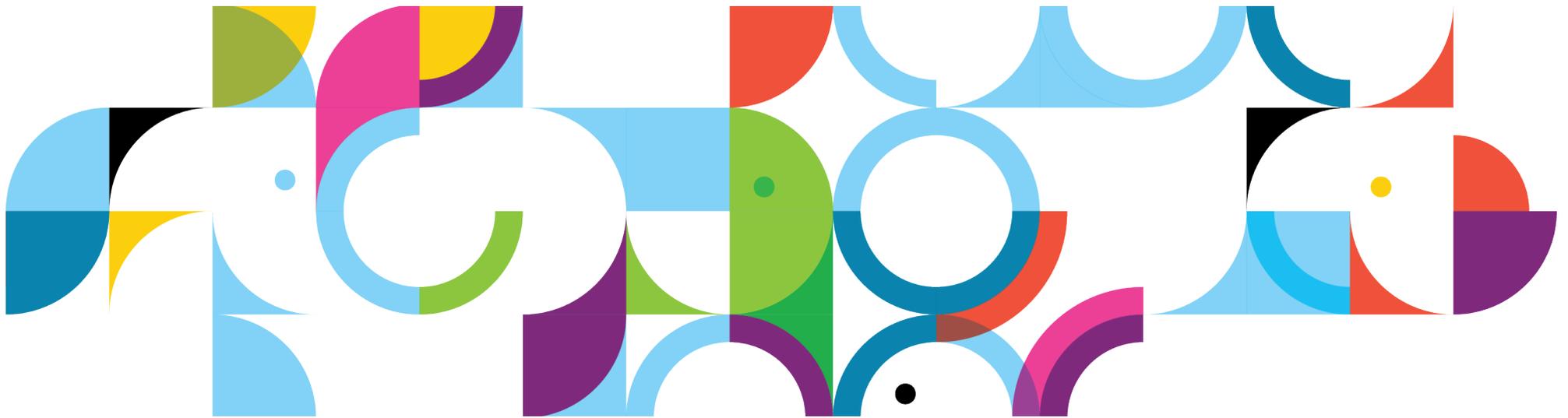


Open Mic on

IBM Notes Traveler Best Practices

Date: 11 July, 2013





Open Mic Team



- Jayesh Parmar - IBM ICS Support engineer
- Presenter



- Shrikant Ahire - IBM ICS Support engineer
- Presenter



- Ranjit Rai - IBM ICS SWAT
- Focussing on entire Notes/Domino



- Jayavel Rajendran - IBM ICS SWAT
- Focussing on entire Notes/Domino



- Hansraj Mali - IBM ICS SWAT
- Focussing on Notes/Domino



- Vinayak Tavargeri – IBM ICS Support
- Facilitator for Open Mics



Agenda Items

- Basic Traveler commands
- Monitoring Notes Traveler Server
- Traveler command in depth
- Fine Tuning the Notes Traveler server
- Notes Traveler performance issues on VM
- Tips
- Data to gather in case of problem
- Reference



Basic Traveler Commands:

Load traveler To start the Notes Traveler server task

Tell Traveler Shutdown Stops the server from accepting new work requests, allows current work to complete, and then quits.

Tell Traveler Quit The shutdown command waits for any pending syncs to complete and then quits. The quit command does not wait for any pending syncs to complete and quits in a much shorter amount of time. The default quit time for shutdown is 300 seconds, and 40 seconds for quit. You can override the default shutdown and quit time by setting the notes.ini parameters *NTS_MAINTASK_SHUTDOWN_WAIT_TIME* and *NTS_MAINTASK_QUIT_WAIT_TIME*. The values are in seconds

Restart Task Traveler To restart the Notes Traveler task

Tell Traveler Help Displays Help topics

Tell Traveler Version Displays the version information for the IBM Notes Traveler server.

Tell Traveler Active Displays the users who are currently synchronizing with the server.

Tell Traveler Users

Displays the users allocated on the server. This is useful in an HA environment for understanding how users are spread over the various HA servers. This is not a specific HA command.

