



Lotus.

# 至臻服务 故友铸新篇

IBM软件用户技术交流会— Lotus专场



24 Hours

# 关于处理Domino系统宕机的经验分享

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24 Hours

## 议程

- 常见的服务器无法重启的原因
- 保护服务器并收集数据
- 数据分析
- 如何尽快的恢复服务器

## 常见的服务器无法重启的原因

- 数据库损坏
- 系统数据损坏 (Names.nsf, events4.nsf, admin4.nsf, log.nsf)
- 事务日志损坏
- 路由器派送某个邮件
- 内存损坏
- 磁盘空间不足
- Domino系统配置文件丢失或者损坏(notes.ini, server.id)
- .....

## 保护服务器并收集数据

- 连续的服务器宕机容易导致数据损坏
  
- 尽量避免直接杀死Domino服务器
  
- 等待NSD运行完毕
  - Windows — 查看Windows任务管理器
  - Unix — #ps -ef
  - OS400 — wrkdomsvr -> 选项9 (Work server jobs)

## 数据的收集

### ■ IBM\_TECHNICAL\_SUPPORT目录

- NSD (文件名的时间信息是运行NSD的时间)
  - nsd\_XXX\_serverName\_YYYY\_MM\_DD@HH\_MM\_SS.log
  
- Console log (文件名的时间信息是服务器启动的时间)
  - console\_ServerName\_YYYY\_MM\_DD@HH\_MM\_SS.log
  
- SEMDEBUG (文件名的时间信息是服务器启动的时间)
  - SEMDEBUG\_ServerName\_YYYY\_MM\_DD@HH\_MM\_SS.TXT
  
- Core dmp
  - core\_nHTTP\_W32I\_ServerName\_YYYY\_MM\_DD@HH\_MM\_SS.dmp

## 数据收集相关的设置 (I)

- 设置服务器故障时自动运行NSD

### 服务器自动恢复

在故障/崩溃后运行这脚本: 『 』 (此 Script 绝对不能运行 NSD)

请运行 NSD 以收集诊断信息:  启用

在故障/崩溃后自动重新启动服务器:  启用

清除 Script / NSD 最大执行时间: 『 600 』 秒

服务器关闭超时: 『 300 』 秒

最大错误限制: 『 3 』 个错误, 发生时间: 『 5 』 分钟

将失败通知发送给: 『 admin 』

## 数据收集相关的设置（II）

- 调试参数
  - CONSOLE\_LOG\_ENABLED=1
  - DEBUG\_THREADID=1
  - DEBUG\_CAPTURE\_TIMEOUT=1
  - DEBUG\_SHOW\_TIMEOUT=1
- 启用参数的方式
  - 手动把参数添加到服务器的Notes.ini并重启服务器
  - 动态启动,使用”set config xxxx”
    - 如: set config CONSOLE\_LOG\_ENABLED=1



## 数据分析

- **NSD** 的基本概念
- 定位宕机的任务及堆栈
- 定位相关的数据库
- 其它相关信息

## NSD 的基本概念 (I)

- **NSD (Notes System Diagnostic)** 是Lotus Domino 产品主要的FFDC 诊断工具之一。 Lotus Domino 产品主要包括：
  - Domino/Notes
  - Quickplace
  - Sametime
- **FFDC = First Failure Data Capture**
- 可用于分析 **Notes/Domino** 及其相关产品的问题，如：
  - 宕机
  - 挂起
  - 严重的性能问题
- **NSD** 对于 **Notes** 客户端也同样适用

## NSD 的基本概念 (II)

- 可以在所有平台上使用 (**Mac**除外)
- **Unix** 平台 – **NSD** 是一个**shell**脚本 (**nsd.sh**)
- **W32** 平台 – **NSD** 是一个可执行文件 (**nsd.exe**)
- **NSD** 可以两种方式运行
  - 手工运行 – 以命令行的方式 (挂起)
  - 作为故障恢复的内容自动运行 (宕机) – 在服务器文档中启用

## NSD的更新策略

- 定期把**NSD**的补丁更新到**IBM**的网站
- **NSD**的更新补丁包含
  - 新增加的功能
  - 解决**NSD**的一些已知问题
- **NSD**补丁可以和其它**Domino**补丁共存
- **NSD**下载的网址：
  - <http://www-1.ibm.com/support/docview.wss?uid=swg24013182>

