

IBM Notes Traveler Administration & Log Troubleshooting Tips – Part II

Open Mic

Date: 05-11-2015

Open Mic Team



- Manish Jha - IBM ICS Support engineer
- Presenter



- Shrikant Ahire - IBM ICS Support engineer
- Presenter



- Jayesh Parmar - IBM ICS Support engineer
- Presenter



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



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



- Hansraj Mali - IBM ICS SWAT
- Focusing on entire Notes/Domino



- Narendra Nesarikar – IBM ICS Support Facilitator for Open Mics



(In continuation to the IBM Notes Traveler Administration & Log Troubleshooting Tips – Part I)

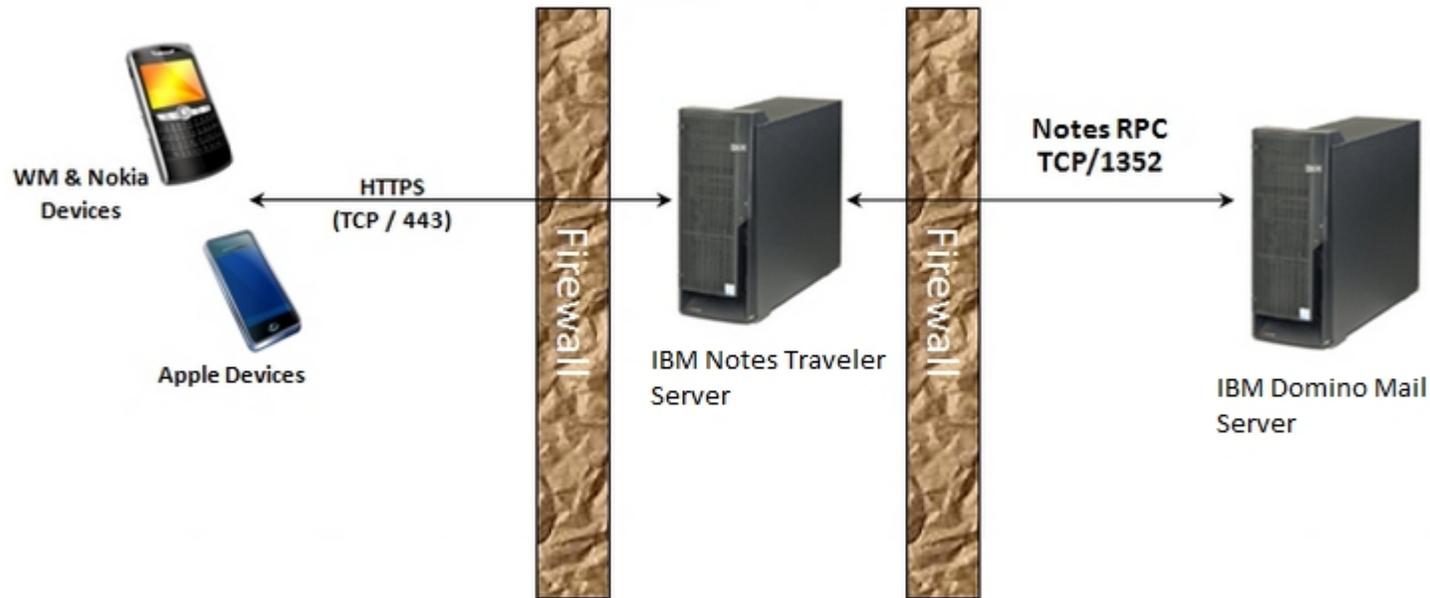
Reference: <http://www.ibm.com/support/docview.wss?uid=swg21969304>

Agenda Items:

- Understanding Traveler Activity, Error and Usage Logs
- Demonstration on log analysis to resolve Traveler issues
- Information on System requirements for iOS9
- Required SSL settings for Traveler to service iOS9 devices
- References
- Q/A



Understanding Traveler Activity, Error and Usage Logs:-



→ DS Thread → Connection between Mobile Device and Traveler Server (Task involved HTTP)

