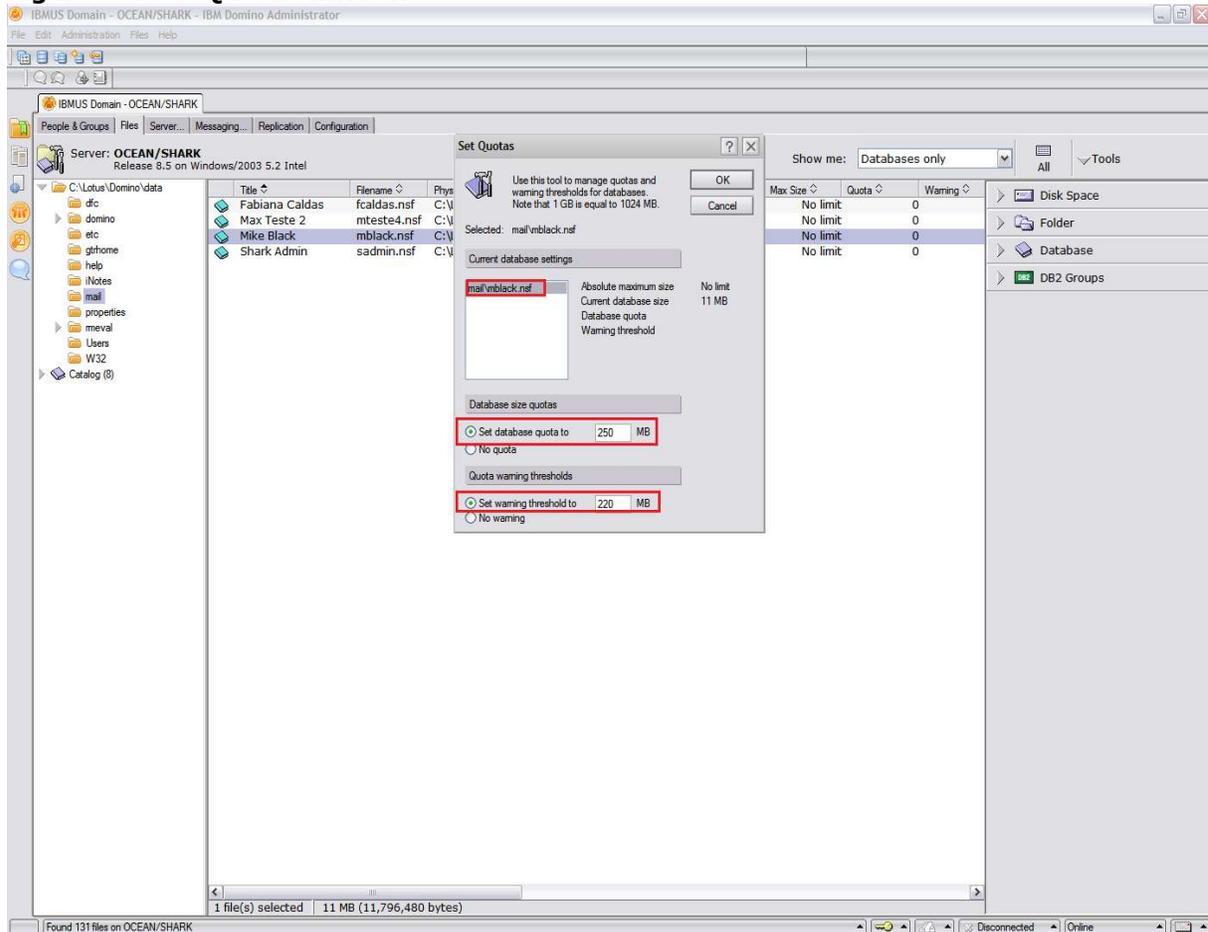
5.6 Creating a new mail file

If a user's database gets damaged (corrupted) and maintenance steps (see Section 6) cannot recover it, then you can create a new mail file. To do this:

1. Open the Domino Administrator and select File > Application > New from the top menu (see figure 60). Note that you can perform this task using the Notes client, but you must log in as a user who has Administrator rights.

Figure 60. Create a new Notes application
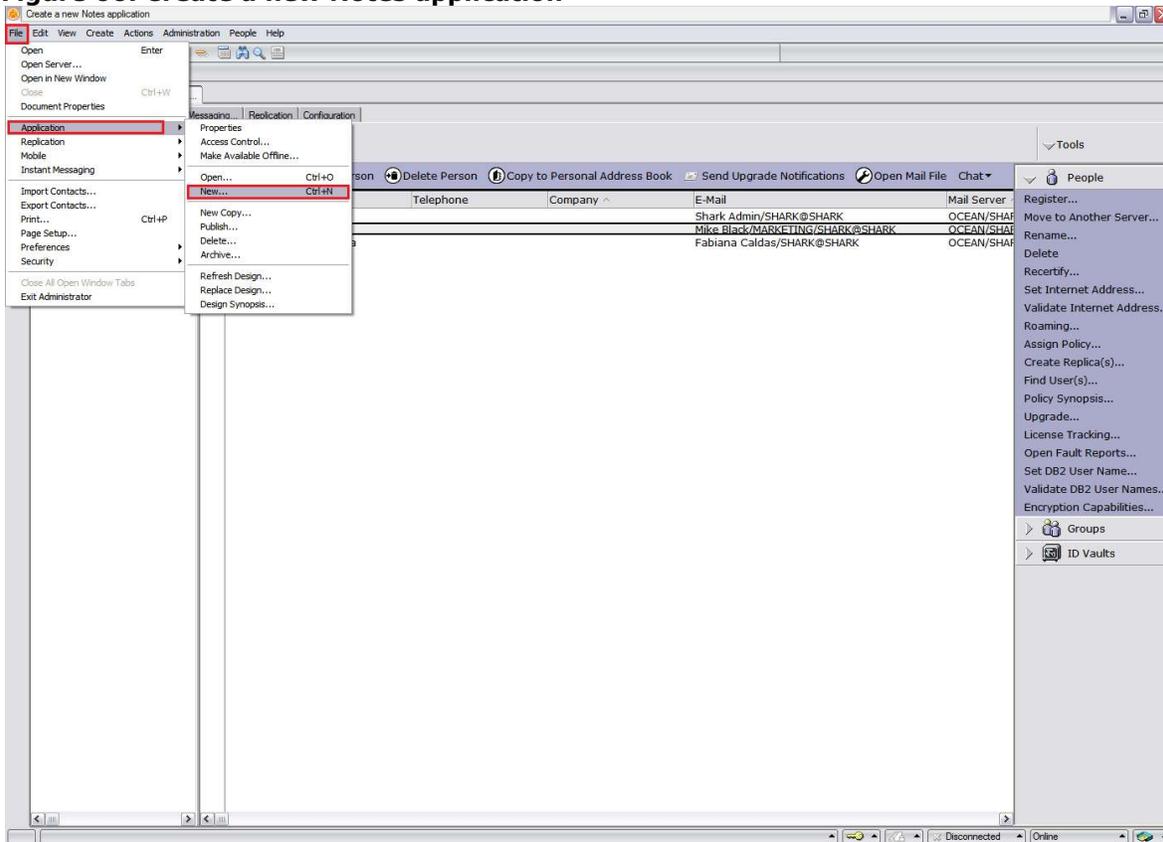
2. In the top portion of the New Application window, set the following fields (see figure 61):

   - Server: The home server of the user for whom you want to create the new mail database.
   - Title: The description of the database.
   - File name: The name of the mail database. Make sure you type "mail\" before the name of mail database, the default folder for mail databases.

3. In the lower portion of this window, set the Server field as the home server of the user, and then select Mail(R8.5) for the Template. Click OK, to complete this step.