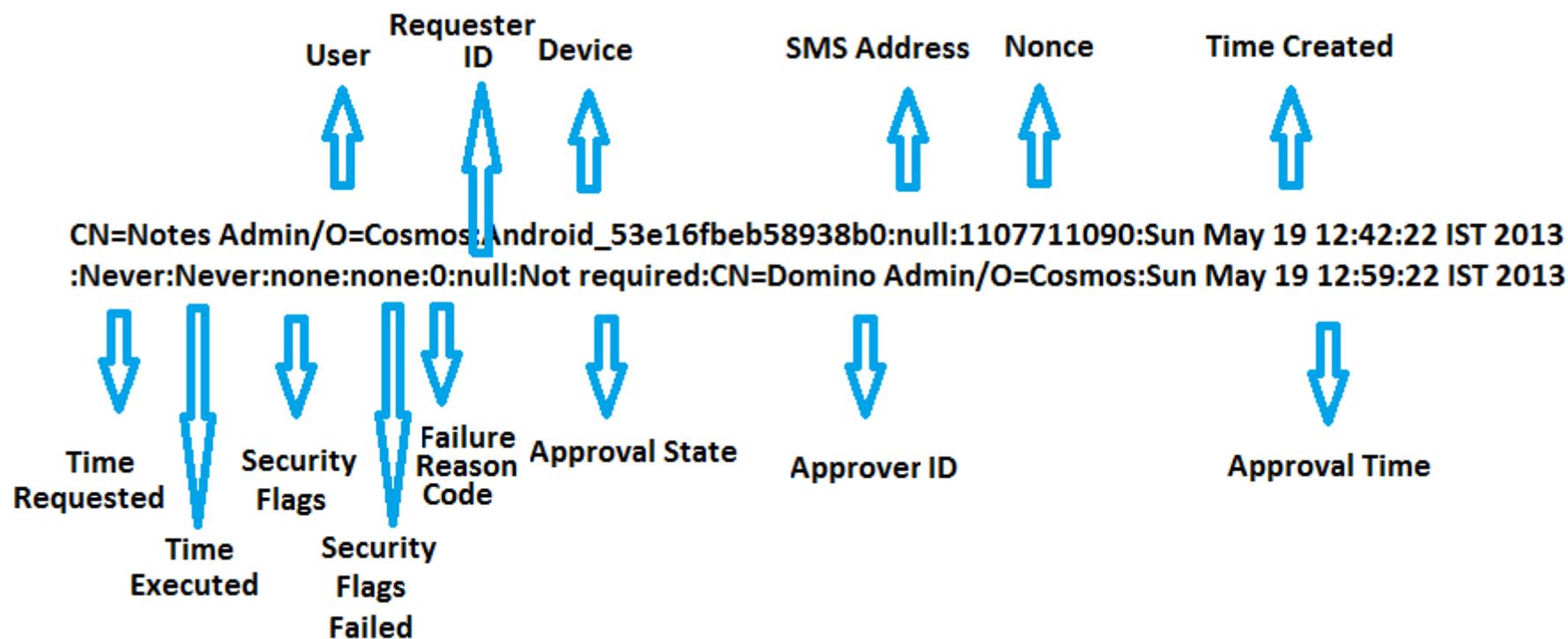


Basic Traveler Commands:

Tell Traveler Security AllStatus Displays status of all users and devices
Tell Traveler Security status user Displays status of user and devices owned

Security Record Store (Sun Jul 07 19:57:57 IST 2013)

Record Count (Sun Jul 07 19:57:57 IST 2013): 1 → [Total Record Count](#)





Basic Traveler Commands:

Tell Traveler Stat Clear Clears the IBM Notes Traveler server statistics

Tell Traveler Threads Display server thread pools and thread information

Tell Traveler Security Delete device user Removes the device

Tell Traveler Reset device user Forces a sync reset for a device

Tell Traveler Delete device user Deletes all data associated with the specified user, including all device profiles

Tell Traveler Mailreplicas show user Shows current mail replica information being used by IBM Notes Traveler for the user

Tell Traveler dump user Dumps the information about the specified user to a file

Reference:

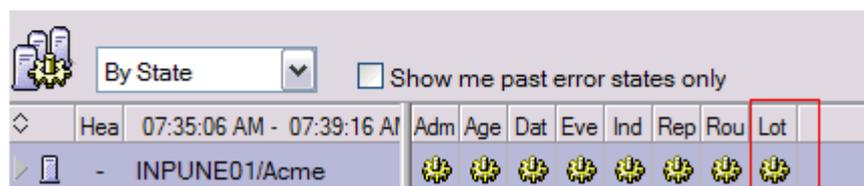
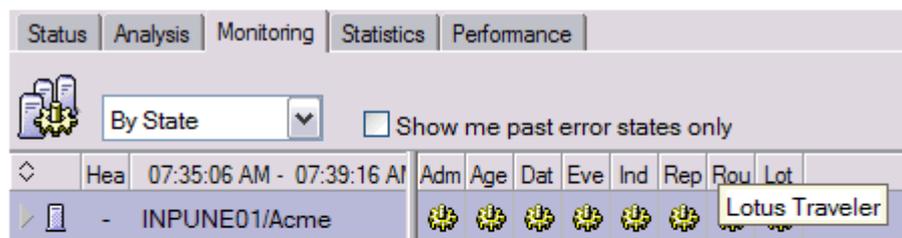
[http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?](http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Console_commands_A9&content=pdcontent)

[lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Console_commands_A9&content=pdcontent](http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Console_commands_A9&content=pdcontent)



Monitoring Notes Traveler Server:

- In Notes Traveler version older than 9.0, Notes Traveler task can be monitored using the Domino Administrator client by modifying the domadmin.nsf on the local machine.
- Detailed step of how to add traveler task to monitoring window is mentioned in the reference URL



“*Show Task*” command on server console will reveal whether Notes Traveler task is up and running

```
[2640:0006-26F4] HTTP Server Listen for connect requests on TCP Port:80
[2640:0006-26F4] Notes Traveler Running: 0 of 2 users active. Completed
0 device and 0 prime syncs.
[2640:0006-26F4] Process Monitor Idle
```

Reference : <https://www-304.ibm.com/support/docview.wss?uid=swg21568938>



Monitoring Notes Traveler Server (continued..)

To determine if Notes Traveler Server is operating normally, and reports the results of the check to the administrator.

“Tell traveler stat show”

The command *"tell traveler stat show"* will give information about the statistics that Notes Traveler maintains.

A Domino program document can be used to establish regular output of Traveler server statistics and usage.

Program: **nserver**

Basics Administration

Basics	Schedule
Program name: <input type="text" value="nserver"/>	Enabled/disabled: <input type="text" value="Enabled"/>
Command line: <input show\""="" stat="" tell="" traveler="" type="text" value="-c \"/>	Run at times: <input type="text" value="every day"/>
Server to run on: <input type="text" value="<server>"/>	Repeat interval of: <input type="text" value="10 minutes"/>
Comments: <input type="text" value=""/>	Days of week: <input type="text" value="Sun, Mon, Tue, Wed, Thu, Fri, Sat"/>

Reference : <http://www-01.ibm.com/support/docview.wss?uid=swg21613598>



Monitoring Notes Traveler Server (continued..)