→ PS Thread → Connection between Traveler and Mail Server (Task involved Traveler)



Understanding Traveler Activity, Error and Usage Logs:-

NTSErrors:

→ NTSErrors files contain any errors that IBM Traveler has encountered. These are just the SEVERE level messages

```
[TimeStamp] [Level] [Thread Name] [User] [Class.Function#Line] [Message]
[02/27 14:43:40.325] SEVERE PS-3eec CN=User/OU=Org Unit/O=Org BackEndManager.validateDBAccess#563
Exception Thrown: com.lotus.sync.dca.CAException: Notes error: The server is not responding. The server may
be down or you may be experiencing network problems.
```

Additional debug messages (not always present)

Stack trace (not always present)

```
at lotus.domino.local.Database.NqueryAccess(Native Method)
at lotus.domino.local.Database.queryAccess(Unknown Source)
at com.lotus.sync.dca.access.ACLMgr.getDatabaseAccess(ACLMgr.java:105)
at com.lotus.sync.dca.access.ACLMgr.<init>(ACLMgr.java:65)
at com.lotus.sync.dca.BackEndManager.validateDBAccess(BackEndManager.java:519)
at com.lotus.sync.caf.ContentManager.getDBInformation(ContentManager.java:1077)
at com.lotus.sync.caf.CAFSession.setUriMapping(CAFSession.java:884)
at com.lotus.sync.caf.CAFSession.<init>(CAFSession.java:808)
at com.lotus.sync.caf.CAFSessionManager.createSession(CAFSessionManager.java:111)
at com.lotus.sync.caf.auth.AuthWrapper.validateBackendAccess(AuthWrapper.java:521)
at com.lotus.sync.caf.auth.AuthWrapper.validateLogin(AuthWrapper.java:236)
at com.lotus.sync.TSS.ExtRoutine.TssHook.validateLogin(TssHook.java:80)
```

Understanding Traveler Activity, Error and Usage Logs:-



NTSActivity:

- Lists all the errors and the usage activity that are seen in the NTSError, and NTSUsage logs
- Lists all tracing that is done on a user/server
- Basic layout of the log message

[TimeStamp] [Level] [Thread Name] [User] [Class.Function#Line] [Message]

[10/15 15:28:44.584] FINE DS-0f18[Email_4] CN=User/OU=Org Unit/O=Org ActiveSyncSyncSession.run#232
ActiveSync starting for user CN=User/OU=Org Unit/O=Org on device ApplDLXFJGG3DFHY

[10/15 15:28:44.584] FINE DS-0f18[Email_4] CN=User/OU=Org Unit/O=Org ActiveSyncSyncSession.run#232
ActiveSync starting for user CN=User/OU=Org Unit/O=Org on device ApplDLXFJGG3DFHY

Details:

Timestamp: The local date and time to millisecond precision

Level: SEVERE, WARNING, INFO, FINE, FINER, FINEST

Thread Identifier: The thread name with an optional correlator in brackets []

User Name: The user's ID in canonical name format

Source Code ID: The class, method, and line number that originated the message log

Message: The message can be any text



Understanding Traveler Activity, Error and Usage Logs:-

NTSAudit:

→ NTSAudit files contain changes to the system, such as settings changes (server document, notes.ini, and so on) and server state changes (up, down, and so on)

→ Logs all the tell commands fired on the server

```
"10/15 19:27:10.513" Profile *System* "Profile updated: devPmaxAtt - oldValue=20480, newValue=4000"
```

```
"10/15 19:27:10.513" Profile *System* "Profile updated: devPbTrunc(devPbTrunc) - oldValue=5000, newValue=4000"
```

```
"10/17 08:19:12.545" TellCommand *Console* "tell traveler Status: status=OK, time=188 ms"
```

```
"10/19 07:29:08.664" TellCommand *Console* "tell traveler Memory show: status=OK, time=15 ms"
```

```
"10/20 11:47:57.056" Configuration *System* "Non-default value: NTS_64_BIT - oldValue=true (Default),  
newValue=false"
```

```
"10/20 11:47:57.056" Configuration *System* "Non-default value: NTS_BUILD - oldValue= (Default), newValue=9.0.1.7  
Build 201508211840_20"
```



Demonstration on log analysis to resolve traveler issues:-

Case 1: Users complaining of slow synchronization and error connecting to server

- Users complain that mails are either very slow synching to device or not synching to device at all
- As a first step, Check system dump of the traveler server to understand the server status (Green / Yellow / Red)

“tell traveler status”

Traveler status is "RED".