Figure 61. New Application window
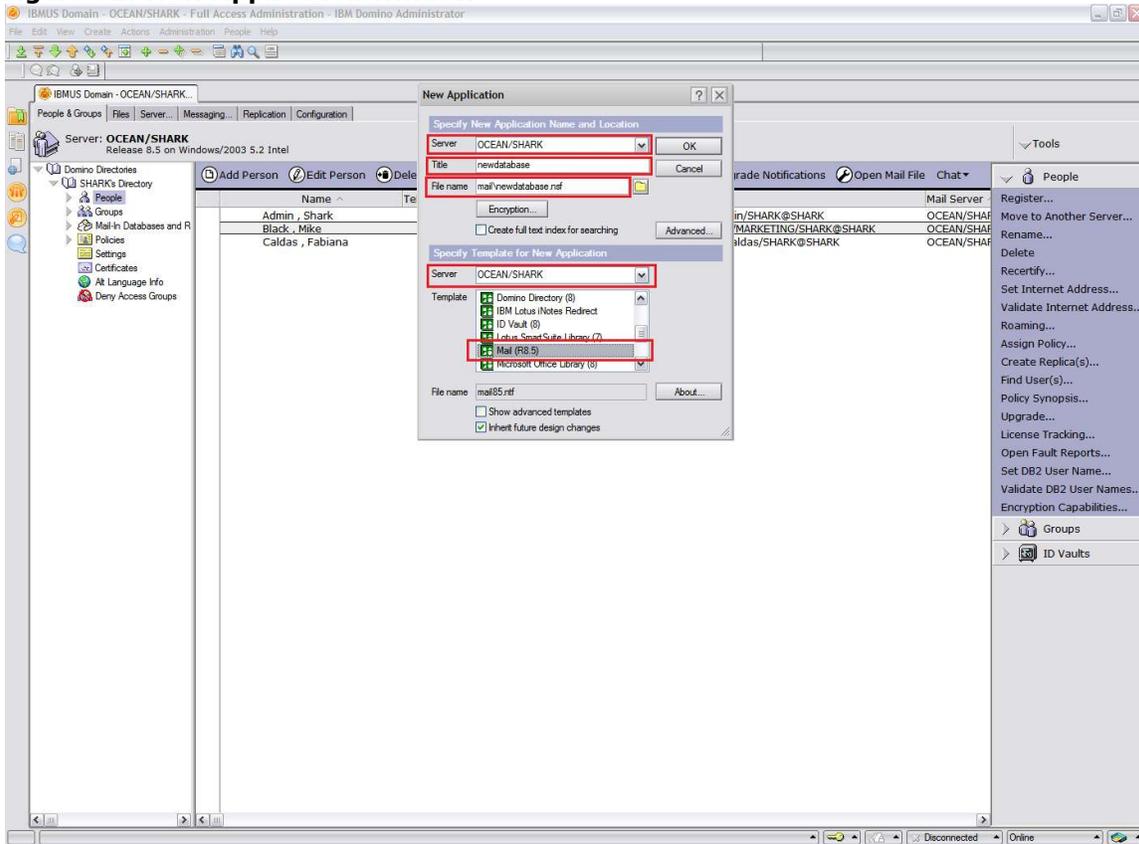
4. From the Files tab, open the new mail database by double-clicking on it from the Mail databases view (see figure 62).

Figure 62. Open the new database
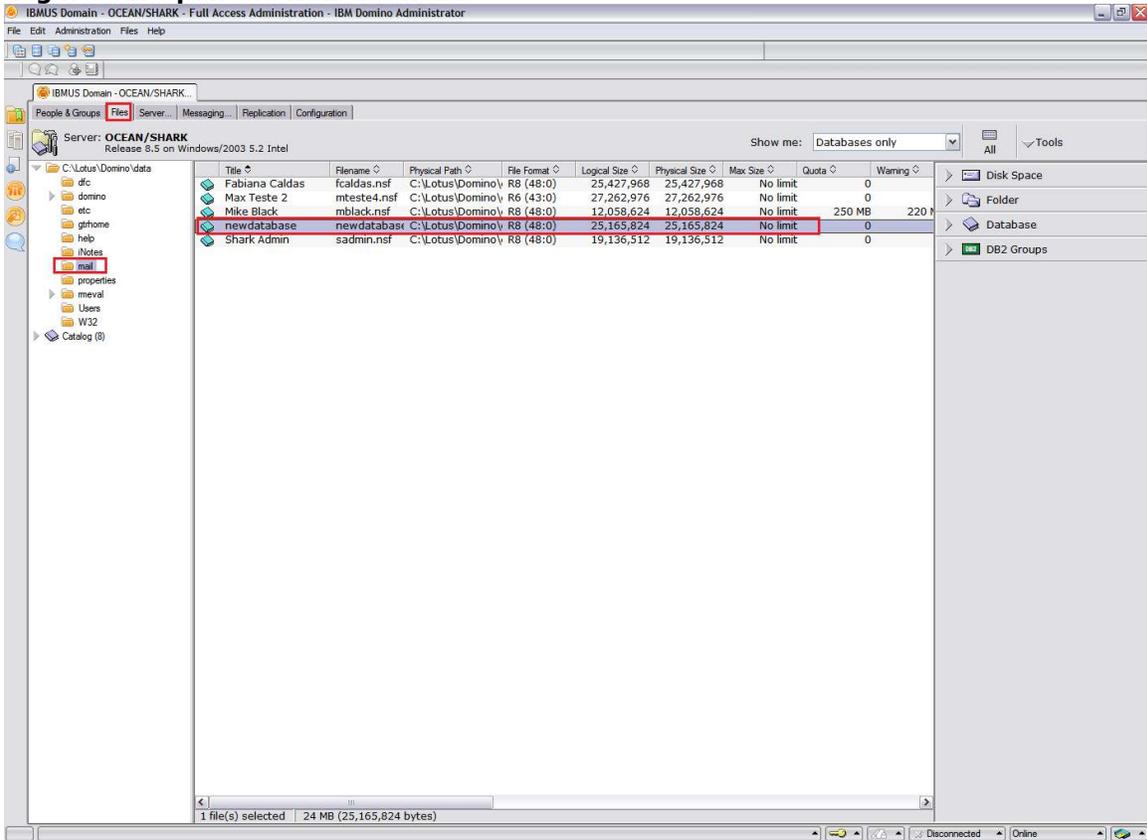
5. When you open the new mail database, the Owner Value Not Set window will display, with the warning "Please set owner value in Mail File preferences." Just click OK.

6. Press the ESC key and then, in the mail database, click the More button at the top; select the Preferences option (see figure 63).

Figure 63. Select Preferences
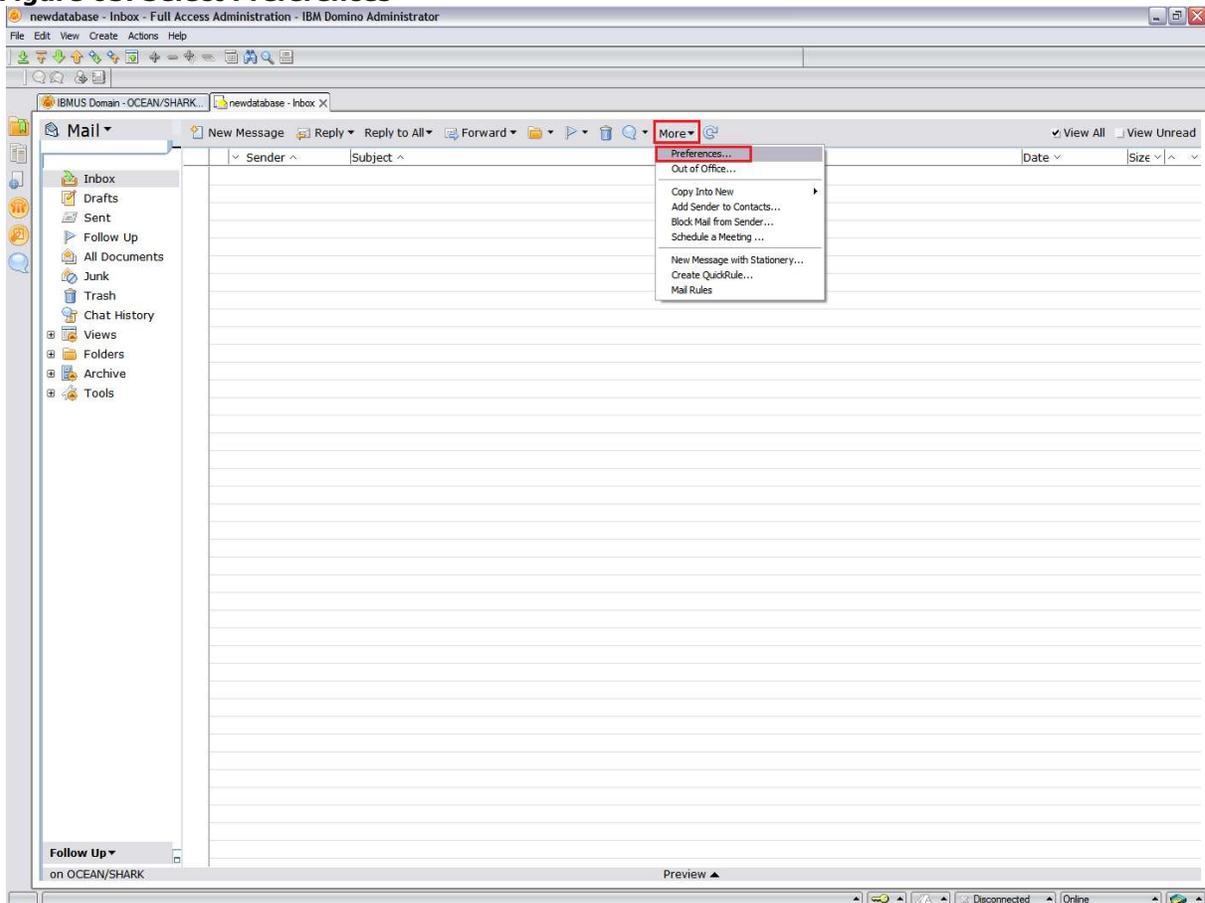
7. In the Preferences window, select the Mail tab, then Basics, and then click the Change button (see figure 64).