## 定位宕机的任务及堆栈

- 关键字 **MM/OS(6.5.4以后)** , **Shared OS(6.5.4及以前)**

<@@ ----- Notes Memory Analyzer (memcheck) ->MM/OS Structure Information (Time 08:13:20)  
----- @@>

**Start Time** = 13/10/2007 08:39:22 PM

**Crash Time** = 15/10/2007 08:12:37 AM

Console Log Enabled = 1

Console Position = 331

Error Message = **PANIC: LookupHandle: handle not allocated**

Console Position = 331

SharedDPoolSize = 4194304

FaultRecovery = 0x00010010

Cleanup Script Timeout= 1800

Crash Limits = 3 crashes in 5 minutes

**StaticHang** = [ nhttp: 0d48: 001f]/[ nhttp: 0d48: 0944] (0xd48/0x1f/0x944)

ConfigFileSem = ( SEM:#0:0x010d) n=0, wcnt=-1, Users=-1, Owner=[ : 0000].....

## 定位宕机的任务及堆栈

- 关键字: **Fatal, Panic**

```
#####  
### FATAL THREAD 39/63 [ nhttp: 0d48: 0944 ]  
### FP=0x1274ef34, PC=0x60176b01, SP=0x1274e7c0  
### stkbase=12750000, total stksize=262144, used stksize=6208  
### EAX=0x02150648, EBX=0x124d6b24, ECX=0x01b10000, EDX=0x01b10000  
### ESI=0x1274edc8, EDI=0x20a9cb61, CS=0x0000001b, SS=0x00000023  
### DS=0x00000023, ES=0x00000023, FS=0x0000003b, GS=0x00000000 Flags=0x00010206  
Exception code: c0000005 (ACCESS_VIOLATION)  
#####  
@[ 1] 0x60176b01 nnotes.Panic@4+417 (60ae2948,f0104236,124d6b14,1274ef60)  
@[ 2] 0x60002c16 nnotes.LockMemHandle@12+294 (f0104236,1274ef5c,1274ef68,60d31390)  
@[ 3] 0x60077715 nnotes.OSMemoryGetSize@4+21 (60d31400,124c5814,850c014,0)  
@[ 4] 0x004c724f NINOTES.NMemBlock::NMemBlock+127 (3a2f,f0104236,1,0)  
@[ 5] 0x00415f16 NINOTES.UserCacheEntry::GetUserInfo+102  
      (124cd014,850c014,124cd014,1274efe4)  
.....
```

## Win32平台

```
#####
```

```
### FATAL THREAD 39/63 [ nhttp: 0d48: 0944]
```

```
### FP=0x1274ef34, PC=0x60176b01, SP=0x1274e7c0
```

```
### stkbase=12750000, total stksize=262144, used stksize=6208
```

```
### EAX=0x02150648, EBX=0x124d6b24, ECX=0x01b10000, EDX=0x01b10000
```

```
### ESI=0x1274edc8, EDI=0x20a9cb61, CS=0x0000001b, SS=0x00000023
```

```
### DS=0x00000023, ES=0x00000023, FS=0x0000003b, GS=0x00000000  
Flags=0x00010206
```

```
Exception code: c0000005 (ACCESS_VIOLATION)
```

```
#####
```

```
@[ 1] 0x60176b01 nnotes.Panic@4+417 (60ae2948,f0104236,124d6b14,1274ef60)
```

```
@[ 2] 0x60002c16 nnotes.LockMemHandle@12+294  
(f0104236,1274ef5c,1274ef68,60d31390)
```

```
@[ 3] 0x60077715 nnotes.OSMemoryGetSize@4+21 (60d31400,124c5814,850c014,0)
```

```
@[ 4] 0x004c724f NINOTES.NMemBlock::NMemBlock+127 (3a2f,f0104236,1,0)
```

```
@[ 5] 0x00415f16 NINOTES.UserCacheEntry::GetUserInfo+102  
(124cd014,850c014,124cd014,1274efe4)
```

```
.....
```

