Debugging Domino with the Divas and "the Dude"

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Kim Greene - Introduction

- Owner of an IT consulting company

  - Kim Greene Consulting, Inc.

  - www.kimgreene.com

- Started my career at IBM, left and launched my own business in 2000

- Focus areas:

  - HCL collaboration software portfolio

- Customers are worldwide and in multiple industries

- Blog: www.dominodiva.com

- Twitter: iSeriesDomino

Michelle Smith - Introduction

- Owner of an IT consulting company

    - M.E.Smith Consulting

- Started fixing IT issues during University work terms and learned I loved solving the 'puzzles'

- First exposure to Lotus Notes and Domino was migrating a non-Y2K compliant email environment to Domino… wow that was a while ago!

- Focus areas:

    - HCL collaboration software portfolio

- Work with Kim to support a group of amazing clients!

Paul Albright - Introduction

- Technical team lead for Application Development support team at HCL

  - Supporting HCL Notes, HCL Domino, HCL Enterprise Integrator, HCL Domino Rest API, HCL Domino LEAP, HCL LEAP

  - I hit 25 years supporting these products this month

- Bachelor of Science degree in Computer Science

- Master of Science in Management specializing in Computer Information systems

Agenda

- There's a Problem, Now What?!?
- Scoping the Problem
- Enabling Debug and Logging
- Troubleshooting Essentials
- Documenting
- Communicating
- Working with HCL Support and/or Business Partner/Consultant
- Resolving the Issue
- Accelerating troubleshooting with 3rd Party Tools
- Q&A

Agenda

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And so it Begins

- You start your day … and then "oh sh!+" happens
- People panic
  - OMG
  - Phones are ringing

- Details coming in are vague
- Confusion about what the issue is
- Incorrect conclusions are made

- Sound familiar?

Sometimes it is the smallest details

- Case is opened as "Intermittent issue sending emails"
- Mail routing SWE and customer troubleshoot mail routing
- Finally on a call with customer
  - Customer mentions "only happens when clicking button in application"
  - Look at code behind button
  - Found and resolved issue
- Knowing that "little detail" would have saved days of work

Need to Look at the Big Picture

- Customer problem
  - Every time I flush my toilet my computer restarts
- Checked all of the standard things
- Chatting with customer
  - Found out lives in a trailer
  - Computer and electric toilet on same circuit
  - Extra load from the "flush" caused the issue

That Problem is Happening Again

- Get pinged by customer
  - "Hey, remember that lookup issue, it's happening again"

- Started troubleshooting Application "A"

- Screen share, customer said "oh sorry, it's not that DB, it's this one"

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Scoping the Problem

- Key items to gather
  - Who is impacted?
    - Where are they located?
    - How many people are impacted?
    - Internal users, external users, both?
    - Any executives involved?

  - How is the business affected?
    - Loss of revenue
    - Employees unable to do their jobs?

Scoping the Problem

- Key items to gather (cont'd)
    - What platforms are impacted?
        - While it may be "obvious to you", HCL Support won't know the platform

    - Which protocols are impacted?
        - NRPC
        - HTTP
        - SMTP
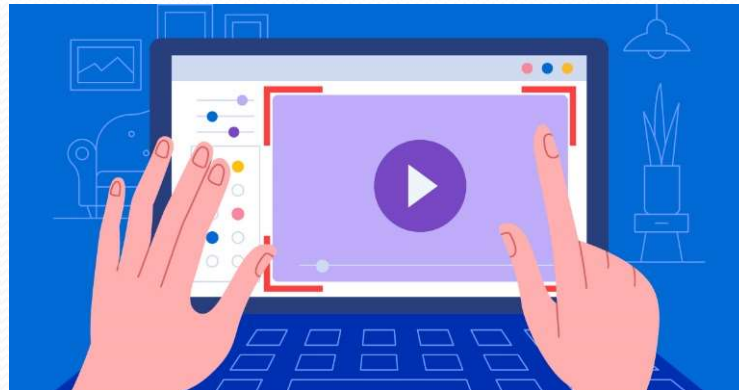   - POP3
        - LDAP

Scoping the Problem

- Key items to gather (cont'd)
  - Has anything changed?
    - Operating system
    - Domino version
    - Notes version
    - Applications
    - Network
    - Firewall

Scoping the Problem

- Key items to gather
  - Screen captures and videos are your friends!

  - Screen share session with affected user (avoid the middleman)

  - Is it reproducible?
    - What are the steps needed to reproduce?

Scoping the Problem

- <u>ALL of this</u> is important to understand "even if you don't think they have anything to do with the issue"

Scoping the Problem

- **Example** – User A of a Notes workflow application is not able to send auto-generated emails to User B
  - User A has been using the application since 2022
    - Assumption: User would have reported the issue sooner
  - When did the problem start?
    - Restated: When was the last time this worked?
    - The answer may just be that it never worked

Scoping the Problem

- **Example** (cont'd)
  - Screen capture of error sent
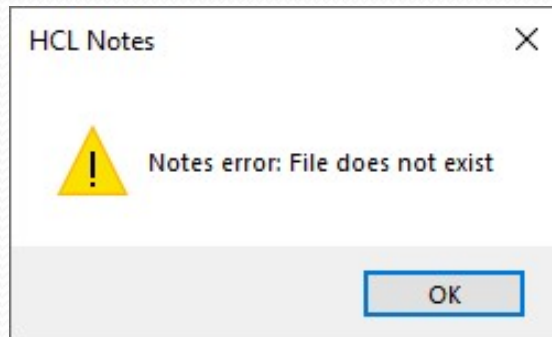
  - Ah, so an error is viewed in the Notes client
  - The resolution was found when searching through Forum comments – more on that later in our Troubleshooting section!