Figure 64. Preferences window
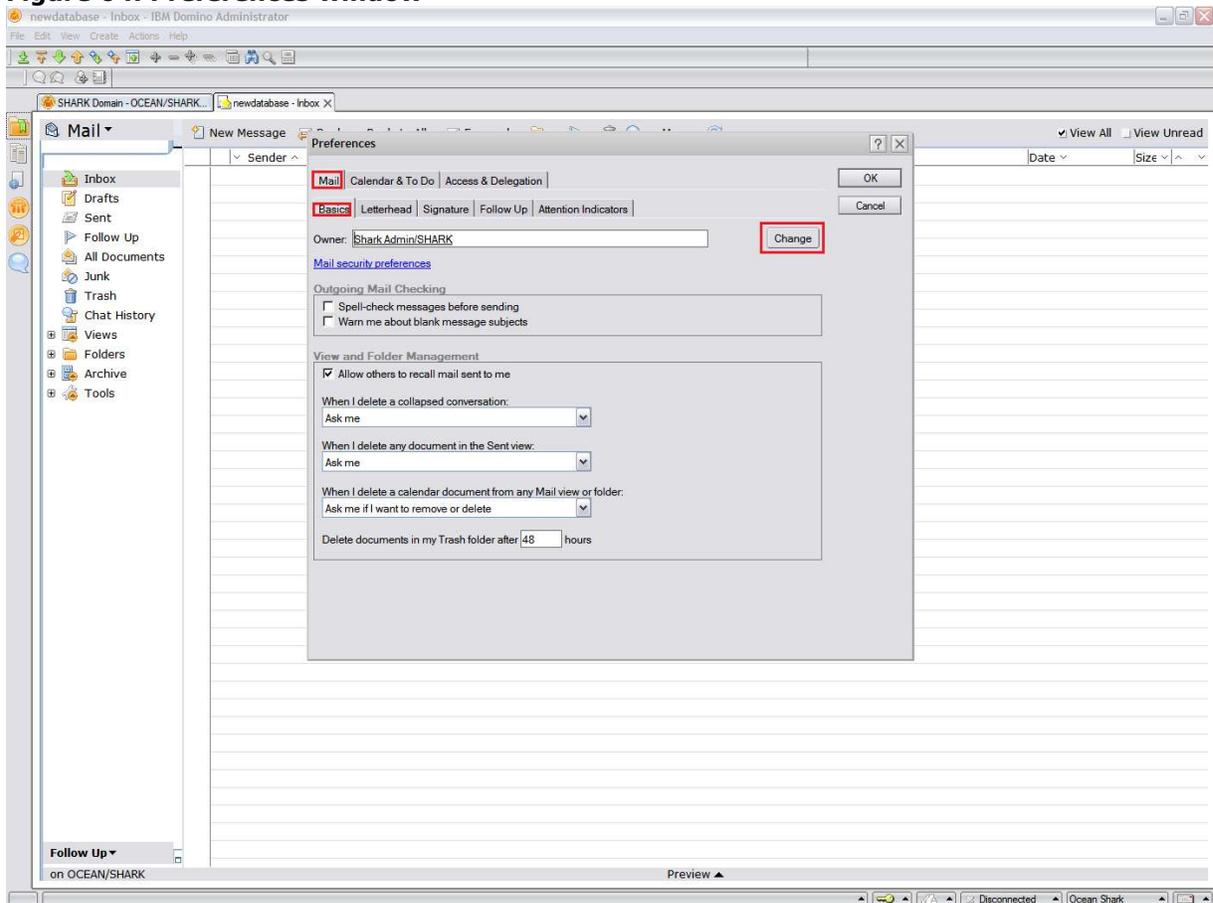
8. The Owner Name Change window will display with a warning message; just click the Yes button.

9. In the Directory field of the Select Name window, select the Domino Directory (Names.nsf) the user will use for this new mail database, select the user (here, Mike Black), and click OK (see figure 65).

10. When you're returned to the previous screen, just confirm that you selected the correct user, and then click OK.

Figure 65. Select Name window
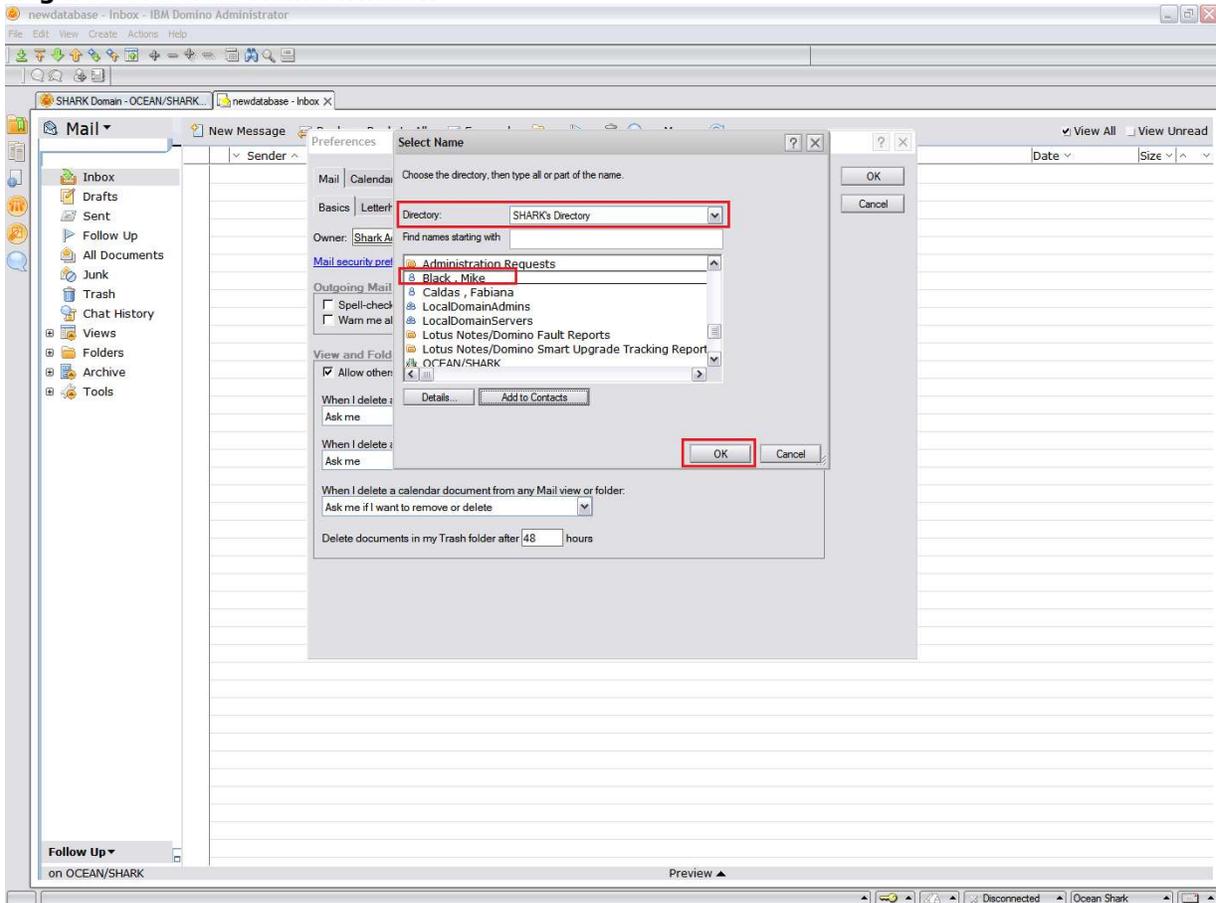
11. Now select File > Application > Access Control, from Domino Administrator's top menu (recall figure 60).