## AIX平台

```
#####  
## thread 7/10 :: diiop pid=13252, k-id= 59465 , pthr-id=1543  
## stack      :: k-state=wait, stk max-size=262144, cur-size=11712  
#####  
ptrgl._ptrgl() at 0xd01d4b58  
raise.nsleap(??, ??) at 0xd01e3280  
raise.nsleap(??, ??) at 0xd01e3280  
sleep(??) at 0xd024cf88  
OSRunExternalScript(??) at 0xd0f3b26c  
OSFaultCleanup(??, ??, ??) at 0xd0f3c228  
fatal_error(??, ??, ??) at 0xd1e553bc  
strlen() at 0xd01d95e0  
Cstrlen(??) at 0xd0d4a9bc  
ANNSearchItemByName__6ANNoteFPUC(??, ??, ??) at 0xd382e9c0  
.....
```



# Solaris平台

```
#####
```

```
##### thread 50/61 :: http, pid=11903, lwp=50, tid=50 #####
```

```
#####
```

```
[1] ff2195ac nanosleep (de07b1b8, de07b1b0)
[2] ff07e230 sleep (1, de07b220, 40, 100, de07b337, fc800000) + 58
[3] fd9fe978 OSRunExternalScript (0, 1393d8c, 11, 26c00, fed925ac, 26d40) + 15c
[4] fd9fd68c OSFaultCleanup (0, 0, 125800, 2e7f, 1393a28, fed925ac) + 3e8
[5] fd9dac18 fatal_error (b, de07bd20, de07ba68, 0, 0, 0) + 1a4
[6] f83c7964 __1cCosHSolarisPchained_handler (1, fd9daa74, f853ce2c, de07ba68) + 9c
[7] f820a7ac JVM_handle_solaris_signal (0, 2b0708, de07ba68, f84c8000, b, de07bd20) +
  7e4
[8] ff085fec __sighndlr (b, de07bd20, de07ba68, f820a8cc, 0, 0) + c
[9] ff07fdd8 call_user_handler (b, de07bd20, de07ba68, 0, 0, 0) + 234
[10] ff07ff88 sigacthandler (b, de07bd20, de07ba68, 0, ab6c80, 13a6814) + 64
[11] --- called from signal handler with signal 11 (SIGSEGV) ---
[12] fd2fcc58 __1cJURLTargetJGetDbFile6M_pc_ (de07f27c, e, f9910900, 0, de07c0ac, 3) +
  4
[13] fd2d9448 __1cFHaikuDCTXQGetFormsCachePtr6F_pnMHuFormsCache (de07bff4, 7e68,
  de07cc0c) + 4
```

```
.....
```

# Linux平台

<@@ Notes Process Info -> Call Stacks for process *bpt/ibm/lotus/notes/latest/linux/http @@*>

.....

----- Thread 12759 -----

0x42174771: \_\_nanosleep + 0x11 (1, 41f9ac54, 3150, 1, 4bc08608, 0) + 354

0x406a2421: OSRunExternalScript + 0x15d (0, 41f9ac54, 4bc08a1c, 4bc08a1c, 61660000, ffff)  
+ 1c8

0x406a14e2: OSFaultCleanup + 0x4b2 (0, 0, 0, 8141f6c, 6, 4bc08cc8) + 20c

0x40682d35: **fatal\_error** + 0x12d (6, 4bc08cc8, 4bc08d5c, 4bc08b68,  
81422e8, 494fa4e0)

0x494af892: panicSignalHandler + 0xea (6, 4bc08cc8, 4bc08d5c, 2, 81422f8, 4bc08b68) + 8c

0x494ee80f: sysUnwindSignalCatchFrame + 0x77 (494ee844, 6, 4bc08d5c)

0x494ee8a1: sysSignalCatchHandler + 0x5d (6, 4bc08cc8, 4bc08d5c, 8142178, 4bc08d5c, 6)

0x494ef12c: userSignalHandler + 0x68 (6, 4bc08cc8, 4bc08d5c, 494ee844, 8142178, 4bc08d5c)  
+ 28

0x494ef0ba: intrDispatch + 0xba (6, 4bc08cc8, 4bc08d5c, 8142178, 40043afc, 0) + 10

.....

