

# Lotus Domino Backup

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# Table of Contents

- 1.0 Overview of Lotus Domino
- 2.0 Overview of Lotus Notes Clients
- 3.0 Transaction logs and use of it.
- 4.0 Most Common Problems seen during backing of the Lotus Domino Database
- 5.0 Troubleshooting Tips

## 1.0 Overview of Lotus Domino

Lotus Domino is a server database , which can be installed as a application server, Messaging server It can be installed on a multiple Operating System platform (like Windows, Unix, Linux, AIX and IBM midrange systems ).

On a single Lotus domino server it can scale of tens of thousands of users per server. The security can set at various levels and it's independent of the server operating system. There are few critical files which are created at the time of Domino Server installation and configuration.

They are

- Notes.ini
- Server.id
- Cert.id

All the database are stored as .NSF file and at the time of the backup the backup job backs up the .nsf, templates, \*.nlo and \*.txn

In Lotus Domino Version 8.5.0 there is a new feature called DAOS (Domino Attachment and Object services) was introduced. Using the DAOS function it can store the attachment outside the NSF file in Notes Large Object (NLO) Files.

Two major benefits with DAOS is that

- It allows multiple copies of the same attachment to be stored as a single copy to save storage.
- It segregates the relatively static attachment data from the NSF data to allow flexibility in data storage and backup process introduced.

In Domino 8.5.0, DAOS works with any NSF-based application and is transparent to clients and other servers. It can be enabled on an individual-NSF basis, and not all NSF files on the server are required to participate.

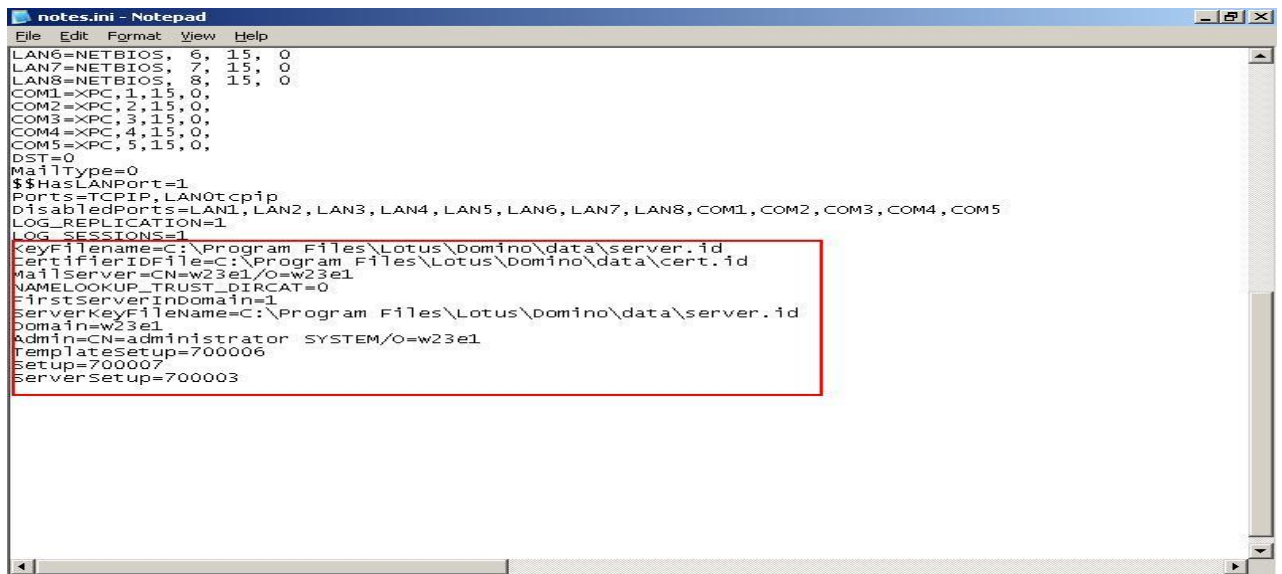
## Brief description of Notes.ini

In general whenever a domino server / Lotus notes client is installed it creates the Notes.ini file in the default installation directory. This notes.ini file includes the installation path, installation choice, server console commands, and the setup selections.

To modify or edit the Configuration there are two ways to do so one is to use the Domino Administrator client, or else by editing the Notes.ini. By default the notes.ini is found on the Lotus Domino installed folder

As a best practice before making any changes to the notes.ini file it is better to make a copy of the file and then edit it.