Scoping the Problem

- **Example** - Global business has offices in China, India, and the US
  - During certain times of the day, users in China and India can not connect to the server via Notes or Web Browser
    - Domino servers are hosted in US
    - Log review shows server is up during this time
  - Hosting provider suggested:
    - Setting tasks to run at different times during the night
    - China / India users run scripts to test connectivity
    - Assumption: "It's the great firewall of China"
      - Therefore, a network issue

Scoping the Problem

- **Example** (cont'd)
  - Key Item missed in scope - Does it happen in the US that time of the day?
    - This was missed because no one reported an issue at that location. Why would that be?
      - This was about 3 AM Central time
      - No one used their email at that time
    - We finally set our alarm clocks and tested at that time, and determined the issue also affected users in the US
      - Scope changed significantly!
  - Issue eventually found to be nightly jobs being performed in Data Center of the hosting company

Scoping the Problem

- **Example** – Issue happens randomly during the day, for a period of about 30 minutes
    - Users receive delivery failures for emails sent externally
    - Users receive incoming emails with .EML attachments rather than being properly formatted

Scoping the Problem

- **Example** (cont'd)
  - When does the issue occur?
    - Initially, the time of the issue was determined by the time of calls to the Support Desk
      - To determine exact times, reviewed the log.nsf around the reported time
        - Found message "File Cannot Be Created" during these times
        - Searched log.nsf for the error
    - What else is happening when issue occurs?
      - Found the client was also having issues with backups around these times.
        - Correlating the exact time of the errors in the log with the time of the backups helped narrow down the issue.

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Enable Logging BEFORE Problems Happen

- Core debug that needs to always be in place
  - Semaphore debug to have enabled
    - DEBUG_THREADID=1
      - Helpful to identify process or thread holding a semaphore
    - DEBUG_CAPTURE_TIMEOUT=1
    - DEBUG_SHOW_TIMEOUT=1
    - DEBUG_SEM_TIMEOUT=X
      - Used to specify how long a semaphore must timeout before being reported

Enable Logging BEFORE Problems Happen

- Deletion logging
  - Very helpful in determining "who/what" did the deleting
  - **Example** – documents missing in shared database
    - Invoices sent to a mail-in database
    - External process "POPs" messages from the database
    - Multiple Notes client users of the database
    - Messages have gone missing
    - Enabled Deletion Logging
      - Quickly identified user who was HARD deleting documents from Trash

```
"SERVER","CN=          /O=       ","HARD","0001","9F202F63:32A3CABEAF6CCA55:5BCD9842","From","26"
"SERVER","CN=          /O=       ","HARD","0001","A3EC665E:2172795039705A32:9658A25C","From","51"
"SERVER","CN=          /O=       ","HARD","0001","414391E2:F9B428AF9187AC53:1899A7B1","From","38"
"SERVER","CN=          /O=       ","HARD","0001","18072B95:3B5CEC9DF2FC0ED2:2F8427A1","From","38"
"SERVER","CN=          /O=       ","HARD","0001","424CF626:A92DF19681BE4E25:63E51410","From","36"
"SERVER","CN=          /O=       ","HARD","0001","AA97AE2A:92F4D0D0C026E600:EBAC8830","From","72"
"SERVER","CN=          /O=       ","HARD","0001","02EA7CD3:76F3038DF1A6196C:AA4CD915","From","52"
"SERVER","CN=          /O=       ","HARD","0001","98A9DD7F:3A8D5E9286258A53:0067694A","From","22"
"SERVER","CN=          /O=       ","HARD","0001","C3546D22:9D0B628E07BBFDA3:631D483A","From","41"
"SERVER","CN=          /O=       ","HARD","0001","F7CC7CD0:7D10A74A3B2AE072:596777D8","From","46"
```

Data to Collect on a Regular Basis

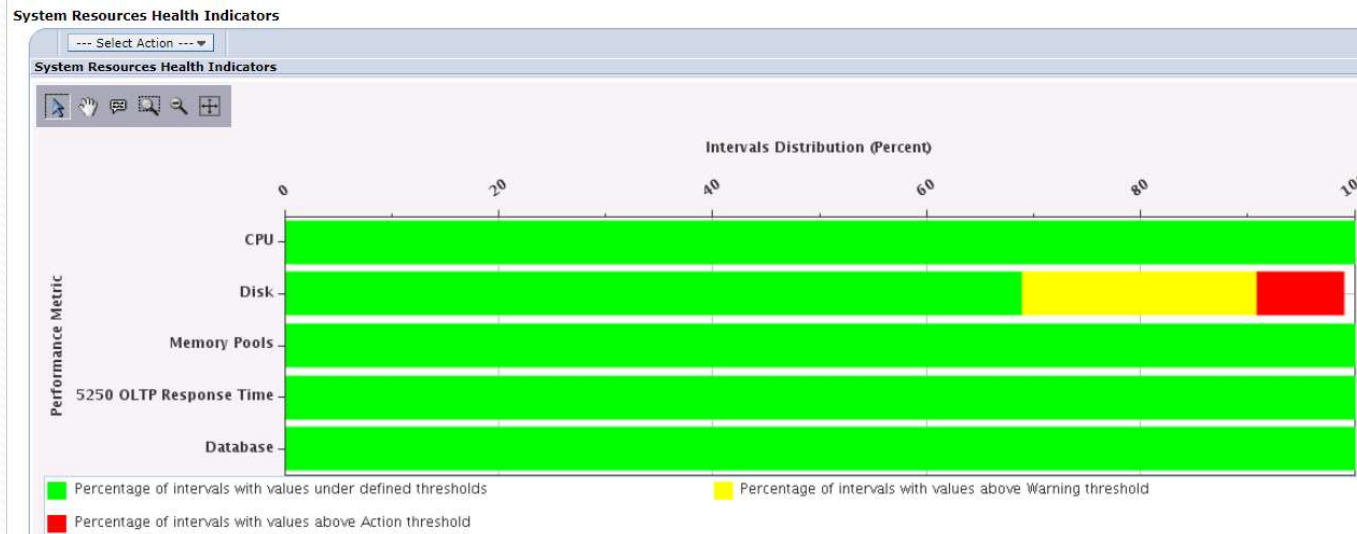- Statistics
  - Gather statistics for system as a whole
  - Capture statistics on:
    - CPU
    - Memory
    - Disk I/O
    - Network I/O
  - Some examples
    - Perfmon
    - Perfpmr
    - nmon
    - vmstat
    - Collection Services
    - iostat
    - netstat