Indicator(s) to tell me the traveler server is in good health or otherwise?

“Tell traveler status”

- The status levels are:
 - Green** : No Issues
 - Yellow** : Possible issues that should be investigated
 - Red** : Critical issues that should be addressed
- The problem information for Yellow and Red status is incorporated in the command output.

Example (console o/p)

tell traveler status

[2714:0037-1C94] The IBM Notes Traveler task has been running since Tue Jun 25 20:36:30 IST 2013.

[2714:0037-1C94] The IBM Notes Traveler availability index is currently 100 while servicing 2 users.

[2714:0037-1C94] There have been no successful device syncs since IBM Notes Traveler was started.

[2714:0037-1C94] The overall status of IBM Notes Traveler is Green.

Green status indicates server performance is good.



Traveler Command in depth:

“Tell traveler status”

Performs checks to determine if Lotus Notes Traveler Server is operating normally, and reports the results of the check to the administrator.

Eg:

[0618:0009-03F8] tell traveler status

[0618:5BAA-0658] 05/23/2013 04:13:00 PM Remote console command issued by dominoadm/Acme: tell traveler status

[11C4:7AD8-A930] The Lotus Notes Traveler task has been running since Thu May 2 11:36:14 IST 2013.

[11C4:7AD8-A930] The last successful device sync was on Wed May22 16:12:49 IST 2013.

*[11C4:7AD8-A930] **Yellow Status Messages***

[11C4:7AD8-A930] The response times for opening databases on mail server CN=domino/O=Acme are above the acceptable threshold.

*[11C4:7AD8-A930] **Red Status Messages***

[11C4:7AD8-A930] The number of active HTTP connections is 145 percent of the 100 available HTTP threads.

[11C4:7AD8-A930] The peak number of HTTP connections is 239 percent of the 100 available HTTP threads.

[11C4:7AD8-A930] The overall status of Lotus Notes Traveler is Red.



Traveler Command in depth: (continued..)

Understanding Yellow and Red status messages

Response Time for opening DB & HTTP threads:

- **Console Message:** The response times for opening databases on mail server {mail server name} are above the acceptable threshold.
- **Corrective action:**
Check for network delays between the Lotus Notes Traveler server and mail server.
With help of ping utility sending large packets (ping -n 100 -l 8192 ipaddress -t)
With help of tracert utility in windows and traceroute in Linux
- **Console Message:** The number of active HTTP connections is {current percentage} percent of the available HTTP threads ({HTTP Threads}).
The peak number of HTTP connections is {peak percentage} percent of the available HTTP threads ({HTTP Threads}).
- **Corrective action:**
Increase the number of http threads
Move some of the users to another IBM Notes Traveler server.



Traveler Command in depth: (continued..)

503 Sync Error, Non-503 sync Error & DS or PS threads have run for a "long period" of time:

- **Console Message:** There have been {number of 503 RC} device sync failures because the server is too busy and returned status code 503.
- **Corrective action:** Either increase the memory, or move some of the users to another Lotus Notes Traveler server.

- **Console Message:** There have been {number of error code other than 503 RC} device sync failures for reasons other than the server is too busy.
- **Probable cause:** There are network connectivity issues between Lotus Notes Traveler server and the user's device(s).

- **Console Message:** User {name} on thread {name} has been running for {xx} minutes.
- **Corrective action:**
Persistent yellow conditions might indicate a slow mail server or an overloaded Traveler server. Monitor and look for other status conditions that might have a better indication of a diagnosis. Restart the Traveler service. There is a good chance this will require a complete Domino server restart and you may need to kill the Domino server in order for it to shutdown completely



Traveler Command in depth: (continued..)

Memory Usage, Disk Space & CPU Usage:

- **Console Message:** The current native memory usage is {current percentage} percent of the available memory.
- **Corrective actions:**
 - Verify whether too many HTTP Threads are allocated.
 - Reduce the number of applications running on the Domino server.
 - Reduce the number of IBM Notes Traveler users on the machines.
 - Issue *"tell traveler mem"* command to see the history of memory.
- **Console Message:** Disk space for {location} has {%} percent free.
- **Corrective action:**
 - Remove unneeded files to increase free disk space.
- **Console Message:** The Lotus Notes Traveler's CPU usage is {current percentage} percent over the last {minutes} minutes of processing.
- **Corrective actions:**
 - Reduce the number of applications running on the Domino server.
 - Reduce the number of Lotus Notes Traveler users on the machines.



Traveler Command in depth: (continued..)

Check/Threshold	Yellow	Red
Response time for opening DB	10%	5%
HTTP Current & Peak Connections	> 80%	> 90%
Device sync failures 503	> 5%	> 10%
Device sync failures non-503	> 5%	> 10%
Thread run time (minutes)	> 30 min	> 120 min
Current Memory (Native)	> 85%	> 95%
Disk Space	< 15%	< 5%
CPU Utilization	70%	90%

Reference:

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Status_commands_A9&content=pdcontent



Traveler Command in depth: (continued..)

“Tell traveler stat show”

- Displays the Lotus Notes Traveler server statistics.
- List of all the Traveler statistics that have been collected since the stats were last reset (the statistics are automatically reset each time the Traveler process is restarted).