Sample copy of notes.ini file



```

notes.ini - Notepad
File Edit Format View Help
LAN6=NETBIOS, 6, 15, 0
LAN7=NETBIOS, 7, 15, 0
LAN8=NETBIOS, 8, 15, 0
COM1=XPC, 1, 15, 0,
COM2=XPC, 2, 15, 0,
COM3=XPC, 3, 15, 0,
COM4=XPC, 4, 15, 0,
COM5=XPC, 5, 15, 0,
DST=0
MailType=0
$$HasLANPort=1
Ports=TCPIP, LANtcpip
DisabledPorts=LAN1, LAN2, LAN3, LAN4, LAN5, LAN6, LAN7, LAN8, COM1, COM2, COM3, COM4, COM5
LOG_REPLICATION=1
LOG_SESSIONS=1
KeyFileName=C:\Program Files\Lotus\Domino\data\server.id
CertifierIDFile=C:\Program Files\Lotus\Domino\data\cert.id
MailServer=CN=w23e1/O=w23e1
NAMELOOKUP_TRUST_DIRCAT=0
FirstServerInDomain=1
ServerKeyFileName=C:\Program Files\Lotus\Domino\data\server.id
Domain=w23e1
Admin=CN=administrator SYSTEM/O=w23e1
TemplatesSetup=700006
Setup=700007
ServersSetup=700003

```

## Brief description of Cert.id

Certifier IDs and certificates form the basis of Domino security. Using the certifier ID you issue certificates, based on the organization's naming tree, to servers and users when you register them. Each certificate is stored in the server or user ID and is valid for as long as you define during registration. When servers and users share a certificate, they trust each other and can communicate, or authenticate as it is called in Domino. Authentication is a process that ensures server or user IDs are members of the same naming tree. For servers and users in different naming trees, create cross-certificates to enable communication.

## **Brief description of Server.id**

A Notes or Domino ID uniquely identifies a user or server. Domino uses the information in IDs to control the access that users and servers have to other servers and applications. One of the responsibilities of the administrator is to protect IDs and make sure that unauthorized users do not use them.

Some sites may require multiple administrators to enter passwords before gaining access to a certifier or server ID file. This prevents one person from controlling an ID. In such cases, each administrator should ensure each password is secure to prevent unauthorized access to the ID file.

## **2.0 Overview of Lotus Notes**

Three types of Lotus client available, Lotus notes client is used for messaging, Lotus administrator used to administrator the domino server, Lotus design client will be used an application client. Lotus Notes client as a messaging application. It can be installed on Windows XP.

Lotus Notes client provides day to day business collaboration functionality, such as email, calendars, to do list, contacts managements and instant messaging,

## **3.0 Transaction logging**

A Transactional Log is simply a binary file where transactions are written. The transactions are saved in log extents that have a .TXN extension. Each log extent is 64 MB and will fill before a new extent is created or a spare one reused. Multiple log extents collectively can grow to a maximum size of 4 GB with circular logging or available disk space for archive logging.

Transaction logging keeps a sequential record of every operation that occurs to data. If a database becomes corrupted, you can "roll back" the database to a point before it was corrupted and replay the changes from the transaction logs. A single transaction is a series of changes made to a database on a server. For example, a transaction might include opening a new document, adding text, and saving the document.

Transaction logging can be set on each database or on the entire database. There are different types of Transaction logs available; they are Circular Logging, Archive Logging.

## **Circular Logging**

Circular logging is the default transaction log type. Circular logging uses one transaction log of designated space (the size is defined in the server document from 192MN to 4 GB), and overwrites old data in the transaction log (first in, first out) when the allocated file size has been reached with new transactions. Circular logging uses less space on a Domino server, but because the transactions in the log are overwritten, this method limits the administrator's recovery option. All transactions in the log are written to the database before they are overwritten in the log.

Circular logging is most useful for recovery of the server in the event of server crashes, and will improve the server performance. If you use circular logging, the administrator will need to implement a backup strategy for Notes databases that deals with each database as an independent entity with no incremental backup capacity. Circular logging does not support incremental backups. Circular logging may be of use on hub servers where the server performs an administrative function, such as a mail hub or replication hub, where the server has no mail or application databases that will require restoration from backup.

## **Archive Logging**

Archive logging writes all transactions to the log, and once all changes have been written to the database, allows the archive of the transaction log. These transaction logs are termed inactive, since they do not contain any transactions necessary for a restart recovery.

When Domino restarts using the existing file again, it increments the log file name. If all the log files become inactive and are not archived. Domino creates additional log files. Archive logging is the recommended method of transaction logging. Archive logging requires the use of a third-party backup utility. Archive logging will enable roll back, media recovery and point-in-time recovery methods with the use of a third-party backup utility.

Should not use archive logging without a third-party backup utility which can read the logs. The backup utility polls the log extents to determine which need backing up and reports when the backup is complete so the log extent can be reused. If this is not done, the Domino server may run out of disk space and crash.

There are two type of Backup can be performed, one is the traditional method by making the copies of the database files, to a tape or to a file server or relying on Transaction logs

If the transaction log is enabled and set to Archive log style then only we can perform Incremental backup, during the incremental backup it only backs up the .TXN files (transaction logs). Backed up (plus any new databases or databases that have had their DBIID changed since the last backup).