Data to Collect on a Regular Basis

- Statistics – **Example** - Collection Services

Data to Collect on a Regular Basis

- Activity logging
  - Records user activity by:
    - Person
    - Database
    - Access protocol
  - Great for debugging performance slowdowns and CPU spikes
    - Specific application or protocol caused CPU spike or performance slowdown
    - Spike in user activity is cause of CPU spike or performance slowdown

Data to Collect on a Regular Basis

- Message Tracking
  - Tracking of email messages passing through a Domino server
  - Use to determine what happened to a message
    - Was it delivered, read, deleted?
    - When did it arrive?
    - Etc.

  - Easy to Configure:
    - Configuration Settings -> Router/SMTP -> Message Tracking
    - Restart the ROUTER task

Enable Logging BEFORE Problems Happen

- Where are application errors / log events written to?
  - Console
    - Check console log sizes to reduce change of wrapping
      - Console_log_max_kbytes=300000
    - Mirroring logs
      - Console_Log_Mirror=1
  - Separate logging database
    - Makes problem analysis <u>much</u> more efficient
    - *More details provided in the Troubleshooting Essentials section*
  - Agent logs
    - It's not just about logging, but what "not" to log
    - *More details provided in the Troubleshooting Essentials section*

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Troubleshooting Essentials

- Breathe
  - Don't panic!
- Don't hide embarrassing data
  - Can significantly delay problem resolution
  - Remember, they've seen it all
    - Like going to the doctor

Troubleshooting Essentials

- Be methodical in approach
  - Don't Forget the basics – some issues ARE simple
    - **Example** - MarvelClient
      - Customer utilizes panagenda MarvelClient to push Connection documents to users
      - New Notes client installations not receiving Connection documents
      - Review of MarvelClient configuration shows should be working
        - … however the license had expired

Troubleshooting Essentials

- Listen to your intuition
  - **Example** – application issues
    - When reviewing applications, often drawn to particular part of design
    - Usually that is where the issue is occurring
  - **Example** – customer said it was the SAN, my intuition said it was the network
    - Customer had intermittent performance issue on their mail server
    - Mail server used a SAN
    - Mail server was "supposed" to have a 10 GB connection to the SAN
    - VM where Domino server was controlled had multiple NIC cards
    - Most NIC cards were 1 GB, only 2 were 10 GB
    - App running on VM controlled security cameras
    - Host was configured to use a round robin policy

Troubleshooting Essentials

- Finger pointing doesn't help
  - Favorite 'finger pointing' conclusion:
    - 'It Must be the Network'
      - *Warning: The above only works if you are not also the 'Network Person'*

- Rule out everything you can, it's not hot potato
  - Focus should be solving the problem

Troubleshooting Essentials

- Check for common solutions
  - Google
    - Include "HCL Domino" or "HCL Notes"
    - Use exact error message
  - Search your internal KB
    - What, you don't have one? You need one!
    - **Example** - Notes Client issue
      - User reports getting error when opening Notes that client "configuration hasn't been fully setup"
      - HelpDesk support personnel just installed the Notes client
      - They didn't follow their documentation on setting up/configuring the Notes client for the user

Troubleshooting Essentials

- Check for existing solutions
  - Search HCL KB articles
    - Tip: "open" a Case with the error message shows documents that aren't "googleable"

- **Example** - "File does not exist"

Troubleshooting Essentials

- Run maintenance on impacted databases
  - Why?
    - Corruption problems can quickly be remedied
    - HCL Support will ask you to run these

Troubleshooting Essentials

- Run maintenance on impacted databases
  - How?
    - **load fixup -F path\filename.nsf**
      - NOTE: Add -J if Transactional Logging is enabled on the server
    - **load compact –c –i –d path\filename.nsf**
      - Copy style compact won't complete if anything accesses the DB
    - **load updall –R path\filename.nsf**

  - *Tip: Include the results of the maintenance in your documentation*

Reviewing Logs

- Key to know specifics on dates and times problem happened/happens
  - Particularly important when reviewing logs from different systems (a.k.a. non-Domino)
    - **Example** – "File cannot be created" error seen in log.nsf when users are unable to send external emails
      - Gathered times of the occurrences
        - Used 3rd party tool consoleEZ to search log for the error
        - Once we had the times, we were able to correlate the errors to the time of the start of the backups