CPU.Pct.<bucket>

Traveler checks the CPU usage on a periodic basis. This stat is a histogram showing how many times the CPU percentage was in the specified range or bucket. The bucket values are "000-010", "010-020", "020-030", "030-040", "040-050", "050-060", "060-070", "070-080", "080-090", "090-100".

Example, CPU.Pct.040-050 would show the number of times, CPU usage was between 40% and 50%

Other way to find the CPU utilization by traveler task:

*>Show stat platform.process.traveler**

[269C:0007-2350] Platform.Process.traveler.1.PctCpuUtil = 48

> show stat server.cpu.count

[269C:0007-2350] Server.CPU.Count = 4

= 48/4 ~ 12% CPU usage by traveler task



Traveler Command in depth: (continued..)

“Tell traveler stat show”

DCA.DB_OPEN.Time.Histogram.<server>.<bucket>

- Histogram of the time spent (in seconds) to open a database on the given server using the Domino Java API call.

Server is the name of the Domino server on which the database was opened. Buckets are "000-001", "001-002", "002-005", "005-010", "010-030", "030-060", "060-120", "120-Inf".

As an example,

DCA.DB_OPEN.Time.Histogram.CN=Domino1/O=Acme.005-010 = 216

DCA.DB_OPEN.Time.Histogram.CN=Domino1/O=Acme.060-120 = 7

DCA.DB_OPEN.Time.Histogram.CN=Domino1/O=Acme.120-Inf = 17

The above statistics would show the number of times the database on server Domino1/Acme was opened in respective time frames



Traveler Command in depth: (continued..)

“Tell traveler stat show”

Database.Query.Histogram.GudSelect.<bucket>

Histogram of the time spent (in seconds) to execute the lookup of a user against Traveler's internal database. A high number in the larger bucket indicates the need for a defrag.

As an Example,

```
[2758:5704-5358] Database.Query.Histogram.GudSelect.000-001 = 14390
[2758:5704-5358] Database.Query.Histogram.GudSelect.001-002 = 4
[2758:5704-5358] Database.Query.Histogram.GudSelect.002-005 = 2
```

Similar Information about the above statistics is covered in the Fine Tuning section of Database defragmentation



Traveler Command in depth: (continued..)

“Tell traveler stat show”

DeviceSync.Count stats

Above statistics is the number of device synchronization's that have finished with various return codes (DeviceSync.Count.xxx). The return codes are:

- 200 - Successful
- 408 - Device did not respond before the server terminated the session
- 409 - Device started a new session which caused this session to be terminated
- 500 - Unknown Error
- 503 - Server Busy

ThreadPool.GetThreadDelayTime histogram

You can see if there is a long delay before a device synchronization thread is allocated. This is an example of a device synchronization thread histogram:

```
ThreadPool.GetThreadDelayTime.DS.00-02 = 571071  
ThreadPool.GetThreadDelayTime.DS.02-05 = 45  
ThreadPool.GetThreadDelayTime.DS.05-10 = 29  
ThreadPool.GetThreadDelayTime.DS.10-Inf = 17
```

In this example the first line indicates that the majority of the device synchronization starts in the 0 to 2 second range. This implies that the current device thread count is sufficient for the load.



Traveler Command in depth: (continued..)

Tell traveler Memory / Tell Traveler Mem Show

Displays the amount of memory that IBM Notes Traveler is using and how much memory is free for use

```
Memory Usage:
Java Memory Usage      <-----This is the total memory that is used by the Lotus Notes Traveler process.
  Max Total           512 MB <-----This is the maximum memory as configured on the Traveler tab of the server document.
  Current Total       96 MB
  Free                481 MB (94 percent of Max Total) <-----The amount of free memory of the maximum allocated memory.
  Allocated           31 MB (6 percent of Max Total) <-----The used memory of the maximum allocated memory.
C Memory Usage <-----This is the total amount of allocatable memory on the machine.
  Total Virtual       2047 MB
  Total Physical      2047 MB
  Allocated           961 MB (48 percent of Total Physical)
Current Usage <-----This is a summary of the above values.
  Java                31 MB
  C                   961 MB
```

Tips:

On basis of the command output, the Java usage may vary and value of it can be set accordingly.

Recommendation:

On 64 bit Windows Server & 1000 users: Set Java memory to 2048 MB

On 64 bit Windows Server & 2000 users: Set Java memory to 4096 MB

Traveler Command in depth: (continued..)



“Tell traveler User user”

The below command displays all the information and devices associated with the specified user. This command also validates whether the user is correctly configured for IBM Notes Traveler server.