## **4.0 Most Common Problems seen during backing of the Lotus Domino Database**

### **Problem 1**

When trying to backup the domino database we may see the following error "Could not initialize the connection to Lotus Domino properly. Error=417"

This error is seen when backup software trying to access the domino server when the data Protection call is made.

### **Cause**

The above problem is seen when Lotus Domino Server Console Security is enabled. Console security is an additional security feature in the Domino Administrator which prevents any command or application from execution without the additional Console Security password.

### **Suggestion**

To fix the problem we need to turn off the Console Security. It is the Domino Server which prevents any command or application from running if console Security is enabled.

### **Problem 2**

E8604 Failed to start backup. (DBNAME=xxxx, EC=Failed to open Domino database or directory. This database has local access protection (encrypted) and you are not authorized to access it)

### **Cause**

When trying to backup the Lotus domino database using the CA ARCserve Backup Lotus domino agent we see the following error message "E8604 Failed to start backup. (DBNAME=xxxx, EC=Failed to open Domino database or directory. This database has local access protection (encrypted) and you are not authorized to access it)" and none of the database is getting backed up.

## **Solution**

On the domino server, when checking the user database document properties we see that for all the users the database is encrypted. In order to backup the database the encryption has to be disabled.

## **Problem 3**

Transaction logs are not cleared even though it is selected in the Backup job

## **Cause**

On looking at the transaction log directory on the domino server we see the message "x:\logdir\S0000012.txn has been backed up without done archive", this means that client has selected only the transaction log and submitted the backup.

## **Solution**

In order to backup the transaction log the client need to select the entire domino icon on the backup and then submitted a rotation backup job. At time when the incremental backup job runs it archive the Transaction logs and backs them to the tape.



## 5.0 Troubleshooting tips

### 5.1 How to check the server ID file in the Notes.ini files?

Using WinWord or any editor open the Notes.ini file, as you scroll down you will see the following sentences which shows the server.id ID

“KeyFileName=C: \Program Files\IBM\Lotus\Domino\data\server.id”

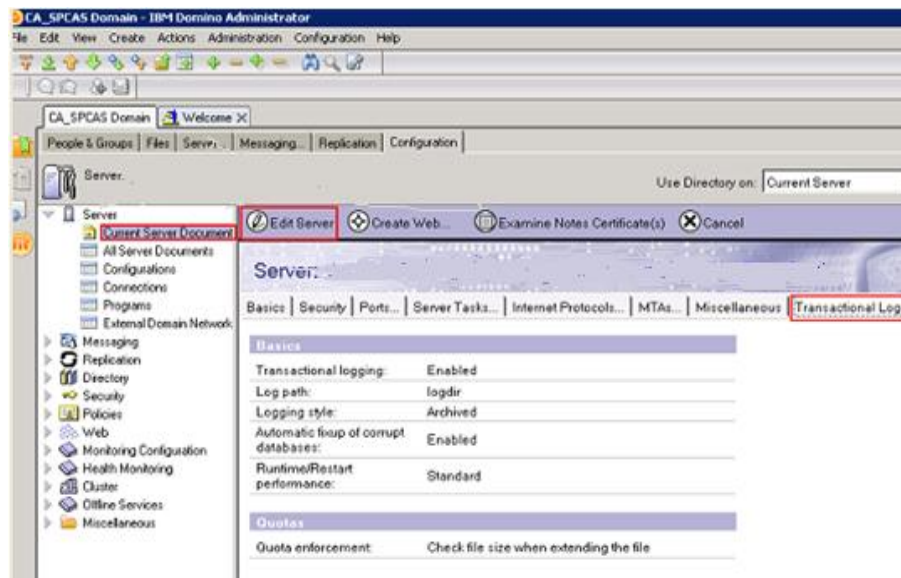
Note: sometime server.id Key Filename will be the same as shown above or else will have a different name. In such scenario use the current xx.id (server.id) that is shown in Notes.ini file

### 5.2 How to verify if the Transaction log is enabled in the Domino server?

There are two ways to check if the Transaction log is enabled or not.

#### Step 1

1. Using the Domino administrator console
2. Click on the Configuration Tab
3. Select the Current Server
4. On the Right side of the screen scroll the Select Transaction Log tab



## Step 2

1. Open the Notes.ini file which is located at the Domino server installation folder.
2. On scrolling down will see the following sentences  
"TRANSLOG\_Status=1"

## 5.3 How to verify if the DAOS is enabled in the Domino server?

There are two ways to check if the DAOS is enabled or not.

### Step 1

1. Using the Domino administrator console
2. Click on the Configuration Tab
3. Select the Current Server
4. On the Right side of the screen scroll the Select DAOS tab

### Step 2

Open the Notes.ini file which is located at the Domino server installation folder.

"DAOSEnable=1"