



IBM Software Group

## Determining the database being accessed at the time of a server outage



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## Introduction

- This is a high level overview of the basic Domino® troubleshooting steps to identify the database that was being accessed by the fatal thread at the time of a server outage.
- Once the database is identified, Domino administrators can take the necessary action to correct the problem.

## What is a server outage?

- A crash is a sudden failure of a software application due to a fatal exception at the program or OS level or a hardware device.
- In the event of a crash an NSD will generate manually if “Run NSD to Collect Diagnostic Information” is set in the Server document on the Basics tab in the Fault Recovery section

## Notes System Diagnostic file (NSD)

- An NSD is a collection of data created by Domino.
- The NSD is used to check server performance and assist in problem determination.
- Once generated, the NSD is stored in IBM\_TECHNICAL\_SUPPORT inside the server's data directory.
- Filename format consists of time/date when the file was created.
- The NSD can be opened with any text editor.

## Step 1: Find the virtual thread

- Search for "crash time" to find the MM/OS Structure Information section of the Notes Memory Analyzer section of the NSD.
- Note the **physical thread** of the crash maps to the **virtual thread**.

```
<@@ ----- Notes Data -> OS Data -> MM/OS Structure Information (Time 16:37:15) ----- @@>
```

```
Start Time = 02/04/2008 09:38:47  
Crash Time = 02/04/2008 16:36:37  
Console Log Enabled = 1  
Console Position = 120  
Console Position = 120  
SharedDPoolSize = 8388608  
FaultRecovery = 0x00010012  
Cleanup Script Timeout= 600  
Crash Limits = 3 crashes in 5 minutes  
Core Dump Path =  
StaticHang = Virtual Thread [ http:2521: 10] (Native thread [ http:2521:-908854368]) (0x9d9/0xa/0xc9d3fba0)  
ConfigFileSem = { SEM:#0:0x010d} n=0, wcnt=-1, Users=-1, Owner=[ : 0]  
FDSEm = { RWSEM:#52:0x410f} rdcnt=-1, refcnt=0 Writer=[ : 0], n=52, wcnt=-1, Users=0, swCnt=0, ssCnt=0 Owner=[ : 0]
```

## Step 2: Use the virtual thread to find the database

- Take the virtual thread ID "http: 2521: 10" and search through the NSD until you locate "VThread" in the Notes Memory Analyzer Resource Usage Summary section. The database is marked with "Database:"

```

** VThread [ http:2521: 10]
.Mapped To: PThread [ http:2521:-908854368]
.. Database: /srv/notesdata3/mail/testuser.nsf
.... DBH: 686, By: CN=Test User/O=GUSD, WasAccessed=Yes
..... doc: HDB= 686, NoteID=18494, hNote=0x3ce9, flags=0300, class=0001
..... doc: HDB= 686, NoteID=4762, hNote=0x03f2, flags=0001, class=0004 [Form Name="_s_CloseWindow"]
..... doc: HDB= 686, NoteID= 726, hNote=0x01e3, flags=0002, class=0008
..... doc: HDB= 686, NoteID= 0, hNote=0x0448, flags=0000, class=0001
.... DBH: 367, By: , WasAccessed=Yes
.... DBH: 530, By: , WasAccessed=Yes
.. Database: /srv/notesdata3/mail/testuser2.nsf
.... DBH: 632, By: CN=Test User2/O=GUSD, WasAccessed=Yes
.. file: fd: 107, /srv/notesdata3/mail/testuser.nsf
.. file: fd: 90, /srv/notesdata3/mail/testuser2.nsf
.. SOBJ: addr=0x086d64fc, h=0xf0104071 t=0xc130 (BLK_TLA)
.. SOBJ: addr=0x0870020c, h=0xf01040c2 t=0xc30a (BLK_LOOKUP_THREAD)
.. SOBJ: addr=0x086ca5dc, h=0xf01040b5 t=0xc275 (BLK_NSFT)
.. SOBJ: addr=0xc6d9f364, h=0xf010436f t=0xc436 (BLK_LSITLS)
.. SOBJ: addr=0xc6d4fcdc, h=0xf0104737 t=0xcf02 (BLK_FT_STATIC)
.. SOBJ: addr=0xc70cc94c, h=0xf01043db t=0xc33c (BLK_VDIRCONTEXT)

```

## Step 3: Identify the database

- The primary database is the current database being accessed by the crashing thread. In this example it is "testuser.nsf". The secondary database is "testuser2.nsf" and it was previously accessed by the thread.
- The NoteID can be used to determine messages, agents or views within the database that might be causing the problem. This is explained further in step 5.

```
.. Database: /srv/notesdata3/mail/testuser.nsf
.... DBH: 686, By: CN=Test User/O=GUSD, WasAccessed=Yes
..... doc: HDB= 686, NoteID=18494, hNote=0x3ce9, flags=0300, class=0001
..... doc: HDB= 686, NoteID=4762, hNote=0x03f2, flags=0001, class=0004 [Form Name="_s_CloseWindow"]
..... doc: HDB= 686, NoteID= 726, hNote=0x01e3, flags=0002, class=0008
..... doc: HDB= 686, NoteID= 0, hNote=0x0448, flags=0000, class=0001
```

## Step 4: Perform database maintenance

- If the server crashes repeatedly on the same database, basic maintenance can correct the problem. Database maintenance recommendations and steps can be found in this technote:

Administrator Guide for Domino Server maintenance

Document #7006573

<http://www.ibm.com/support/docview.wss?rs=899&uid=swg27006573>

- If maintenance does not correct the issue, try creating a new replica. If the cause is corruption, the corruption should not replicate.
- Problems with message attachments or agents within the database can also cause a server to crash.



## Step 5: Using a NotelD

- A NotelD can be used to find a message, agent or form
- A view that displays NotelDs can be created with the Domino Designer or you can find the NotelD with the Domino Administrator. The details can be found in this technote:

Finding Notes documents using @NotelD

Document #1087186

<http://www.ibm.com/support/docview.wss?rs=899&uid=swg21087186>

## Conclusion

- This documentation provides individuals with the basic steps for identifying and repairing databases being accessed by a crashing thread using an NSD.
- In certain cases, engaging the help of an IBM Support Engineer might be necessary. In these cases, a copy of the problem database, the NSD and the console log will be required.

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