Reviewing Logs

- Check appropriate logs
  - Domino
  - Notes
  - XPages
  - HTTP
  - Agent
  - …

Reviewing Logs

- XPages
  - These files are in the data\domino\workspace\logs directory on the Domino server or Notes client
    - error-logs and trace-logs
  - Content of files help locate what XPage is causing the issue, but the errors often help point to the portion of the XPage to look closer at for the issue
    - For example, any Java errors will include class having the issue and that allows you to just look at the parts using that particular class

Reviewing Logs

- XPages Error-log

  - <CommonBaseEvent creationTime="2024-01-09T16:01:03.678-05:00" globalInstanceId="EL0a866a8700018cefcdcb0800000006" msg="CLFAD0134E: Exception processing XPage request" severity="50" version="1.0.1">
        <extendedDataElements name="CommonBaseEventLogRecord:level" type="noValue">   <children name="CommonBaseEventLogRecord:name" type="string">
        <values>SEVERE</values>   </children>
        </extendedDataElements>   <extendedDataElements name="CommonBaseEventLogRecord:sourceClassName" type="string">
        <values>com.ibm.commons.log.AbstractLogMgr</values>
        </extendedDataElements>   <extendedDataElements name="CommonBaseEventLogRecord:sourceMethodName" type="string">
        <values>log</values>   </extendedDataElements>
        <extendedDataElements name="CommonBaseEventLogRecord:Exception" type="string">
        <values>com.ibm.xsp.exception.EvaluationExceptionEx: Error while executing JavaScript action expression
	at com.ibm.xsp.binding.javascript.JavaScriptMethodBinding.invoke(JavaScriptMethodBinding.java:126)
	at

Reviewing Logs

- HTTP logs
  - **Example:**
    - Customer reports emails being sent from the VP of HRs email, BUT …
      - Emails were not sent from the VP
    - Domlog.nsf shows first login request 11/30/2016 at 1:26 AM
      - VP doesn't use webmail
    - First login shows successful login, password was known
    - How did it happen?
      - VP of HR used mobile device at coffee shop the day prior
      - SSL was not implemented (yet) on Traveler server

Reviewing Logs

- Agent Logs
  - Print statements are a common debug method, BUT …
    - Often left behind and fills up the console.log
    - Caution: Often contains sensitive data!!

    - *Tip: Create a Boolean debug value and use it to control if the print statement should be printed.*
      - If not actively debugging set it to False

```
Sub Initialize
    Dim debug As Boolean

    debug = True ' set to False to disable debug
' some LS code
    If debug Then
      Print "At Place 1 "
    End If
End Sub
```

Reviewing Logs
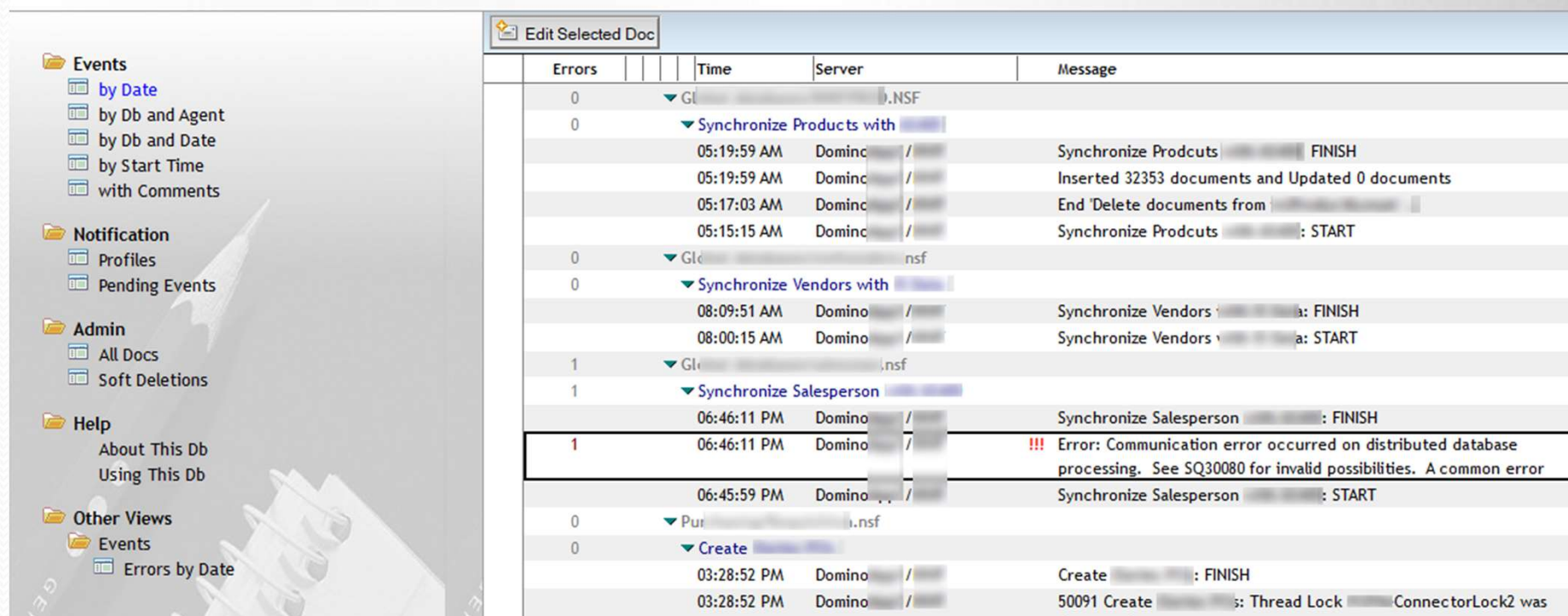
- Agent Logs (cont'd)
  - Tip 1: Use the NoteLog LotusScript method to debug
    - Write debug to an email, a text file or a Notes database
    - Keeps the console clean, allows you to look at just the data you need
    - https://help.hcltechsw.com/dom_designer/12.0.2/basic/H_NOTESLOG_CLASS.html
  - Tip 2: Use OpenLog method to log and debug
    - OpenNTF project
    - Write errors and log messages to an OpenLog database
    - Works with LotusScript and Java agents
    - https://www.openntf.org/main.nsf/project.xsp?r=project/openlog