> tell traveler user notes admin

```
[20D0:0031-2594] IBM Notes Traveler has validated that it can access the database mail/nadmin.nsf. <-- access rights to the user mail file
[20D0:0031-2594] Encrypting, decrypting and signing messages are not
enabled because the Notes ID is not in the mail file or the ID vault. <-- whether user is able to send/ receive encrypted
mail messages

[20D0:0031-2594] Canonical Name: CN=Notes Admin/O=Acme
[20D0:0031-2594] Internet Address: null
[20D0:0031-2594] Home Mail Server: CN=ServerA/O=Acme
[20D0:0031-2594] Home Mail File: mail/nadmin.nsf
[20D0:0031-2594] Current Mail Server: CN=ServerA/O=Acme Release 9.0 <-- user mail file details and mail replicas
[20D0:0031-2594] Current Mail File: mail/nadmin.nsf
[20D0:0031-2594] Mail File Replicas: [CN=ServerA/O=Acme, mail/nadmin.nsf]
[20D0:0031-2594] ACL for Notes Admin/Acme: Access=Manager Capabilities=create,update,read,delete,copy Missing Capabilities=none
[20D0:0031-2594] ACL for ServerA/Acme: Access=Manager Capabilities=create,update,read,delete,copy Missing Capabilities=none
[20D0:0031-2594] Notes ID: Mail File does not contain the Notes ID.
[20D0:0031-2594] Auto Sync User State: Monitoring disabled
[20D0:0031-2594] Last Prime Sync: Sunday, May 19, 2013 2:48:36 PM IST <-- information about the last prime sync time
[20D0:0031-2594] Banned Documents: 0

[20D0:0031-2594] Devices:
[20D0:0031-2594] Device ID: Android_53e16fb58938b0
[20D0:0031-2594] Device Description: samsung GT-S5360:Android 2.3.6:IBM Notes Traveler/9.0.0.0 201303041537
[20D0:0031-2594] Security Policy Status: No policy
[20D0:0031-2594] Security State: Clear
[20D0:0031-2594] Approval State: Not required
[20D0:0031-2594] Last Sync: Sunday, May 19, 2013 2:06:32 PM IST <-- information about the last sync time
[20D0:0031-2594] Auto Sync Device State: Inactive
[20D0:0031-2594] Device offline time: Sunday, May 19, 2013 3:55:39 PM IST

[20D0:0031-2594] Auto Sync Connection State: Disconnected
[20D0:0031-2594] Auto Sync Applications to Synchronize: mail, calendar, serviceability, security
[20D0:0031-2594] Auto Sync Change Flags: clear
```



Fine Tuning the Notes Traveler server:

Tuning: HTTP Threads

The Domino HTTP server task must have enough threads to handle the number of HTTP requests from mobile devices accessing the Lotus Notes Traveler service.

If the number of active HTTP threads is insufficient, the following problems may occur:

1. Apple device users may experience "Cannot connect to server" messages or slow responsiveness when opening & synchronizing data.
2. Other device users may see error 503 (Server busy) messages in the Notes Traveler client interface, experience sync failures, and general slow responsiveness
3. Server CPU and memory utilization may increase to abnormal levels

Basics | Security | Ports... | Server Tasks... | Internet Protocols... | MT

HTTP | Domino Web Engine | DIIOP | LDAP

Basics	
Host name(s):	servera.cosmos.com
Bind to host name:	Disabled
DNS lookup:	Disabled
DNS lookup cache:	Enabled
DNS lookup cache size:	256
DNS lookup cache found timeout:	120 seconds
DNS lookup cache not found timeout:	240 seconds
Number active threads:	100

To make these changes effective, stop and restart HTTP (console command: *restart task http*).



Fine Tuning the Notes Traveler server: (continued..)

Tuning: HTTP Threads

Default HTTP thread values activated by Notes Traveler:

For 32-bit Domino installations, Lotus Notes Traveler will ensure at least 100 HTTP threads are allocated.

For 64-bit Domino installations, Lotus Notes Traveler will ensure at least 400 HTTP threads are allocated.

To determine number of Notes Traveler devices, Issue the below console command:

*Tell Traveler stat show push.devices.total**

Push.Devices.Total = 225

This indicates that 225 devices are registered for synchronization with the Notes Traveler server and that at least 270 HTTP threads are needed ($1.2 \times 225 = 270$).

Tip: The number of active HTTP threads needed for Traveler is calculated this way: $1.2 \times \text{Number of registered devices} = \text{Number of needed active HTTP threads}$



Fine Tuning the Notes Traveler server: (continued..)

Tuning: HTTP Threads

Tell Traveler Threads

--- Summary (Wed May 22 15:47:40 IST 2013) ---

Shutdown requested: false

Threads total: 148

Threads available: 10

Threads busy: 138

Threads deadlocked: 0

Threads monitor deadlocked: 0

-- Busy Thread Counts (Name: Current / Peak / Max) --

DS: 122 / 359 / 5000

PS: 4 / 200 / 200

Worker: 11 / 225 / 5000

TC: 1 / 3 / 50

Alarm: 0 / 6 / 20

VC: 0 / 20 / 20

HTTP: 850 / 999 / 2500 → The Total Active threads set is 2500



Fine Tuning the Notes Traveler server: (continued..)

Tuning: HTTP Threads

CAUTION: Allocating too many active HTTP threads will result in unnecessary server memory consumption, so it is recommended to only allocate the necessary number of HTTP threads needed for proper Notes Traveler operation.

- When setting the HTTP Active Threads, ensure that your system has sufficient resource to handle the increased threads.
- On a 64-bit machine, a single HTTP thread will occupy about 4 MB of memory and on a 32-bit machine, this will be about 1 MB of memory. For example, the memory required to handle a load of 1000 devices on a 64-bit can be calculated as follows:

HTTP Threads set to $1000 * 1.2 = 1200$ threads multiply by 4 MB = 4800 MB



Fine Tuning the Notes Traveler server: (continued..)

Tuning: Memory

Java Memory:

Basics	
Maximum Memory Size:	『 1024 』 MB
IPC Socket Ports:	『 50125 』 『 50126 』
External Server URL:	『 http://servera.acme.com/traveler 』

This is the amount of Java Memory allocated. By default on a 64-bit Domino server, this is set to 1024 MB (1GB) & on 32-bit Domino server, this is set to 512 MB. The Lotus Notes Traveler process is written in Java, so Java memory must be allocated. The Java memory required also depends on the number of the devices connected to the Notes Traveler server.