12. In the Access Control List (ACL) window, click the Add button (see figure 66).

Figure 66. Access Control List for new database
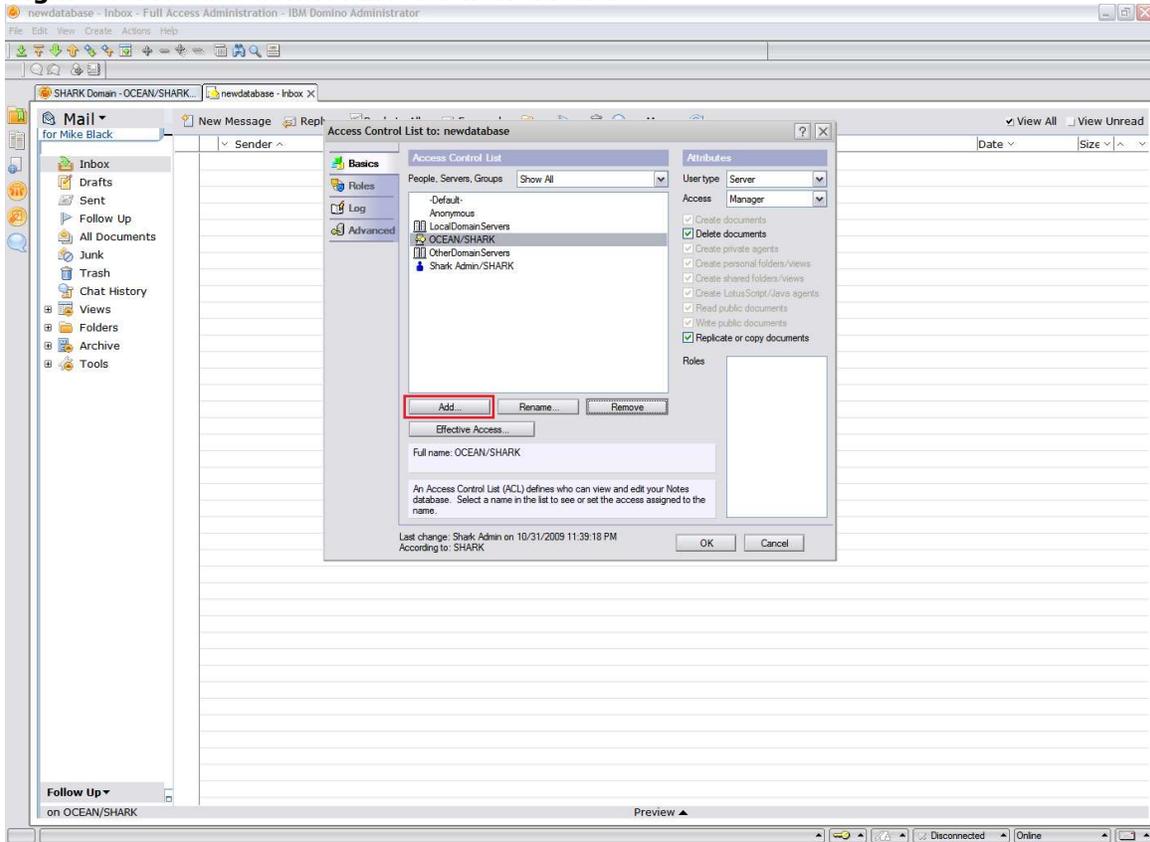
13. In the Directory field of the Select Names window, select the Domino Directory (Names.nsf) the user will use for his new mail database, select the user, and then click the Add button (see figure 67). Click OK, to complete this step.

Figure 67. Select Names window
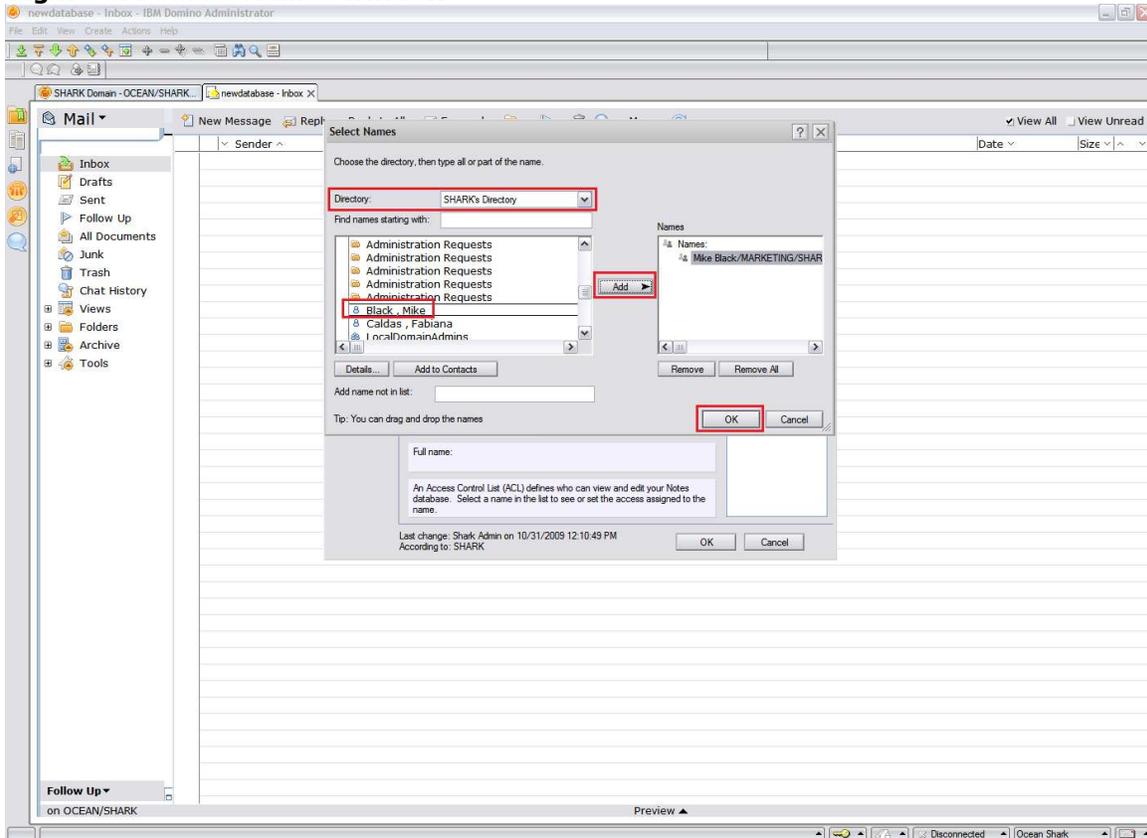
14. Set the ACL level; in this example (see figure 68), the user has the default level of access (Editor), though sometimes users may need a higher level, for example, Manager. Click OK.

Figure 68. Set the ACL level
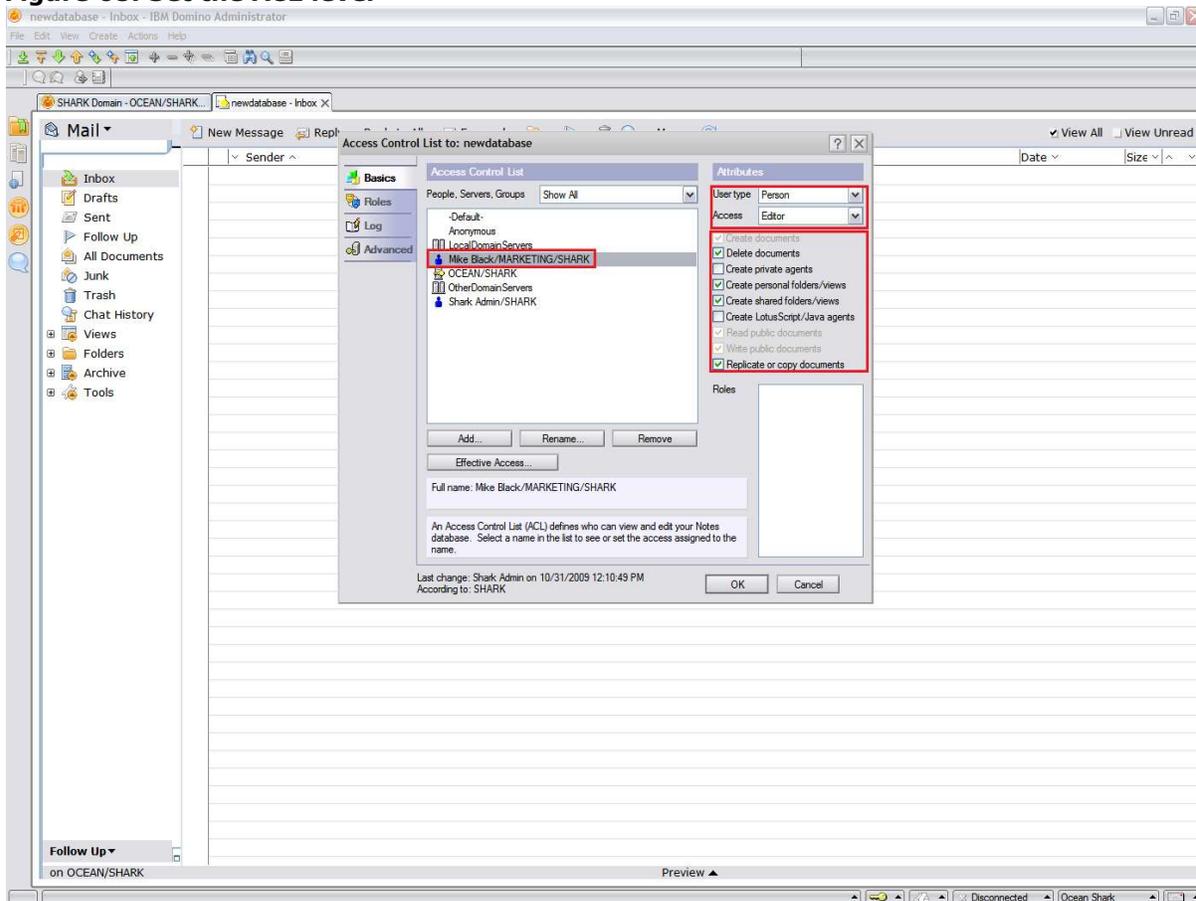
15. Open (double-click) the user's Person document from the People view (see figure 69).