There have been 202 device sync failures because the server is too busy and returned status code 503.

- The above error indicates there are many synchronization failures causing Traveler status to go RED
- Check CPU and Memory usage section, these sections should give fair idea as when the issue started



Demonstration on log analysis to resolve traveler issues:-

Case 1: Users complaining of slow synchronization and error connecting to server (contd..)

CPU And Memory section in System dump

CPU and Memory (MB) Usage History

Date	CPU Pct	Java Mem	C Mem	Avl Indx	# Users	# Errors	# DB Conn
2015-07-07 04:31:19 IST	0.43	130	2868	100	45	3	0
2015-07-07 04:46:19 IST	0.26	100	2868	100	45	3	0
2015-07-07 05:01:19 IST	0.36	172	2868	100	45	3	1
2015-07-07 05:16:19 IST	0.39	164	2868	100	45	3	1
2015-07-07 05:31:19 IST	0.57	84	2868	100	45	3	1
2015-07-07 05:46:19 IST	0.45	96	2868	100	45	3	1
2015-07-07 06:01:19 IST	33.52	356	2868	100	45	140	232
2015-07-07 06:16:19 IST	29.74	421	2868	100	45	190	221
2015-07-07 06:31:19 IST	31.78	391	2868	100	45	240	225

Observation: Suddenly the DB connections have gone high, As a next step, check the NTSActivity logs for details of the transactions and errors



Demonstration on log analysis to resolve traveler issues:-

Case 1: Users complaining of slow synchronization and error connecting to server (contd..)

Corrective Actions:

- Traveler server is entering in **constrained state** because active DB connections at that point are more than default threshold
- DB connections can go high for two reasons:
 - NTSDDB access is slow (may be it is fragmented and requires defragmentation)
 - Disk I/O is high (Read/Write is slow)
- Traveler server **keeps monitoring the statistics to understand its performance**. At any point, if it crosses threshold **it will put itself in constrained state**. This indicates that it will stop processing new synch requests. However the existing synch request will complete
- As when the server is in constrained state, any **new device connections will be rejected with 503 error** and user may see error on device **"Server is running with full capacity"**



Demonstration on log analysis to resolve traveler issues:-

Case 2: Traveler Server keeps going in RED Status

→ Another example of slow mail synchronization

“tell traveler status”

Traveler status is "RED".

There were 89 errors logged during the last status interval

→ However, with the above error, there is no performance issue or any errors reported by users

→ This scenario can be tricky and NTSErrors would help in understanding exact reason for error

→ Most of the time, System dump will not have helpful information for such scenario where status is RED because of errors that are unknown (Without status code 503)



Demonstration on log analysis to resolve traveler issues:-

Case 2: Traveler Server keeps going in RED Status (contd..)

→ Check the NTSErrors log file and map the last errors reported with RED status accordingly at time when it was seen

Example:

22/10/2015 02:07:07 PM Notes Traveler: SEVERE Test User Error parsing ActiveSync message: j

22/10/2015 02:07:08 PM Notes Traveler: SEVERE Test User Error handling > inbound ActiveSync message for command Sync. Input data (18 bytes): j

22/10/2015 02:07:09 PM Notes Traveler: SEVERE Test User Error handling inbound ActiveSync message for command Sync. Input data (18 bytes): j

→ These errors indicate that user “**Test user**” is generating many errors during synchronization which is causing Traveler status to go **RED**. Isolating these errors would suppress RED status issue

There can be multiple reasons for above error:

→ User device is not supported. (eg: Android is configured via Acive Synch and not Traveler application)

→ There might be some corruption with user Mail database

→ There may be some other issue for synching certain type of MIME emails. You may raise PMR with IBM Support



Demonstration on log analysis to resolve traveler issues:-

Case 3: Traveler Server intermittently goes in Hung state

→ Traveler may intermittently stop responding to users and suddenly again may start syncing mails without any administrator intervention

→ Issue system dump command during the time of issue to collect server statistics. Check if Status is **Yellow** / **Red**

Traveler status is "Yellow".