Reviewing Logs

- **Example** – OpenLog
  - Much easier than combing through console.log

Troubleshooting Agent Issues

- Enable agent manager debug

  - **tell amgr debug ***

- Make sure to turn it off once the issue is resolved!

  - **tell amgr debug off**

- Pay attention to what the specific agent message(s) are

  - Are the messages coming from:

    - AMgr

    - Agent Manager

    - Agent Message

Troubleshooting Agent Issues

- Understanding "**AMgr:**" messages
  - Come from an external process
  - Control of agent has been turned over to another process
    - Lotus Connector example
      - AMgr: Agent ('TSCompanyUpdate' in 'corpwrk.nsf') message box: Rate Lotus Connector Error 12809 on line 69 Error: Invalid field
    - SQL Connector example
      - AMgr: Agent ('Assigned Reports' in 'ExternalBus.nsf') message box: ExternalBus.nsf => CommonFunctions_SL => AssignedReport Error 91 on line 137 Object variable not set

Troubleshooting Agent Issues

- Understanding "**Agent Manager:**" messages
  - Come from the agent manager itself
    - Examples:
      - Agent Manager: Error validating execution rights for agent 'Access OS' in database 'Pauls.nsf'. Agent signer 'Test User7/HCL', effective user 'Test User7/HCL'. Examine 'Programmability Restrictions' field in the Server Record.

      - Agent Manager: 'RunSourceAgent' in database 'helpdesk/people.nsf'. Agent signer 'Ray Ozzie/IRIS', effective user 'Ray Ozzie/IRIS'. Agent signer, 'Ray Ozzie/IRIS', does not have access to this server.

      - Agent Manager: Agent 'Access OS2' error: Operation is disallowed in this session

Troubleshooting Agent Issues

- Understanding "**Agent message:**" messages
  - Come from the agent
  - If in LS code where manipulating forms, views, etc., will come from the agent itself
    - Example:
      - Agent message: CheckPassword => ProfileAudit Error Handler: No logs open on line 79

  - *Tip: Use the LS debugger*
    - Can the LS code be run manually from the client?
      - If so, enable LS debugger from the Tools menu in the client and hit continue until the error occurs.
      - Line throwing the error is the line highlighted in the debugger.

Troubleshooting Performance Issues

- Views
  - Limit the number of sorted or categorized columns
  - Use hidden views sorted by a single column for look ups
  - Use Manual refresh setting in view where possible
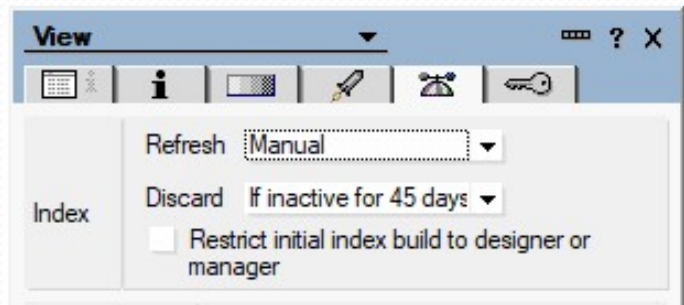
- Number of documents
  - Can we archive or move documents to different database?

Key Also to Review These Logs

- Firewall logs

- Operating System logs

- Other environments and applications connect to

  - DB2

  - Other servers

- Activity logging

- Message tracking

Key Also to Review These Logs

- Firewall logs
  - **Example:**
    - Users experiencing significant sync delays to mobile devices weeks after moved to Traveler HA
    - All Traveler servers in the pool have Green status
    - All Traveler servers can ping each other
    - Firewall updates made, blocking IPC ports 50125 and 50126

Key Also to Review These Logs

- Operating system logs
  - **Example:**
    - Users reporting very slow response times accessing mail server
    - Nothing out of ordinary in console logs
    - Port trace to server seems fine
    - Reviewing OS logs, see backup from Saturday in an Event Wait state
    - Review of backup logs revealed the problem
      - End of volume reach on tape drive
    - Backups had core Domino files locked, dramatically impacting performance

Key Also to Review These Logs

- Other environments and applications connect to
  - DB2
  - Other servers
  - **Example** - OpenLog - DB2 errors

Key Also to Review These Logs

- Other environments and applications connect to
  - **Example** - OpenLog – DB2 error details

Logged Event

Event Type:	Error			User Name		Client Version
Event Time:	01/12/2024 06:24:50 PM			Effective Name		Release 12.0.2 November 03, 2022 Build 475
Start Time:	01/12/2024 06:24:50 PM			Access Level	6: Manager	
Severity:	2			Database Roles	[Admin], [ ], [ ], [ ], [ ], [ ]	