Figure 69. Open Person document
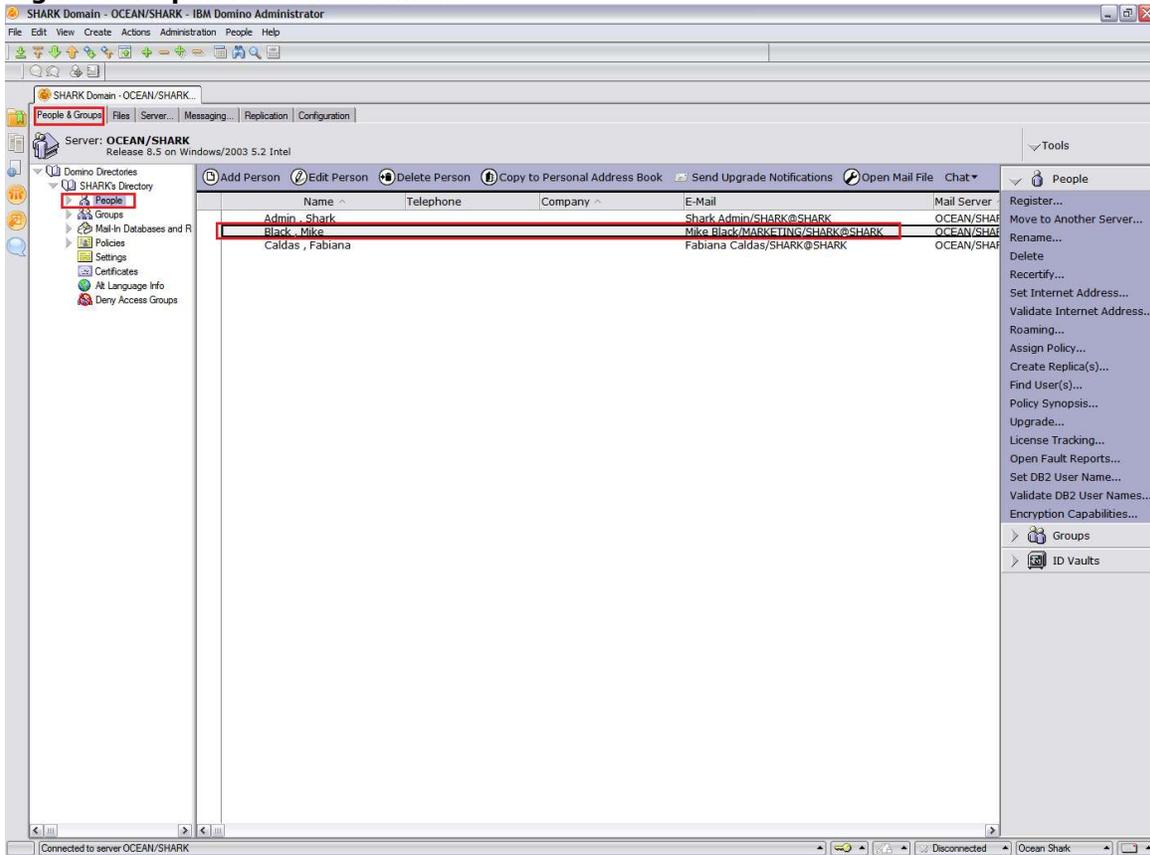
16. Click the Edit Person button and change the Mail File field to the name of the new mail database, in this example, mail\newdatabase (see figure 70). Click the Save & Close button.

NOTE: You also need to update the information in the user's Location document in the Notes client, which is in the Mail file field, under the Mail tab. Set this field with the path and name of the new mail database for the user (in this case, mail\newdatabase).

Figure 70. Edit Person document
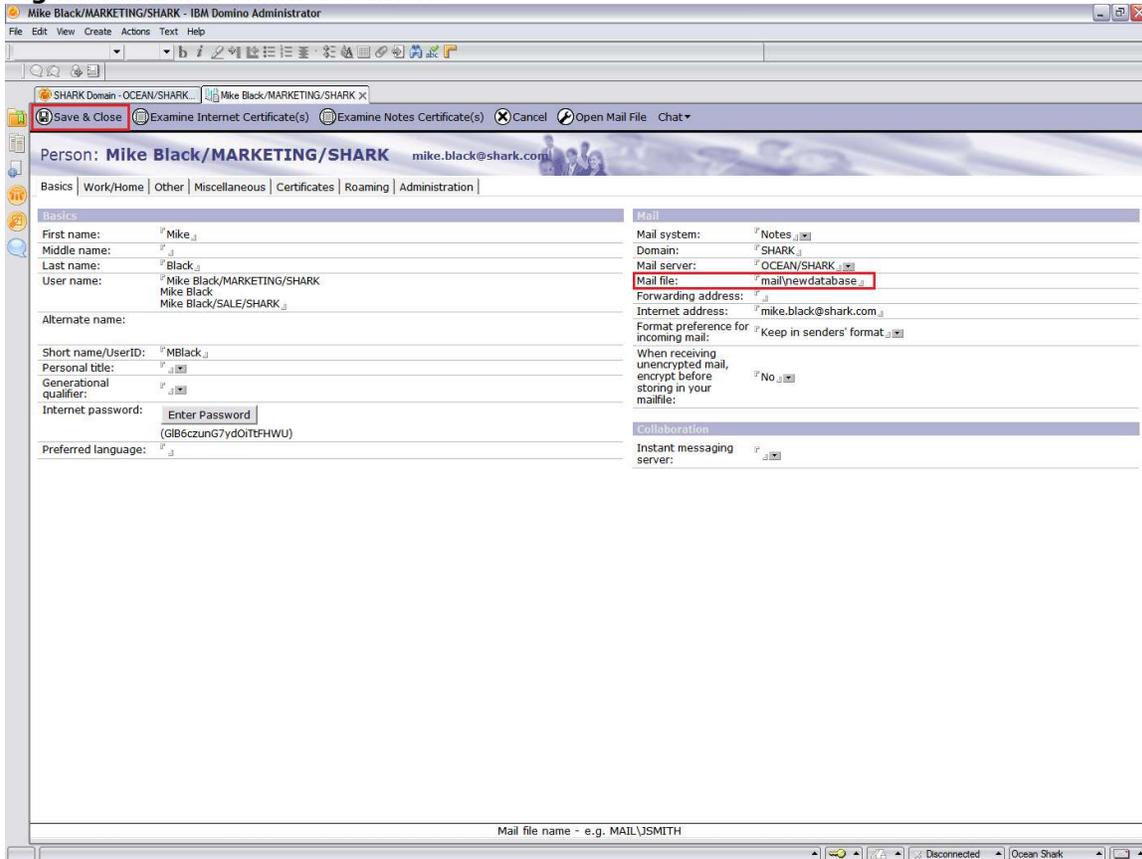
6 Maintenance

You should schedule regular restarts of the Domino server, to ensure best performance and server availability. Proper backup and restoration tests should also be scheduled, to ensure that data has not only been recorded but can also be recovered correctly.

There may be situations in which the only alternative left to recover from a certain event is to restore a backup, so if one does not exist or is not properly done, it could lead to catastrophic loss of information or financial loss.

It is also often necessary to perform general or specific maintenance on some databases on the server so as to fix database corruption, reduce database size, fix performance issues, etc.

Here we cover the most common database maintenance procedures generally performed by a Domino Administrator and also requested by Lotus Technical Support.

NOTE: There are some considerations needed before using the following procedures if some Domino features have been enabled like Transactional Logging and/or DAOS.

6.1 Fixup

Fixup is usually run as an attempt to fix corrupted views and documents in a database. It should be used when a database is suspected to have a problem, but it is not recommended to have it run periodically on a database as a preventive measure.

It is also not recommended to use the fixup method on databases on which transactional logging is enabled. (For more information, refer to the "-j" switch in the product Help.)