User CN=Test User1/O=Acme on thread DS-2020[y1IPHgAA][39][A46CA0E39851229A65257EBE003BC006][337544] has been running for 33 minutes.

The **response times for opening databases on mail server CN=Server1/O=Acme** are above the acceptable threshold.

User CN=Test user2/O=Acme on thread DS-180c[ytDHnAAA][11][4D34A603954DF82665257EBE003C761E][5527739] has been running for 181 minutes.



Demonstration on log analysis to resolve traveler issues:-

Case 3: Traveler Server intermittently goes in Hung state (contd..)

→ Going through systemdump, we observed that few users threads are held and particular mail server response time is too high which has caused threads to be held

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.**

DCA.DB_OPEN.Time.Histogram.CN=Server1/O=Acme.000-001 = 192

DCA.DB_OPEN.Time.Histogram.CN=Server1/O=Acme.001-002 = 26

DCA.DB_OPEN.Time.Histogram.CN=Server1/O=Acme.002-005 = 55

DCA.DB_OPEN.Time.Histogram.CN=Server1/O=Acme.005-010 = 70

DCA.DB_OPEN.Time.Histogram.CN=Server1/O=Acme.010-030 = 26

→ Above statistics, shows the number of times the database on “Server1/Acme” was opened in respective time frame

→ Ideally all requests should be in bucket of less than 002 seconds

→ Higher number in larger buckets indicate connectivity issue between traveler and mail server



Demonstration on log analysis to resolve traveler issues:-

Case 3: Traveler Server intermittently goes in Hung state (contd..)

→ It may happen that “**tell traveler systemdump**” command won't work, if Traveler task is unresponsive or server as a whole is not responding

→ If that is the case, validate NTSErrors log file. This should give fair idea on held threads on traveler server which may be due to connectivity issue with remote mail server

Example:

```
[09/15 12:15:13.885] SEVERE DS-2048[z7/YAwAA][2] Test user1 TSSSync.doRetrieve#3236 Exception Thrown:
com.lotus.sync.TSS.SyncMLServer.protocol.syncml.SyncException: generic error. An error was encountered
retrieving data from the Domino server. See earlier error messages in the logs.ionCommon.java:596)
```

```
*** Content Adapter Exception ***
```

```
ERROR 36 (Unknown)
```

```
--- Debug Info -----:
```

```
Invalid DB: Status(0x'19d')='Operation stopped at your request' on doesDatabaseExist('CN=Server1/O=Acme',
'mail/Tuser1.nsf')
```

→ Fix the response time issue between Traveler and mail server (i.e Network latency)



Information on System requirements for iOS9:-

→ Ensure that Traveler server is running 9.0.1.7 and later release

FAQ:

<http://www-01.ibm.com/support/docview.wss?uid=swg21962180>

System Requirement:

<http://www-01.ibm.com/support/docview.wss?uid=swg21965124>

→ Must upgrade the Traveler Domino server to latest release i.e Domino 9.0.1FP4 that supports TLS 1.2

→ TLS 1.2 support is introduced in Domino 9.0.1 Fix Pack 3 Interim Fix 2 or later release

http://www-01.ibm.com/support/docview.wss?uid=swg21697925&cm_mc_uid=44478674754914310142442&cm_mc_sid_50200000=1443034218



Required SSL settings for Traveler to service iOS9 devices:-

What change happened, which caused iOS9 devices to stop synching mail?

→ Apple “App Transport Security” enforces best practices in the secure connections between an app and its back end

→ APIs needs to be encrypted using TLS version 1.2 with forward secrecy. ATS is on by default in iOS 9.