The console command to check the memory usage:

Notes Traveler 8.5.3.3:
Tell Traveler Mem Show

Notes Traveler 8.5.3 UP1/UP2, 9.0:
Tell Traveler Memory / Tell Traveler Mem Show



Fine Tuning the Notes Traveler server: (continued..)

Tuning: Memory

Memory caches: (Internet Protocols – Domino Web Engine tab)

Memory Caches	
Maximum cached designs:	128
Maximum cached users:	64
Cached user expiration interval:	120 seconds

The Maximum cached users field is used to store a users name, password, and a list of groups that the user belongs to. A user is added to this cache after they successfully authenticate with the Lotus Notes Traveler server. The default setting for this field is 64. If the number of current authenticated users logged in exceeds this value, some performance improvements may be gained by increasing the number of the Maximum cached users.

Issue command on traveler server console: `show stat Domino.Cache.User*`

`Domino.Cache.User Cache.Count = 860`

`Domino.Cache.User Cache.MaxSize = 64`

If the value listed in the `Domino.Cache.User Cache.Count` is larger than the `Domino.Cache.User Cache.MaxSize`, then try slowly incrementing the maximum value for the "Maximum cached users", as shown in the Memory Cache section screen capture above, until the Count no longer reaches the Maximum



Fine Tuning the Notes Traveler server: (continued..)

Tuning: Memory

NSF_BUFFER_POOL_SIZE_MB

If you are running the Notes Traveler server on a 32-bit Microsoft Windows operating system, then you may need to take steps to reduce the memory usage by the core Domino server. You should reduce the amount of memory that Domino pre-allocates to the shared memory buffer pool by adding the following line to the Notes.ini in your Domino server program directory:

```
NSF_BUFFER_POOL_SIZE_MB=256
```

If this line is not present, then the Domino server pre-allocates 512 MB of shared memory for buffers, which does not leave enough memory for other applications running on the server.

On Windows 64 bit servers, For 64 Bit Domino 8 and later the default Maximum UBM size is 1024 MB



Fine Tuning the Notes Traveler server: (continued..)

Database Fragmentation

Notes Traveler maintains state information about each device in a Derby relational database. This information includes device information, device security and data that allows the Lotus Notes Traveler server to know if a device needs to sync. This database's files are stored on the Notes Traveler system in the `data\traveler\ntsdb` directory. You can check the size of the folder

Tip: Do not delete the `ntsdb` folder on the system. Deleting the state information forces all users to resync their data, and you will lose all security information (such as devices that have been denied access or wiped and any documents that have been banned from syncing).

Tip: Run the `defrag` command approximately once a month for optimal system health.

Console command to run de-fragmentation:

```
tell traveler quit  
tell http quit  
load traveler -defrag
```

The de-fragmentation operation may take more than 30 minutes to complete depending on database size and system capabilities. If the Domino HTTP task is not started automatically by Lotus Notes Traveler, then start it manually using the following command.

```
load http
```



Fine Tuning the Notes Traveler server: (continued..)

Database Fragmentation

*Tell Traveler Stat Show Database.Query.Histogram.**

```
Database.Query.Histogram.GudSelect.000-001 = 1666329
Database.Query.Histogram.GudSelect.001-002 = 3982
Database.Query.Histogram.GudSelect.002-005 = 3309
Database.Query.Histogram.GudSelect.005-010 = 945
Database.Query.Histogram.GudSelect.010-030 = 505
Database.Query.Histogram.GudSelect.030-060 = 72
Database.Query.Histogram.GudSelect.060-120 = 4
Database.Query.Histogram.GudSelect.120-Inf = 2
```

A well running database would show all accesses in the 000-001 range as shown below. Perform a database defrag by following the instructions mentioned in earlier slide.

```
Database.Query.Histogram.GudSelect.000-001 = 280834
Database.Query.Histogram.GudSelect.001-002 = 7
Database.Query.Histogram.GudSelect.002-005 = 9
Database.Query.Histogram.GudSelect.005-010 = 2
```



Fine Tuning the Notes Traveler server: (continued..)

Database Fragmentation

Defragmentation on Schedule Basis:

Add NTS_DEFRAG_INTERVAL_DAYS to the notes.ini parameter. For example, to set interval of 30 days add:

```
NTS_DEFRAG_INTERVAL_DAYS=30
```

Restart the Lotus Traveler server. From that point on, if Lotus Traveler server is restarted and it has been 30 days since the last defrag, then the defrag operation will run.

To force a defrag to run, delete the parameter NTS_LAST_DEFRAG from the notes.ini file and restart the server. If NTS_DEFRAG_INTERVAL_DAYS is set and there is no last defrag timestamp, then the server will perform a defrag and reset the timestamp.

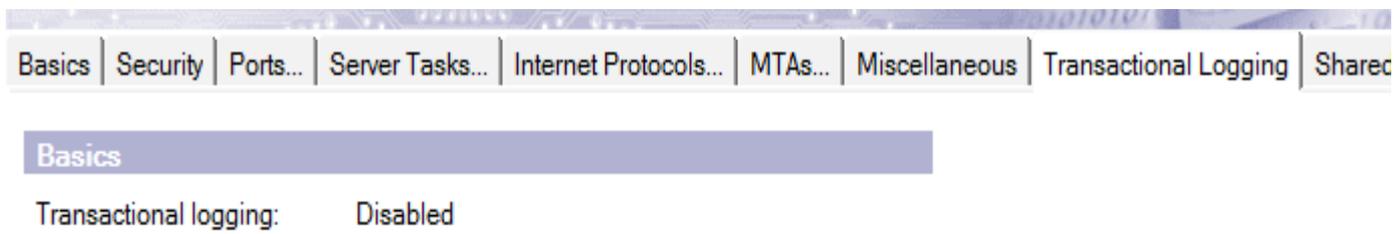


Fine Tuning the Notes Traveler server: (continued..)