Usage:

Load fixup databasepath options

Example (see figure 71):

Load fixup mail\acolorad.nsf -F

Figure 71. load fixup mail\acolorad.nsf -F
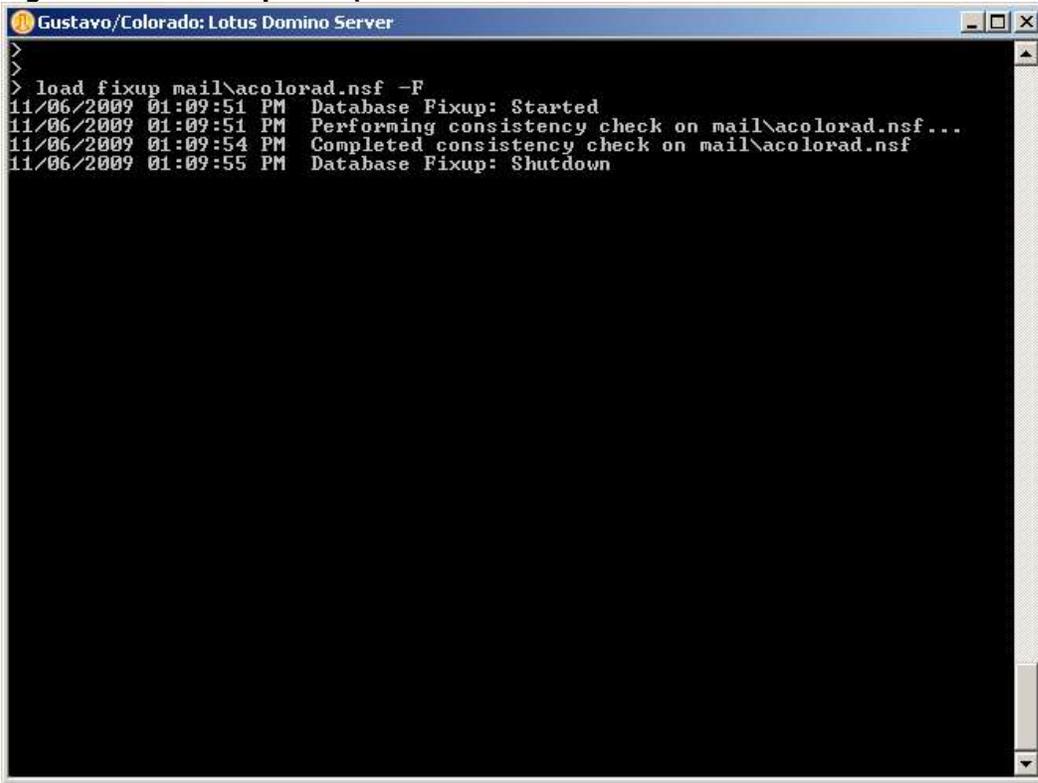
For a complete list of the available switches for the fixup method, use the "-?" switch (load fixup -?).

6.2 Compact

Compact is usually run to reorganize the contents of the database, to reduce database size, and to attempt to solve database corruption issues for which the use of fixup did not help.

Usage:

    Load compact databasepath options

Example (see figure 72):

    Load compact mail\acolorad.nsf –c

Figure 72. load compact mail\acolorad.nsf
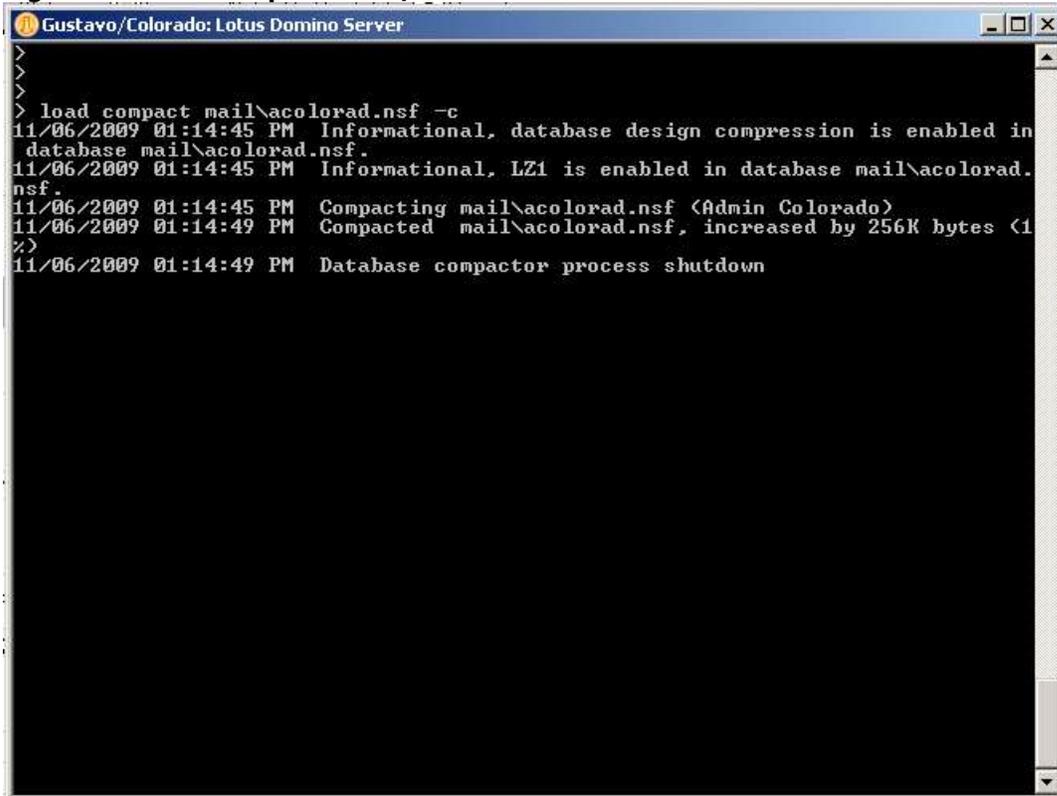
For a complete list of the available switches for the compact method, use the "-?" switch (load compact -?).

6.3 Updall

Updall is used to update or rebuild database views and indexes. Keeping database views and indexes current is important for performing text searches and can also impact performance.

Usage:

    Load updall databasepath options

Example (see figure 73):

    Load updall mail\acolorad.nsf –R –X

Figure 73. load updall mail\acolorad.nsf –R –X
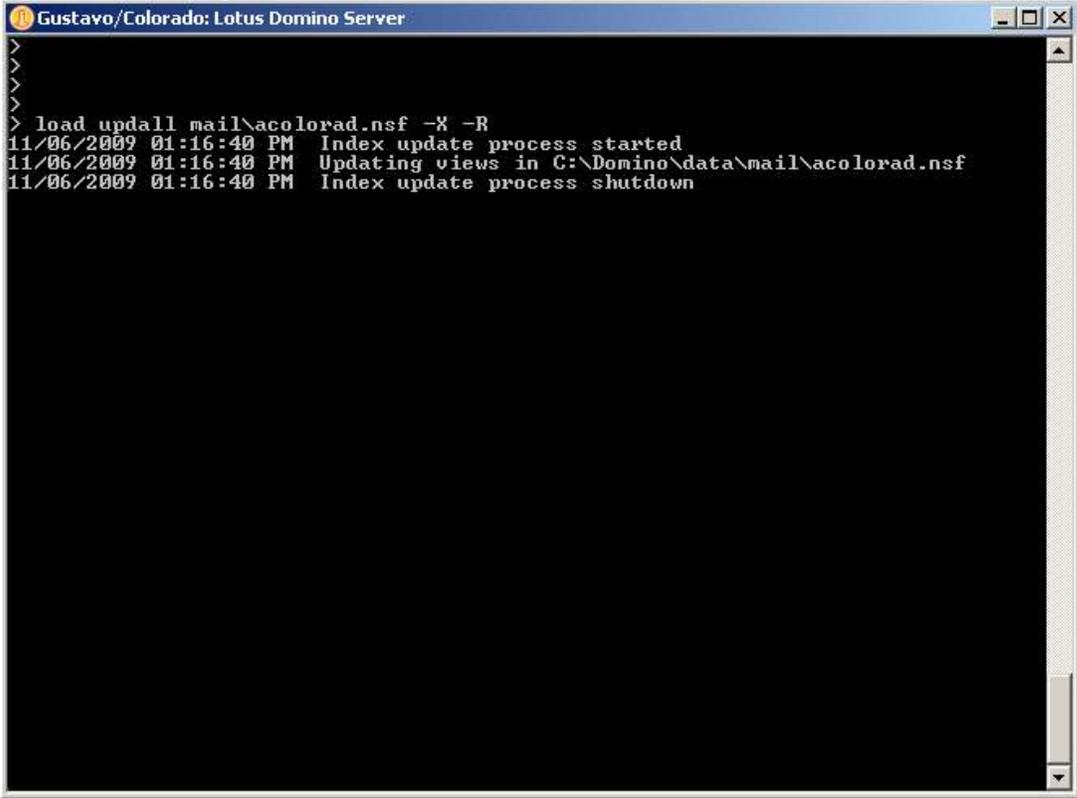
For a complete list of the available switches for the updall method, use the "-?" switch (load updall -?).