Error Num	12325	Error Msg	Error: Attributes of parameter 69 not valid for procedure or function in ., Connector 'db2', Method -Execute-	Server	Domino. /
Error Line	1950	Language	LotusScript	Database	.nsf
Stack Trace INITIALIZE,1950				Agent	Create
				Method	INITIALIZE

Create   - ERROR 12325: Error: Attributes of parameter 69 not valid for procedure or function   in   ., Connector 'db2', Method -Execute- , line 1950
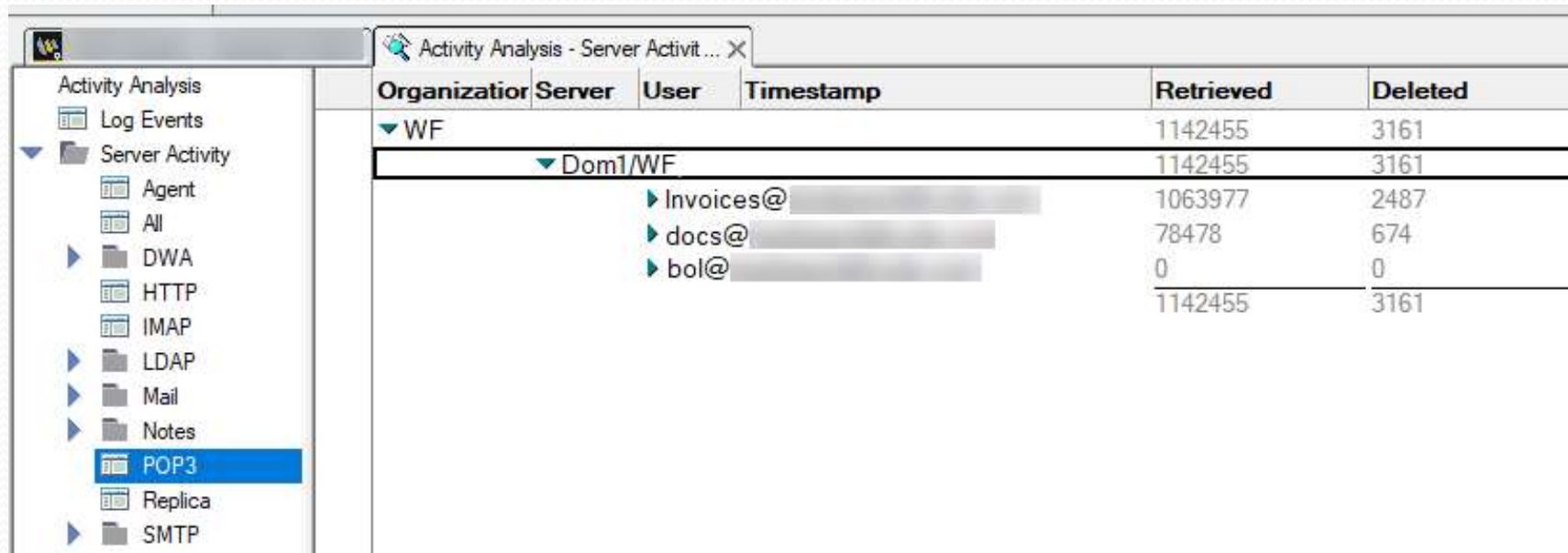
Creation Date = 01/12/2024 06:24:49 PM   NotificationSent =
Created By =

Key Also to Review These Logs

- Activity Logging
  - **Example** - Want to disable POP3 on port 110 and only allow Secure POP3 over port 995
    - Want to proactively help users change their settings
    - But who is using POP3?

- Need to activate Activity Logging
  - Tools -> Analyze -> Activity
    - Select POP3
    - Below we see the 3 users who have used POP3 in the selected time range

Key Also to Review These Logs

- **Message tracking**
  - To Use: In Domino Administrator client
    - Messaging -> Tracking Center -> New Tracking Request
    - *Note: The data reindexes periodically (15 min by default) so don't be surprised if your recent emails are not shown*

- **Great for finding the delivery status of emails**
  - **Example** – User reporting they did not receive an email

Troubleshooting Essentials

- Look for what lead up to the issue
  - **Example** – Searches are slower
    - Customer has custom written tool that searches and removes malicious emails from users' mail files
    - Customer reports searches are slower than they used to be
    - No errors in the application
    - Nothing found in console logs
    - No performance issues found with hosting system
    - Analysis of search results reveals searches have been slower since September 23
    - Server was upgraded on September 22

Troubleshooting Essentials

- Complete analysis BEFORE making changes!!!
  - Absolutely essential

- Change one thing at a time!!
  - Otherwise, what fixed it??

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Documenting

- Document EVERYTHING!!!
  - Screen captures
  - Dates/time stamps
  - Detailed log of what you:
    - Have found
    - Have done
    - Any changes made
      - When
      - By whom
      - The reason the change was made

Documenting

Documenting

- Start right away!
  - You WILL forget
  - Even if it "may" not seem relevant, include it
  - Remember, ~~everyone is panicking~~ people are probably stressed

- Your documentation will become a formal or informal knowledge base
  - At least parts of it
    - Not all your notes are needed in the documentation for others – edit out the OMGs ☺