Transaction Logging

Go to the Transactional Logging tab.

Disable Transactional Logging. The Lotus Notes Traveler server is not a typical server, as there is very little writing to Domino databases. With the small number of writes necessary, it is not necessary to enable Transactional Logging.





Fine Tuning the Notes Traveler server: (continued..)

Always keep server logging to minimal

-When debugging a specific problem, the Lotus Notes Traveler server should only be run at a logging level of FINEST. For problems that affect all users, the overall level should still be FINEST. But if the problem is specific to only a few users, then run only those users at the FINEST level, leaving the other users at the system level.

-The Traveler logs, especially if the FINEST level is being used, can include numerous files.

-Traveler command to check logging level

> *Tell traveler Log Show*

[28C8:0053-3358] Logging Status

[28C8:0053-3358] Log Level: FINEST

*[28C8:0053-3358] Activity Log: C:\CCIL\IBM\Lotus\Domino\data\IBM_TECHNICAL_SU
PPORT\traveler\logs\NTSAActivity_130415-233742.log*

*[28C8:0053-3358] Error Log: C:\CCIL\IBM\Lotus\Domino\data\IBM_TECHNICAL_SU
PPORT\traveler\logs\NTSErrors_130415-233742.log*

*[28C8:0053-3358] Usage Log: C:\CCIL\IBM\Lotus\Domino\data\IBM_TECHNICAL_SU
PPORT\traveler\logs\NTSUsage_130415-233742.log*

[28C8:0053-3358] Usage Logging: Enabled

[28C8:0053-3358] Log size limit: 50 Million Bytes

[28C8:0053-3358] Log file count: 10

[28C8:0053-3358] Log Fields: ASLP

[28C8:0053-3358] User Logging: Selected Users

[28C8:0053-3358] CN=AdministratorACME/O=ACME FINEST

[28C8:0053-3358] Package Logging: All Packages



Fine Tuning the Notes Traveler server: (continued..)

Fine Tuning NTS parameters

- **Configuring how many characters are typed before the query is performed**

NTS_NAME_LOOKUP_MIN_LENGTH

- **Configuring the maximum number of results to return to the client**

NTS_NAME_LOOKUP_MAX_RECORDS

- **Configuring which server to perform the look-up against**

NTS_TRAVELER_AS_LOOKUP_SERVER

Reference : http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Notes.ini_setting_s_A9&content=pdcontent



Notes Traveler performance issues on VM:

– In general, virtual instances are known to reduce overall capacity of the system when compared to a physical installation. It is important to understand that Notes Traveler is a real-time critical application and any resources allocated to the Lotus Traveler instances should be allocated statically.

--If dynamic resources are used and other applications on the host are using resources when needed by Notes Traveler, then the service will degrade. Make sure that the virtual instance of the Lotus Notes Traveler server has static access to the recommended resources for a physical server (which means, it should have equivalent CPU, memory, and disk I/O).





Notes Traveler performance issues on VM: (continued..)

Statistics to check on VM

- Check the CPU of the Traveler server
- Check the memory chart for defined period
- Check real disk statics to show disk latency

Show Stat Platform.LogicalDisk.* command will give the disk statistics as below:

```
Platform.LogicalDisk.x.AssignedName = *  
Platform.LogicalDisk.2.AvgQueueLen = 2.26  
Platform.LogicalDisk.2.AvgQueueLen.Avg = 5.1484066438E+12  
Platform.LogicalDisk.2.AvgQueueLen.Peak = 1.8446741005E+17
```

Value of Platform.LogicalDisk.2.AvgQueueLen.Avg above 0.2 indicates that the server is running into a limitation of physical resources

Reference : <http://www-01.ibm.com/support/docview.wss?uid=swg21615973>



Tips:

- In order to stay in tune with latest device market updates, Upgrade the Notes Traveler to latest release.
- Always check on the traveler status, memory & CPU utilization once in a day.
- It is recommended to defrag Lotus Notes Traveler's internal database which will compact and optimize the database for performance. The defrag feature can only be run at startup. Recommended to run once a month.
- Before raising a PMR, check whether the issue to be reported is not a known Server limitation / restriction or Notes Traveler Known limitations /restrictions.

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Server_limitations_and_restrictions_A9&content=pdcontent

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Using+IBM+Notes+Traveler+9#action=openDocument&res_title=Known_limitations_and_restrictions_U9&content=pdcontent



Tips:

- There are a number of different factors you should consider when planning the type of computer system that will host the IBM Notes Traveler application server. They are:

Operating System selection and Domino Server application type (64-bit)

Central Processing Unit speed and capacity

Disk storage configuration

Physical RAM availability

Back-end network speed

Follow Capacity planning guidelines for IBM Notes Traveler:

[http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?](http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Capacity_planning_guidelines_for_IBM_Notes_Traveler_A9&content=pdcontent)

[lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Capacity_planning_guidelines_for_IBM_Notes_Traveler_A9&content=pdcontent](http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Capacity_planning_guidelines_for_IBM_Notes_Traveler_A9&content=pdcontent)

- Always clear the temporary files on Windows OS, when Domino server is shut down. You can do this by going to Start > Run > %TEMP%. If you are having too much clutter in TMP folder, then you may face problems in startup.