6.4 Offline maintenance

It is extremely important to perform maintenance (such as running compact, fixup, and updall) on critical server databases like Names.nsf, Log.nsf and Cldbdir.nsf, to mention a few. This must be done **while the server is down;** severe damage can occur to the server if such operations are performed while it's running.

On a Microsoft® Windows® 32-bit (Win32) platform, the alternative way to run the above maintenance tasks or critical databases is through a command prompt window, since the server should not be running. This scenario could also apply if the server wont' start for whatever reason and some maintenance is necessary on a database.

In the Domino directory, there should be executable files called nfixup.exe, ncompact.exe, and nupdall.exe. These can be executed through a command prompt window with the same effect as via the commands load fixup, load compact, and load updall on the server console (see figure 74).

Figure 74. nfixup from Command Prompt window
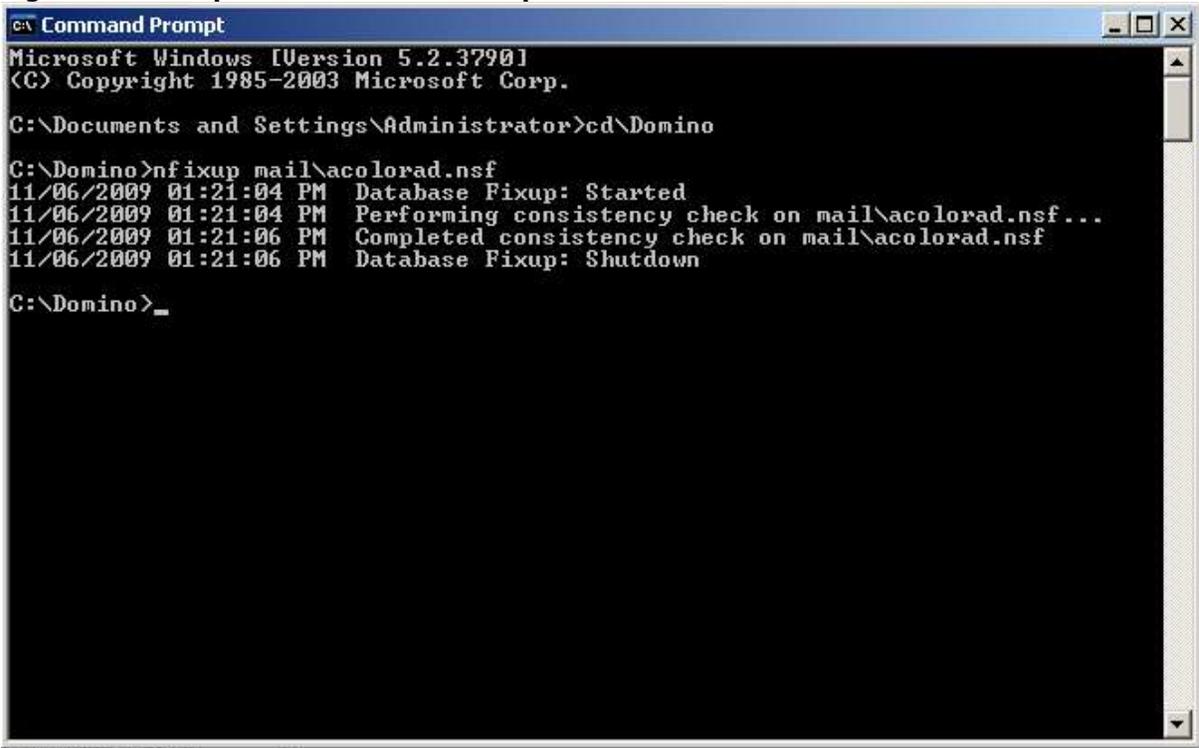
```
Command Prompt                                                    _ □ ×
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

C:\Documents and Settings\Administrator>cd\Domino

C:\Domino>nfixup mail\acolorad.nsf
11/06/2009 01:21:04 PM  Database Fixup: Started
11/06/2009 01:21:04 PM  Performing consistency check on mail\acolorad.nsf...
11/06/2009 01:21:06 PM  Completed consistency check on mail\acolorad.nsf
11/06/2009 01:21:06 PM  Database Fixup: Shutdown

C:\Domino>_
```

6.5 About database corruption

Database corruption is generally characterized as when a part or the entire database has suffered data loss, integrity issues, inconsistent data, limited functionality, or is just plain unreadable.

Database corruption can be caused by factors such as power outages, hard disk failures, network issues, crashes, software failure, and user intervention. Due to the nature of corruption itself and the many factors that could cause it, it is not possible to determine what caused the corruption unless it is reproducible.

Many times it may be possible to recover a database from a corrupted state by use of some or all the maintenance tasks fixup, compact, and updall, which are usually performed in that order. Unfortunately, however, sometimes this is just not possible, so it may be necessary to restore a copy from a backup (thus the importance of backing up).

For more detailed information about server maintenance, refer to Techdoc #7006573, titled "Administrator Guide for Domino Server maintenance."

7 NSD

NSD is a program that comes with the Domino Server (nsd.exe for Win32 platforms or nsd.sh for UNIX® platforms) and is also available with Lotus Notes clients. When executed, it collects vital information about the computer's current status, such as the server/client version, date and time, NSD version, the processes running in the operating system, thread information, and memory allocation, and the generates a report containing all this information.

This information is extremely useful when troubleshooting server or client crashes and hangs, and is often requested by Lotus Technical Support. Therefore, it's important to keep the NSD up-to-date because continuous improvements are added by IBM that help in the troubleshooting process. For more information about updating the NSD version, refer to Technote #1233676 titled, "NSD Fix List and NSD Update Strategy."

It's important to understand and verify whether the server is configured to collect an NSD in the event of a crash. You can do this under the Basics tab of the Server Document for a specific server, as shown in figure 75.

Figure 75. Server document Basics tab
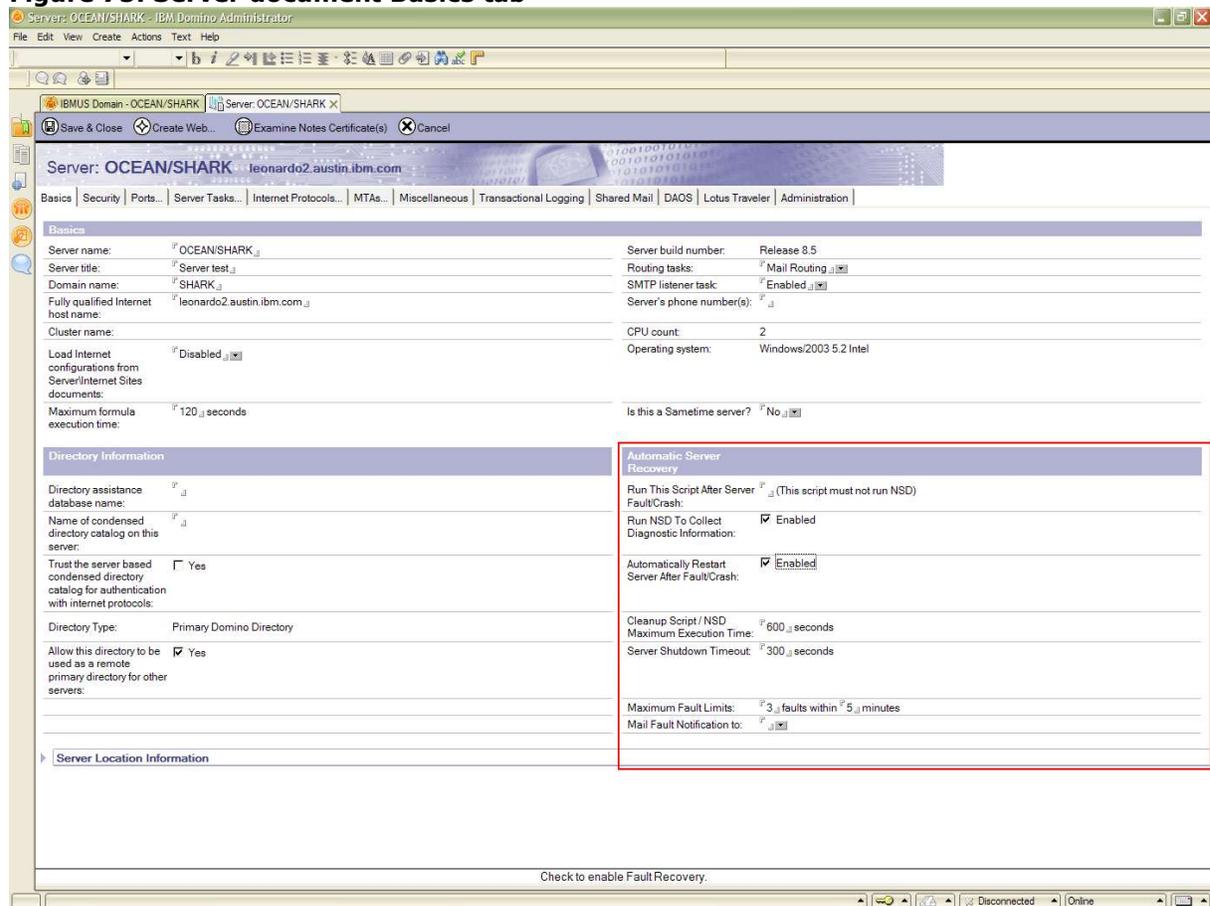
Specifically, on the bottom right-hand portion of the page you can set the options for automatic server recovery (see figure 76).