# OS400平台

**JOB: 085347/QNOTES/SERVER**

**THREAD: 0xf7**

_CXX_PEP__Fv	8	QP0ZPCP2 QP0ZPCP2
_C_pep	0	MAIN SERVER
main	8	
ServerMain	50	LIBMAIN
.....		
InitializeNSF	217	NSFDATA
RmRestart	91	RMREST
_RmRestartRedo__FP16DBCCONTEXT_STRUCT	38	
_RmDispatch__FR11MemGrowableCiR10LSN_STRUCTRC10L	44	RMDISP
_RmDoDispatch__FRC10LSN_STRUCTPCvC10_RM_PHASESP1	68	
STMGRRedo	100	STMGR
ExceptionOccurred	1	LIBMAIN SERVER
OS400DominoCancelHandler	5	BREAK LIBNOTES
<b>fatal_error</b>	<b>33</b>	
OSFaultCleanup	1	CLEANUP
OSFaultCleanupExt	86	
OSRunExternalScript	39	
.....		



## 定位打开的数据库/视图

### ■ MM/OS

```
<@@ ----- Notes Memory Analyzer (memcheck) -> MM/OS Structure Information (Time
09:17:08) ----- @@>
```

```
Start Time = 05/14/2008 09:13:50 AM
```

```
Crash Time = 05/14/2008 09:15:53 AM
```

```
.....
```

```
Crash Limits = 3 crashes in 5 minutes
```

```
Core Dump Path =
```

```
StaticHang = [ http:2786: 27]/[ http:2786:358435760] (0xae2/0x1b/0x155d4bb0)
```

```
ConfigFileSem = ( SEM:#0:0x010d) n=0, wcnt=-1, Users=-1, Owner=[ : 0]
```

```
.....
```

### ■ Resource Usage Summary

```
** VThread [ http:2786: 27]
```

```
.Mapped To: PThread [ http:2786:358435760]
```

```
.. Database: /local/notesdata/1678999.nsf
```

```
.... DBH: 267, By: CN=Cynthia Cao/O=testOrg, WasAccessed=Yes
```

```
..... doc: HDB=267, NoteID=2302, hNote=0x2f77, class=0001, flags=2200
```

## 关于打开数据库的误区

*定位宕机相关的数据库只能提供一个诊断问题方向，并不说明该数据库/视图/文档一定就是导致宕机的原因，也不能代表问题一定是和数据库损坏相关。*

## 其他相关的信息

- 内存使用情况

- Performance data (W32)
- Top 10

- 控制台输出

Thread=[0D48:001F-0944]

Stack base=0x12750090, Stack size = 6364 bytes

PANIC: LookupHandle: handle not allocated

- 操作系统的日志

## 如何尽快的恢复服务器

- 数据库损坏引起的宕机
- 内存耗尽引起的宕机
- 与**Router/SMTP**相关的宕机
- 与事务日志相关的宕机

## 数据库损坏引起的宕机

- 连续的宕机发生在同一个数据库上，堆栈显示相关的任务正在试图对数据库进行修复的动作

```
#####  
### FATAL THREAD 10/130 [ nserver: 05bc: 105c ]  
### FP=0x06eace74, PC=0x60177011, SP=0x06eac700  
### stkbases=06eb0000, total stksizes=262144, used stksizes=14592  
### EAX=0x016e0648, EBX=0x1d9bb0f8, ECX=0x01120000, EDX=0x01120000  
### ESI=0x06eacd08, EDI=0x00000000, CS=0x0000001b, SS=0x00000023  
### DS=0x00000023, ES=0x00000023, FS=0x0000003b, GS=0x00000000 Flags=0x00010206  
Exception code: c0000005 (ACCESS_VIOLATION)  
#####  
@[ 1] 0x60177011 nnotes._Panic@4+417 (60ae0947)  
@[ 2] 0x60002b05 nnotes._LockMemHandle@12+37 (0,6eace9c,6eacea8)  
@[ 3] 0x60002a46 nnotes._OSMemoryLock@4+22 (0)  
@[ 4] 0x6087a998 nnotes._RebuildBDT@8+120 (6eafb58,6ead670)  
@[ 5] 0x60883f5c nnotes._DbFixup@4+1404 (6eafb58)  
@[ 6] 0x6084c25c nnotes._DoFixup@8+428 (1d9bb0f8,1d9bba34)  
@[ 7] 0x60091531 nnotes._DbLoad@4+5121 (2d94)  
@[ 8] 0x6077ad83 nnotes._NSFDbOpenExtended4@48+18947 (6eafd74,0,0,0,8,6eac34c,1003f,0,0,0,0,0)  
@[ 9] 0x60028891 nnotes._NSFDbOpenExtended3@48+65 (6eafd74,0,0,0,9,6eac34c,1003f,0,0,0,0,0)  
@[10] 0x60072926 nnotes._NSFDbOpenExtended2@44+54 (6eafd74,0,0,0,a,6eac34c,1003f,0,0,0,0,0)  
@[11] 0x6008e526 nnotes._NSFDbOpenExtended@28+54 (6eafd74,0,0,0,b,6eac34c,1003f)  
@[12] 0x100551db nserver!._DbFixupThread@8+427 (230006,0)  
@[13] 0x100018a8 nserver!._Scheduler@4+744 (0)  
@[14] 0x60103820 nnotes._ThreadWrapper@4+208 (0)
```