Tips:

- The utilization of high speed connections for servers is recommended. In addition, you should endeavor to physically place the Traveler servers as close to the mail servers as possible. Slow speeds across the connections can result in timeout errors.
- Ensure Reverse proxy is able to support a number of long-running HTTP connections equal to the mobile device clients that are in your network.
- Reference :
http://infolib2.lotus.com/resources/domino/traveler/8.5.3/doc/ta853abd002/en_us/NotesTraveler.html
- The value in the Server document on the Internet Protocols > HTTP tab in the Maximum number of concurrent network sessions field is at least equal to or greater than the number of active threads defined.
- The “tell traveler” command output can be dumped to a file as show:
tell traveler -f “c:\temp\out.txt” status
- Traveler Deployment Model
http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=IBM+Redbooks%3A+IBM+Notes+Traveler+hints+and+tips+for+a+successful+deployment#action=openDocument&res_title=3.0_Deploying_a_stand-alone_Lotus_Notes_Traveler_environment&content=pdcontent



Whats new in Notes Traveler 9.0:

- 9.0 is our first major Domino/Traveler release since 8.5.3.0
 - Cumulative feature and APAR roll-up
 - More device support and new features
 - Contains everything up to and including 8.5.3 UP2 IF1
 - Can be installed on any previous release of Traveler, stand alone or HA
 - Must run on Domino Server Version 9
 - Same Enterprise DB support as 8.5.3 UP2
 - Some significant platform differences over 8.5.3.x so need to review upgrade strategies carefully
- **Server:**
- Dropped Support for Windows 2003, SLES 10 and Redhat 5
 - Added Windows 2012
 - Added IBM i V6R1 and V7R1
 - Added Native 64 bit support for Linux (Redhat 6 & Suse 11 64 bit)
- **Device:**
- Added Windows Phone 7.5, 7.8 and 8.0
 - Added Windows 8 RT and Windows 8 Pro Tablets
 - Added BlackBerry 10 devices
 - Deprecated support for Windows Mobile & Nokia Symbian device clients



Data to gather in case of Traveler Server Crash:

Note: In all crash scenarios it is recommended to upgrade to the latest maintenance levels of both Domino and Notes Traveler servers, as there are many known issues which are resolved in latest maintenance release.

- If the IBM Notes Traveler server is able to start, run the PMR command from the Domino console.

```
tell traveler pmr <pmr_number>
```

- If you are running an HA environment, use the -s flag to collect data from all servers.
tell traveler -s * pmr <pmr_number>

- If the IBM Notes Traveler server will not start, run the PMR command from a command utility window from the directory <Domino data root>/traveler/util.

- For Windows™ operating systems: travelerUtil.cmd PMR <pmr_number>.
- For Linux™ operating systems (must be root user): ./travelerUtil PMR <pmr_number>.
- For IBM i operating systems (QShell): ./travelerUtil PMR <pmr_number>.



Data to gather in case of Server startup or configuration:

- Enabled the console & threadID logging, if not enabled.
set config console_log_enabled=1
set config Debug_ThreadID=1
- Reproduce the problem by editing the notes.ini file and removing Traveler from the ServerTasks list. Then restart Domino and issue the following command:

Load Traveler -debug

- If the IBM Notes Traveler server is able to start, run the PMR command from the Domino console:

tell traveler pmr <pmr_number>

- Where <pmr_number> is a properly formatted PMR number. This will perform a systemdump of all log files, collect them in one zipped file, and automatically upload (FTP) the output from the log collect to ECuRep under the designated PMR number.
- If the IBM Notes Traveler server will not start, run the PMR command from a command utility window from the directory <Domino data root>/traveler/util.
- For Windows operating systems: travelerUtil.cmd PMR <pmr_number>.
- For Linux operating systems (must be root user): ./travelerUtil PMR <pmr_number>.
- For IBM i operating systems (QShell): ./travelerUtil PMR <pmr_number>.



Data to gather in case of Server Performance:

- Increase the logging for the system by running the following command:

```
tell traveler log level fine
```

- Initiate a systemdump to capture the current state of the machine:

```
tell traveler systemdump
```

- If you are running an HA environment, use the -s flag to generate a system dump on all servers.

```
tell traveler -s * systemdump
```

- Wait at least twenty minutes, then run the following command:

```
tell traveler pmr <pmr_number>
```

- If you are running an HA environment, use the -s flag to collect data from all servers.

```
tell traveler -s * pmr <pmr_number>
```



Data to gather in case of User Connectivity and Synchronization problems:

- User connectivity and password problems:

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=User_connectivity_and_password_problems_A9&content=pdcontent

- User synchronization problems:

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=User_synchronization_problems_A9&content=pdcontent

- Device Logging:

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Device_logging_A9&content=pdcontent

- PMR command details:

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=PMR_command_details_A9&content=pdcontent



Reference:

- Tuning HTTP active threads:

http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&res_title=Tuning_active_HTTP_threads_for_IBM_Notes_Traveler_A9&content=pdcontent

- Administering IBM Notes Traveler 9.0:

<http://www-10.lotus.com/ldd/dominowiki.nsf/xpDocViewer.xsp?lookupName=Administering+IBM+Notes+Traveler+9#action=openDocument&content=catcontent&ct=prodDoc>

- IBM Notes Traveler Tips and Techniques for a Successful Deployment:

<http://www.redbooks.ibm.com/abstracts/tips0966.html>



Questions ?