→ IBM Traveler 9.0.1.7 provides the following device and database support

→ Support for Windows 10 Pro running on tablet devices.

→ Support for Apple iOS 9.x running on all Apple devices.

→ Support for Microsoft SQL Server 2014 Enterprise Edition

→ If you are running iOS 9 devices connecting to a SSL-enabled Traveler server, the backend Domino server must support TLS 1.2 connections

→ You must upgrade your Domino server to the latest release that supports TLS 1.2 connections(TLS 1.2 support introduced in Domino 9.0.1 Fix Pack 3 Interim Fix 2)



Required SSL settings for Traveler to service iOS9 devices:-

Optional:

→ After upgrading the server, you may add the following parameters to define which ciphers the server will support.

***Note:** If you are running Domino 901 Fix Pack 4 Interim Fix 2 or later then you can opt to not configure these parameters below and use the default ciphers

Disable_SSLv3=1 → This is to disable SSLv3 from the server making the server secure from the POODLE attacks

SSLCipherSpec=9F9E6B39679D9C3D353C2F330A

→ The SSLCipherSpec parameter overrides the default cipher list configured in the server. The value above is the complete cipher list for TLS 1.2 and TLS 1.0. By default, TLS 1.2 will be enabled once you upgrade to the appropriate Domino server version. Adding this parameter means that you are specifying which TLS 1.2 cipher suites you wish the server to use and support. The above example lets the server use the complete TLS 1.0 and TLS 1.2 cipher suites

Reference:

<http://www-01.ibm.com/support/docview.wss?uid=swg21967350>

http://www-10.lotus.com/ldd/dominowiki.nsf/dx/TLS_Cipher_Configuration



Required SSL settings for Traveler to service iOS9 devices:-

Considerations for High Availability servers for iOS9 devices:

→ **Load balancer should be equipped to handle connections over TLS 1.2**

→ For Traveler servers in HA environment, the client-facing network component (i.e. firewall, load balancer, reverse proxy or IP sprayer) shall be able to support TLS 1.2 ciphers. Otherwise, the connection will fail

→ The back-end connection between these components and Traveler servers can be via HTTP

→ If the back-end connection is also, using HTTPS (secured) then you must ensure that the ciphers between Traveler and the load balancer match



Required SSL settings for Traveler to service iOS9 devices:-

iOS9 connectivity issue with Domino self signed certificate:

→ If you have Domino CA Self-Sign SSL certificates, you will receive the following type of error messages after upgrading to 9.0.1 FP4:

TLS/SSL connection x.x.x.x - x.x.x.x failed with server certificate chain signature algorithms NOT supported by client
TLS/SSL connection x.x.x.x - x.x.x.x failed with server certificate chain requiring support for MD5

IMPACT:

→ iOS 9 users unable to sync mail

→ Users using Android 4.3 or lesser unable to sync mail

→ TLS 1.2 gives the endpoint the ability to specify signature algorithms that it will accept. Newer versions of several browsers no longer consider MD5 to be secure so they no longer specify MD5 as acceptable in the TLS 1.2 handshake. Consequently, browser authentication with a Domino Web server, the keyring for which is hashed with MD5, will fail during the TLS handshake

→ To resolve this issue, replace your MD5 Web server keyring with one built using SHA-2 (or SHA1)

Reference: <https://www-304.ibm.com/support/docview.wss?uid=swg21701159>



Required SSL settings for Traveler to service iOS9 devices:-

iOS9 connectivity issue with Domino self signed certificate:(contd..)