Figure 76. Automatic Server Recovery section of Server doc

To determine the best configuration for each environment, you need to understand what each setting does, so let's review some of the key fields as shown above in figure 76:

Run NSD To Collect Diagnostic Information. Enable this to have an NSD collected in the event of a server crash.

Automatically Restart Server After Fault/Crash. Enable this if you want the server to restart automatically after a crash. For example, if it crashes during the middle of the night, the server would restart by itself without any human intervention needed.

Maximum Fault Limits. Use this option to specify the maximum number of faults during a certain amount of time in which the server should be restarted automatically. This can help prevent further damage to the server itself when, for example, a database is corrupted and as soon as the server is restarted, it crashes again and again.

In some cases, it may also be necessary to obtain a manual NSD, to diagnose a hang, for example. In the following example we show how to obtain a manual NSD on a Domino server running on the Win32 platform:

Let's start by opening a Command Prompt window and navigating to the Domino program directory (see figure 77), which is where the nsd.exe file should be located (in case the Domino program directory is not in the path of the operating system).

Figure 77. Navigate to Domino program directory
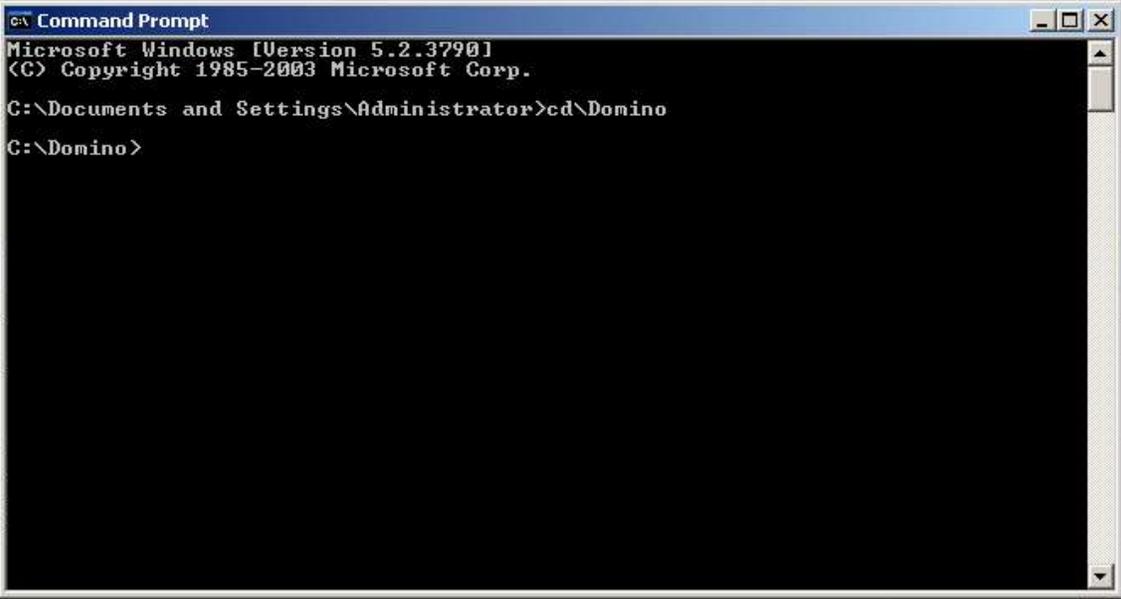
Now we execute the nsd.file on the console to collect the information and generate a report. Figure 78 shows the nsd running and gathering system information.

Figure 78. NSD gathering system info

After the NSD process has finished, it displays the information shown in figure 79, indicating the time it ended and the location and name of the file generated. This text file is usually generated in IBM_TECHNICAL_SUPPORT located in the Domino Data Directory and has a .log extension.

Figure 79. NSD finished
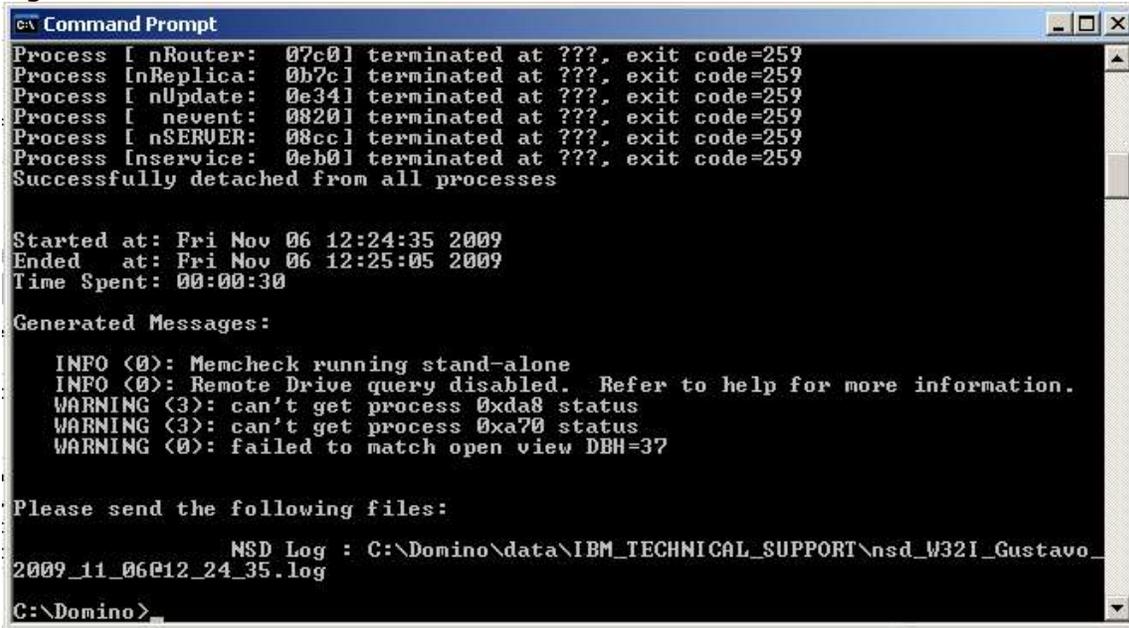

```
Command Prompt                                                      _ □ ×
Process [ nRouter:    07c0] terminated at ???, exit code=259
Process [nReplica:    0b7c] terminated at ???, exit code=259
Process [ nUpdate:    0e34] terminated at ???, exit code=259
Process [  nevent:    0820] terminated at ???, exit code=259
Process [ nSERVER:    08cc] terminated at ???, exit code=259
Process [nservice:    0eb0] terminated at ???, exit code=259
Successfully detached from all processes


Started at: Fri Nov 06 12:24:35 2009
Ended   at: Fri Nov 06 12:25:05 2009
Time Spent: 00:00:30

Generated Messages:

   INFO (0): Memcheck running stand-alone
   INFO (0): Remote Drive query disabled.  Refer to help for more information.
   WARNING (3): can't get process 0xda8 status
   WARNING (3): can't get process 0xa70 status
   WARNING (0): failed to match open view DBH=37


Please send the following files:

           NSD Log : C:\Domino\data\IBM_TECHNICAL_SUPPORT\nsd_W32I_Gustavo_
2009_11_06@12_24_35.log

C:\Domino>_
```

Note that the NSD file name also contains information about the platform, host name, and the date and time it was executed, which may be useful in locating the desired NSD file.

For more information on how to run NSD on the UNIX platform, refer to Technote #1214298, titled "How to run NSD manually on a Domino server for UNIX platforms."

8 Conclusion

Now that you are familiar with Domino terminology and the basic operational procedures to administer a Domino server, you have the foundation on which you can continually learn more product features and become an advanced Domino system administrator.

9 Resources

Notes and Domino Information Center:
http://publib.boulder.ibm.com/infocenter/domhelp/v8r0/index.jsp

developerWorks® Lotus Notes and Domino product page:
http://www.ibm.com/developerworks/lotus/products/notesdomino/

Lotus Notes, Lotus Domino, and Lotus Domino Designer Release Notes:
http://www.ibm.com/developerworks/lotus/documentation/releasenotes/

Notes and Domino wiki:
http://www-10.lotus.com/ldd/dominowiki.nsf

Notes/Domino Fix List:
http://www-10.lotus.com/ldd/r5fixlist.nsf

10 About the authors

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