## 数据库损坏引起的宕机

- 定位数据库

```
** VThread [ nSERVER: 05bc: 070c ]  
.Mapped To: PThread [ nSERVER: 05bc: 105c ]  
.. Database: D:\data\Mail\leungl.nsf  
.... DBH: 1022, By: CN=Mail1/OU=Server/O=IBM, WasAccessed=Yes  
..... doc: HDB=1022, NoteID=302546, hNote=0x0b62, flags=4904, class=0001
```

- 解决方法：对数据库做离线的修复操作，如果数据库无法修复，把数据库从data目录移走

## 内存耗尽引起的宕机

- **Domino**使用的内存到达最大的内存限制时，会出现宕机的情况。宕机的频率取决于内存消耗的速度和应用运行的情况

```
#####  
### FATAL THREAD 52/132 [ nhttp: 0bbc: 1414]  
### FP=0x1341c99c, PC=0x60176b01, SP=0x1341c228  
### stkbase=13420000, total stksize=262144, used stksize=15832  
### EAX=0x01ba0648, EBX=0x00000019, ECX=0x01560000, EDX=0x01560000  
### ESI=0x1341c830, EDI=0x60d80106, CS=0x0000001b, SS=0x00000023  
### DS=0x00000023, ES=0x00000023, FS=0x0000003b, GS=0x00000000 Flags=0x00010206  
Exception code: c0000005 (ACCESS_VIOLATION)  
#####  
@[ 1] 0x60176b01 nnotes._Panic@4+417 (60ae2917)  
@[ 2] 0x60176b7c nnotes._Halt@4+28 (107)  
  
@[ 3] 0x601027f5 nnotes._AccessAllProtected@0+85 ()  
@[ 4] 0x6004551e nnotes._AccessAll@8+46 (1,0)  
@[ 5] 0x60001f2b nnotes._DPoolAlloc@16+235 (1560014,1006,c21d,35b07b20)  
@[ 6] 0x600042c6 nnotes._AllocObject@24+294 (1560014,60dd5c60,35b07b12,1006,6,1341be54)  
@[ 7] 0x60006ec4 nnotes._OSMemAllocExtended@16+244 (c21d,1000,0,1341cb30)  
@[ 8] 0x60007507 nnotes._OSMemAlloc@12+23 (c21d,1000,1341cb30)  
@[ 9] 0x6004198d nnotes._ReadObject+1085 (1341cbac,1e46a,5000)  
@[10] 0x60086b6e nnotes._DbReadObject@20+30 (1341cbac,1e46a,5000,1000,a)  
@[11] 0x600864c0 nnotes._iNSFDbReadObject@20+224 (1341cbac,1e46a,5000,1000,b)  
@[12] 0x600aaa92 nnotes._NSFDbReadObject@20+66 (0,1e46a,5000,1000,c)  
@[13] 0x0049cb35 NINOTES.NDatabase::ReadObject+37 (1e46a,5000,1000,1341cce8,d)
```

## 内存耗尽引起的宕机

<@@ ----- Notes Memory Analyzer (memcheck) -> MM/OS Structure  
Information (Time 08:36:04) ----- @@>

Start Time = 11/12/2007 04:37:29 PM

Crash Time = 11/28/2007 08:35:13 AM

Console Log Enabled = 1

Console Position = 449

Error Message = **PANIC: Insufficient memory.**

Console Position = 449

SharedDPoolSize = 4194304

FaultRecovery = 0x00010012

Cleanup Script Timeout= 600

Crash Limits = 3 crashes in 5 minutes

StaticHang = [ nhttp: 0bbc: 002d]/[ nhttp: 0bbc: 1414]  
(0xbbc/0x2d/0x1414)