→ For an older Android device to communicate with the traveler server, below parameter should not be set:

SSL_DISABLE_TLS_10

(Since older Android are not capable for communicating over TLS 1.2)

→ The above parameter support Disabling TLS1.0 for compliance reasons. Used in conjunction with existing DISABLE_SSLV3=1 allows you to limit communication to TLS 1.2 only for protocols: HTTP, SMTP, LDAP, POP3 & IMAP

→ You may also noticed below error messages, though all the steps has been followed

03/27/2015 01:22:39 PM TLS/SSL connectionX.X.X.X-9(995)-Y.Y.Y.Y(50668) failed with rejected protocol version
03/27/2015 01:22:39 PM TLS/SSL connection X.X.X.X-Y.Y.Y.Y (50669) failed with rejected protocol version

→ Above error message is due to few device trying to connect with protocol not supported by the server

→ To suppress the above error message, update server with below notes.ini parameter

SSL_LOGGING_DISABLE=1

Reference: http://www-10.lotus.com/ldd/dominowiki.nsf/dx/TLS_1.2



Required SSL settings for Traveler to service iOS9 devices:-

iOS9 connectivity issue with Domino self signed certificate:(contd..)

Unable to use IBM verse application on Apple device with Self signed certificate

- You have upgrade the server to supported release, but unable to use IBM Verse app on iOS9 device
- Self signed certificate will not work with IBM Verse app
- To use IBM Verse app on iOS9 device, IBM Domino server needs to be updated with Trusted third party SSL certificate
- You may have a question whether upgrade of server and SSL certificate will impact existing user?
- If http to https then Android user will be impacted. They need to re-configure the device using https URL
- For iOS users with iOS 8 and above version, they have an option to toggle SSL from Disable to Enable whereas the Android users don't



Required SSL settings for Traveler to service iOS9 devices:-

Traveler update to latest release, below is the option to configure the device:

IBM Traveler

User Status for Fordiaadmin/Fordi

IBM Traveler server is available.

iPhone 5: Last synced at Friday, October 2, 2015 11:09:16 AM IST and monitoring user's mail database is disabled.

Configure your Device

Your device could not be automatically identified. Please take the appropriate action for your device.

[Download the IBM Verse client for Android from the app store](#)

[Download the legacy IBM Traveler client for Android](#)

[Download the IBM Verse client for Apple from the app store](#)

[Generate an Apple Profile for Apple Mail, Contacts, and Calendar Apps](#)



References:-

- iOS 9 support statement: <http://www.ibm.com/support/docview.wss?uid=swg21962180>
- Apple iOS9 App Transport Security - <https://developer.apple.com/library/prerelease/ios/technotes/App-Transport-Security>
- Detailed System Requirements (On Prem): <http://www.ibm.com/support/docview.wss?uid=swg27045363>
- IBM Traveler 9.0.1.7 Release Documentation - <http://www-01.ibm.com/support/docview.wss?uid=swg21965124>
- IBM Notes & Domino Interim Fixes to support TLS 1.2 - http://www-10.lotus.com/ldd/dominowiki.nsf/dx/TLS_1.2
- TLS Cipher Configuration - http://www-10.lotus.com/ldd/dominowiki.nsf/dx/TLS_Cipher_Configuration
- TLS 1.2 deliveries for IBM Notes & Domino 9.x - <http://www.ibm.com/support/docview.wss?uid=swg21697925>
- iOS 9.x native Calendar app may remove some repeating Domino calendar entries from device - <http://www.ibm.com/support/docview.wss?uid=swg21966731>
- Generating a keyring file with a self-signed SHA-2 cert using OpenSSL and kyrtool
http://www.lotus.com/ldd/dominowiki.nsf/dx/Self-signed_SHA-2_with_OpenSSL_and_kyrtool?open
- Generating a keyring file with a third party CA SHA-2 cert using OpenSSL and kyrtool
http://www.lotus.com/ldd/dominowiki.nsf/dx/3rd_Party_SHA-2_with_OpenSSL_and_kyrtool?open



Questions?

Press *1 on your telephone to ask a question.

Visit our [Support Technical Exchange](#) page or our Facebook page for details on future events.

To help shape the future of IBM software, take this quality survey and share your opinion of IBM software used within your organization: <https://ibm.biz/BdxqB2>



Find us on
Facebook

IBM Collaboration Solutions Support page
<http://www.facebook.com/IBMLotusSupport>

follow us on
twitter

IBM Collaboration Solutions Support
http://twitter.com/IBM_ICSSupport