Documenting

- Notes.ini updates
  - Document who, when, why
  - **Example** of notes.ini updates:

```
; Kim Greene changed NSF buffer pool from 300 MB to 750 MB on 3/19/2019 to improve performance
NSF_Buffer_Pool_Size_MB=750

; Added by Kim Greene on Nov 19 2020 for running DAOS Estimator to collect data with better bucket sizes
DAOSEST_BUCKETS=16,32,64,128,256,512,1024,2048,3072,4096

; Kim Greene changed from =3 to =1 on Nov 27 2015 as no longer needed in the environment
log_replication=1

; Added by Kim Greene on Nov 27 2015 to preserve any ServerTasksAt customizations when upgrading the server
SetupLeaveServerTask=1

; Kim Greene commented out Debug_Agent_Thread=4 on May 29 2020 with installation of hotfix QL605723
; Kim Greene removed the comment so Debug_Agent_Thread=4 is enabled when revertig back to QL605723 on June 3 2020
; Kim Greene leaving set to 4 on Nov 29 2020 when installing hotfix Q1605734
Debug_Agent_Thread=4

; Kim Greene added May 11 2023 to workaround insufficient disk space issue when creating replicas via AdminP
ADMINP_DISABLE_DISK_SPACE_CHECK=1
```

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Communicating

- Communicating what is going on and what to expect is key!
    - Frequency
    - Messaging (change for different audiences …)

- Communicate to:
    - Stake holders
    - Business users
    - Support desk
    - Affected User(s)

- **Example** - emails to the organization
    - This is a known issue, projected time to fix is 1 hour
    - *Tip: Send another email once problem is resolved*

Communicating

- Communication needs to be
    - Open
    - Honest
    - Ongoing

- Pick up the phone or do a screen share!!
    - Call the "customer" / "end user" / "affected person"
    - Need to know what the 'end user' is seeing
        - And most importantly, what the end user is 'doing'

Communicating

- Avoid assumptions
    - Can cause important information to be overlooked
    - Before you "assume" try this crazy method called "asking"
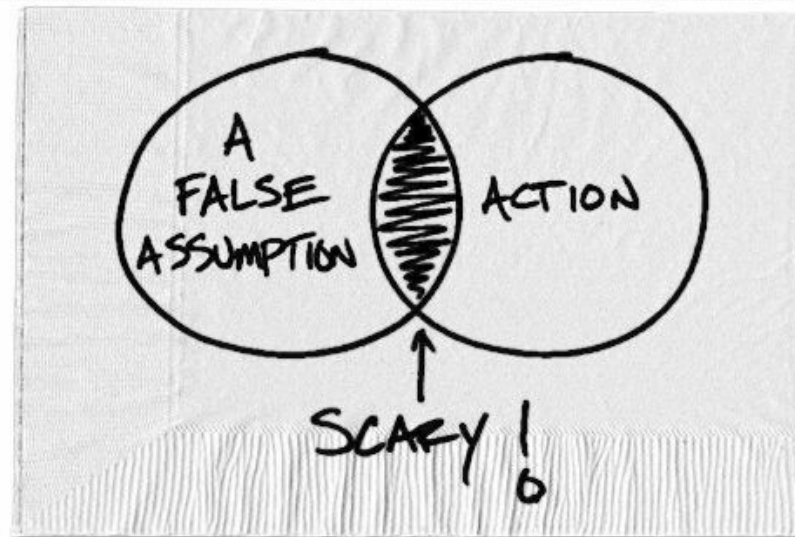
Communicating

- Ask questions
    - Don't just accept what have been told
    - If something doesn't make sense, get clarification
    - Use open ended questions, not just 'yes' and 'no'
    - Key in on 'pauses' … make them talk!

Communicating

- "Everybody lies"
  - Intentionally or not
    - We are imperfect beings
      - Don't take what you are told as fact, you will need to verify
  - **Example**
    - "It is happening constantly"
      - In reality the issue happened whenever they restarted Notes

- How to get people to "talk"
  - "I apologize I didn't make it more clear / tell you about /…"
  - "Help me understand …"

Agenda

- There's a Problem, Now What?!?
- Scoping the Problem
- Enabling Debug and Logging
- Troubleshooting Essentials
- Documenting
- Communicating
- **Working with HCL Support and/or Business Partner/Consultant**
- Resolving the Issue
- Accelerating troubleshooting with 3rd Party Tools
- Q&A

Bringing in Outside Help

- You've taken it as far as you can, now what?
    - Open a Case with HCL Support
    - Bring in your Business Partner or consultant

- If it's a bug in Notes/Domino/XPages, ... code
    - Need HCL to fix
    - Or find a way to workaround the problem

Bringing in Outside Help

- **Example** - Workaround
  - Server crashing with "*PANIC: TLA pointer is null! Has this thread called OSInitThread()?*" running specific Java agent after upgrade to 12.0.2
    - Java agent line causing crash: *private static ResourceBundle.getBundle("config", java.util.Locale.getDefault());*
      - Prior to Domino 12, HCL never set a Java default
        - config.properties attached to agent was utilized
      - Starting in version 12, HCL sets a Java default
        - config.properties file referenced is now config_en_US.properties
    - Workaround:
    - Change agent to use this line of code:
      - *private static ResourceBundle keyConfig = ResourceBundle.getBundle("config");*

Bringing in Outside Help

- Tip: Provide as much detail as possible
  - Remember that you …
    - Live and breathe in your environment every day
    - Know the history of your environment
    - Know what has changed / stayed the same
    - Etc …

Working with HCL Support

- Proper preparation before opening a Case
  - Collect as much detail as possible
    - Helps with quicker resolution
    - Allows HCL to research the problem more thoroughly
  - If know DB causing the issue
    - Run maintenance on it
  - Detail what have done so far
    - Be very specific

Working with HCL Support

- Tips for working a case with support
  - Be open and honest
    - We don't care who caused the issue or what you tell your boss, we are just trying to resolve the problem
  - If you do not understand why support is asking you to do something, ask questions
  - Keep communication open
    - If you will not be able to perform a test for a while, let us know and we can follow up accordingly