## 内存耗尽引起的宕机

<@@ Performance Data -> Performance Statistics (Time 08:38:41) @@>

Page Fault Count	Virt. Size	Peak Virt. Size	Paged Pool Usage	Peak Paged Pool Usage	Paged Pool Limit	Non Paged Pool Usage	Peak Non Paged Pool Usage	Non Paged Pool Limit
23.3M	2.0G	2.0G	31.0M	91.4M	-1	3.7M	17.4M	-1

Page File Usage	Peak Page File Usage	Page File Limit	Work Set Size	Peak Work Set Size	Max. Work Set Size	Handle Count	Kernel Time	User Time [Process Name: Pid]
480.9K	591.8K	-1	1.4G	1.5G	1.3M	1400	17861:05:53	68751:57:11 [ nHTTP: 0bbc: 0bbc]

### ■ 解决的方法:

#### — 内存泄漏

- 联系IBM技术支持对内存的使用情况做进一步分析，可能需要添加调试参数和收集数据来确定内存泄漏的方向
- 在内存到达限制值之前重新启动服务器

#### — 各个应用实际所需要的内存达到最大限制

- 检查应用，做相应的压力测试

#### — NSF\_BUFFER\_POOL\_SIZE\_MB的合理设置

## 与Router/SMTP相关的宕机

- 传送或者投递某个特定的message
- MIME-CD/CD-MIME 的转换
- 邮件规则(mail rule)

# 与Router/SMTP相关的宕机

```
#####  
## thread 4/4 :: router pid=28664, k-id= 51215 , pthr-id=772  
## stack      :: k-state=wait, stk max-size=262144, cur-size=266412  
#####  
ptrgl_ptrgl() at 0xd02061a8  
raise.nsleep(??, ??) at 0xd0214cdc  
raise.nsleep(??, ??) at 0xd0214cdc  
sleep(??) at 0xd021fc54  
OSRunExternalScript(??) at 0xd2d582c0  
OSFaultCleanup(??, ??, ??) at 0xd2d5928c  
fatal_error(??, ??, ??) at 0xd399018c  
GetLockedLocalPool(??) at 0xd2c837d4  
OSLocalAllocNZ(??, ??) at 0xd2c846d0  
computeOSLocalAllocNZ_FUIPv(??, ??) at 0xd2e7e44c  
Alloc__10MemManagerXSP8192_FUIPv(??, ??, ??) at 0xd2e871f8  
TransMemAlloc__7ComputeFCUI(??, ??) at 0xd2e86e04  
Concat__11TextElementCFRC11TextElement(??, ??, ??) at 0xd3e528b8  
OperateElements__15TextOperatePlusFR11TextElementT1(??, ??, ??, ??) at 0xd3e4f2dc  
Plus__13TextListValueCFPC9CompValue13OperationType(??, ??, ??) at 0xd3e4a554  
Execute__6OpPlusFv(??) at 0xd3e813ec  
GetValue__14AtFunctionNodeFv(??) at 0xd2e89178  
.....  
.....  
NSFNoteUpdateAndAddToFolders(??, ??, ??, ??, ??, ??, ??) at 0xd2fbf110  
MailDeliverMessage(0x510fd00c, 0x1c001c, 0x51214f26, 0x51cda6bc, 0x0, 0xac00ac, 0x0, 0x10001) at 0xd363bbe8  
AttemptMessageDelivery(??, ??, ??, ??, ??, ??, ??, ??) at 0x10029460  
DeliverToDestination(??, ??, ??, ??, ??, ??, ??, ??) at 0x1002aa20  
Transfer(??, ??, ??, ??, ??, ??, ??, ??) at 0x1002dd80  
TransferThread(??) at 0x10037d58  
ThreadWrapper(??) at 0xd2b8ac70
```

## 与Router/SMTP相关的宕机

- 定位打开的数据库

```
** VThread [ router:28664: 6]
.Mapped To: PThread [ router:28664: 772]
.. Database: /domino655/data/mail/1851658.nsf
.... DBH: 172, By: CN=Zy655/O=IBM
..... doc: HDB=172, ID=-2147483647, H=28, class=0001, flags=0100
.. Database: /domino655/data/mail.box
.... DBH: 171, By: CN=Zy655/O=IBM
.. file: fd: 9, /domino655/data/mail/1851658.nsf
.. file: fd: 8, /domino655/data/mail.box
```

- 解决方法:

- 重命名mail.box，定位引起宕机的邮件，并找出相应的规律

## 与事务日志相关的宕机

- 没有足够的磁盘空间
- 事务日志损坏
  - **PANIC: Transaction log is damaged!**
- **System log file is full**
  - **PANIC: System Log File is Full**
  - 当前系统对事务日志实际的需要超过最大的限制
  - 数据库/视图/文档损坏
  - 在服务器运行的状态下，把启用事务日志的数据库从操作系统级别删除



# 事务日志相关的宕机

## PANIC: System Log File is Full

```
#####
```

```
##### thread 72/82 :: server, pid=13367, lwp=72, tid=72 #####
```

```
#####
```

```
[1] ff340744 nanosleep (f351efd0, f351efc8)
[2] fcec5ca4 OSRunExternalScript (251, 40, f351f7c0, fec55c4, 1, fef89bbc) + 524
[3] fcec1584 OSFaultCleanupExt (fb800000, 1e4c00, 0, 1, 3437, 1e4c00) + 924
[4] fcec0c14 OSFaultCleanup (0, 0, 0, fce6f030, 1ddf47c, 2f400) + 14
[5] fce6f040 fatal_error (b, 34, 0, 3437, fb800000, 1) + 220
[6] ff340494 __sighndlr (b, f3520a98, f35207e0, fce6ee20, 0, 1) + c
[7] ff33558c call_user_handler (b, 30000, 20008, 0, fad11400, f35207e0) + 3b8
[8] ff34155c _lwp_kill (b, fb800000, 1e5aec, fec55c4, 2b748, 2b400) + 8
[9] fcef36ec Panic (5bd4, fb7294e0, 1e5d03, fef89bbc, fece78c0, 5800) + 28c
[10] fd6626a0 NSFPanic (0, feb15c0a, 0, 2809, 115b4, fec55c4) + 60
[11] fda02cac __1cN_RmCheckpoint6FL_H_ (1, f3521978, 418, f35219a0, f35219a8, 0) + 80c
[12] fda0775c _RmLogFlushThread (feb161cd, 0, 3, 2000, e041402c, 0) + 8bc
[13] fda07d4c RmFlushThreadWrapper (0, 209c, fec55c4, fedbb6a8, 2000, 2b400) + 6c
[14] 0004c084 RmFlushTask (1, ffff, 1, 57c4, 1ca, 1) + 1c4
[15] 0002f348 Scheduler (f886b928, 130268, 41, 32, fa, 2be340) + 488
[16] fceb9f58 ThreadWrapper (fb7294e0, fece78c0, fec55c4, 2b74c, 0, 4c00) + 1d8
    [17] ff340368 _lwp_start (0, 0, 0, 0, 0)
```

## 与事务日志相关的宕机

- 解决方法：
  - 释放磁盘空间
  - 重建事务日志
  - 找出导致事务日志满的第一个任务并采取相应的措施
  - 对数据库本身进行修复

## 如何尽快的恢复服务器—总结

- 检查**NSD**来确定引起宕机的任务
- 如果每个**NSD**的任务和调用栈都是相同的
  - 启动服务器并把引起宕机的任务暂时从启动列表中删除
  - 如果是router宕机，重命名mail.box
  - 检查宕机是不是和特定的数据库相关，对此数据库运行数据库维护命令或者暂时把这个库从Domino的数据目录中隔离
  - 如果是事务日志损坏，重建事务日志
  - 根据宕机的信息来决定是否要添加更多的调试参数来确定引起宕机的函数
- 如果**NSD**每次都不同
  - 重新启动操作系统（W32，AIX）
  - 对系统数据库进行数据库维护操作（names.nsf, events4.nsf,admin4.nsf..）
  - 联系800 support

## 参考资源

- **NSD 补丁更新及下载**

- <http://www-1.ibm.com/support/docview.wss?uid=swg24013182>

- **Domino故障数据收集步骤:**

- <http://www-900.ibm.com/cn/support/viewdoc/detail?DocId=1897668A07000>

- **NSD Hands On**

- <http://www-10.lotus.com/ldd/dpiblog.nsf/dx/HND107?opendocument&comments>

- **关于NSF\_BUFFER\_POOL\_SIZE\_MB的设置**

- <http://www.ibm.com/support/docview.wss?rs=899&uid=swg21286171>



Thank  
You