What HCL Will Ask For

- Expect to be asked to run some form of the following commands after opening a case:
  - On your Administrator client > Server > Server Console
  - Issue the following commands: (wait for each one to finish before going to the next command)
    - load fixup fixup -F -J mail\sample.nsf (-F if transactional logging is enabled)
    - load compact -c -D -i mail\sample.nsf
    - load updall -R mail\sample.nsf
  - Same commands we recommended previously
    - Run them ahead of time, post to case when opening and save some time
  - *Tip: you should have this in your documentation, if so, can just upload to the case*
    - Again, save some time

What HCL Will Ask For

- For issues affecting the server
  - Console log files
- Server and Notes client crashes
  - NSD files
  - Console log files
  - Semaphore debug files
  - Java Heap dump if one is created as part of the crash (.php file)
- XPages or Domino LEAP issues
  - Error and trace files
- Errors in custom applications
  - Simplified reproducible scenario
  - Non-encrypted design only copy of application
  - Details on name of view, agent, form, … having issues with

What HCL Will Ask For

- Where do I find the files?
  - Server files:
    - Domino\Data\IBM_TECHNICAL_SUPPORT directory
  - Notes client files:
    - Notes\Data\IBM_TECHNICAL_SUPPORT directory
  - XPages or Domino LEAP:
    - Domino\Data\Domino\workspace\logs directory

- What is their naming convention?
  - console.log, console_DomMail_2023_10_04@04_53_42.log, …
  - console_DESKTOP-CS8B1S4_2023_11_09@22_11_10.log, …
  - nsd_07_19_21@12_06_20.nsd, …
  - SEMDEBUG.TXT, SEMDEBUG_DomMail_2023_08_01@04_37_22.TXT
  - HeapDump_20241126.105324.45640.0001.phd
  - trace-log-0.xml, …
  - error-log-0.xml, …

Working with HCL Support

- Lessons Learned
  - HCL Ambassadors
    - Remember to use your template when opening Cases

  - Summarize information as Case progresses
    - <u>Very</u> helpful to make sure key information isn't forgotten or "buried"

  - Ask for a screen sharing session to ensure the issue is understood

Working with HCL Support

- Lessons Learned (cont'd)
    - Sometimes you get a new L2
        - We were all new once (some of us haven't been for a while)
        - Be Patient
            - But not to the detriment of the resolution

    - If a Case is not getting traction, you can:
        - Raise the priority of the case
        - Request a Duty Manager be assigned to review
        - Request an escalation of the case

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- Accelerating troubleshooting with 3rd Party Tools
- Q&A

Resolving the Issue

- Once cause is identified, apply appropriate fix
  - Might involve repairing, replacing, updating or configuring new hardware or software

- Test and Confirm
  - Make sure the problem is resolved and the solution is effective

- Remove any extra debug or logging

Resolving the Issue

- Update Documentation
  - Record the problem and solution for future reference

- Follow up with the affected person(s)
  - Contact them directly - as support people, when do we get to talk to someone and deliver GOOD news?

- Remember:
  - If you have a Support Case open with HCL, update it

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Accelerating Troubleshooting - 3ʳᵈ Party Tools

- Free or low cost tools
  - MarvelClient Essentials
    - https://help.hcltechsw.com/domino/12.0.2/admin/plan_marvel_client.html
    - https://www.panagenda.com/kbase/display/mc/MarvelClient+Essentials
  - EBCDIC to ASCII converter
    - UltraEdit
      - https://www.ultraedit.com/downloads/ultraedit-download-thank-you/
  - Lotus Notes Diagnostic
    - Also converts EBCDIC to ASCII
    - https://lotus-notes-diagnostic.software.informer.com

Accelerating Troubleshooting - 3rd Party Tools

- Free or low cost tools
  - KillNotes
    - https://download.cnet.com/killnotes/3000-2094_4-75905088.html
  - NotesPeek
    - https://support.hcltechsw.com/csm?id=kb_article&sysparm_article=KB0036425
    - 64-bit version for Domino 14 is available on Flexnet
  - NSFPEEK
    - https://www.opennt.org/main.nsf/project.xsp?r=project/NSFPeek

Accelerating Troubleshooting - 3rd Party Tools

- Free or low cost tools
  - All-in-one admin tool
    - https://support.hcltechsw.com/csm?id=kb_article&sysparm_article=KB0032494
  - Wireshark
    - https://www.wireshark.org/download.html
    - Configuring Wireshark to troubleshoot performance issues
      - https://support.hcltechsw.com/csm?id=kb_article&sysparm_article=KB0097503

Accelerating Troubleshooting - 3rd Party Tools

- Other tools we can recommend
  - Ytria EZ Suite
    - Administration and Development tool sets
    - Free functionality provided in each tool
    - https://www.ytria.com/ezsuite/
  - MarvelClient
    - Essentials is included in your subscription, additional modules allow for automation of more features and functionality
    - https://www.panagenda.com/kbase/display/mc/About+panagenda+MarvelClient

- We use these tools daily with our customers who are licensed to use them
  - Why?
    - Saves $$$ in consulting expenses
    - Ease and accuracy of automation
    - Ability to dig deep into problems
    - More accurate

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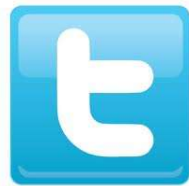- Accelerating troubleshooting with 3rd Party Tools
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Questions?

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