



#1593: The top 10 things that can go wrong with an IBM Traveler Server plus how to *detect* and *correct* them

Alan Forbes

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#ibmconnect





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Why this Traveler stuff *really* matters



- We all lead **busy** lives
- For me, work/life balance is **always** a struggle
- It's not that Traveler enables us to be sneaky, but...
- **Traveler = Freedom**
- Work from anywhere?

Make Every **Moment** Count

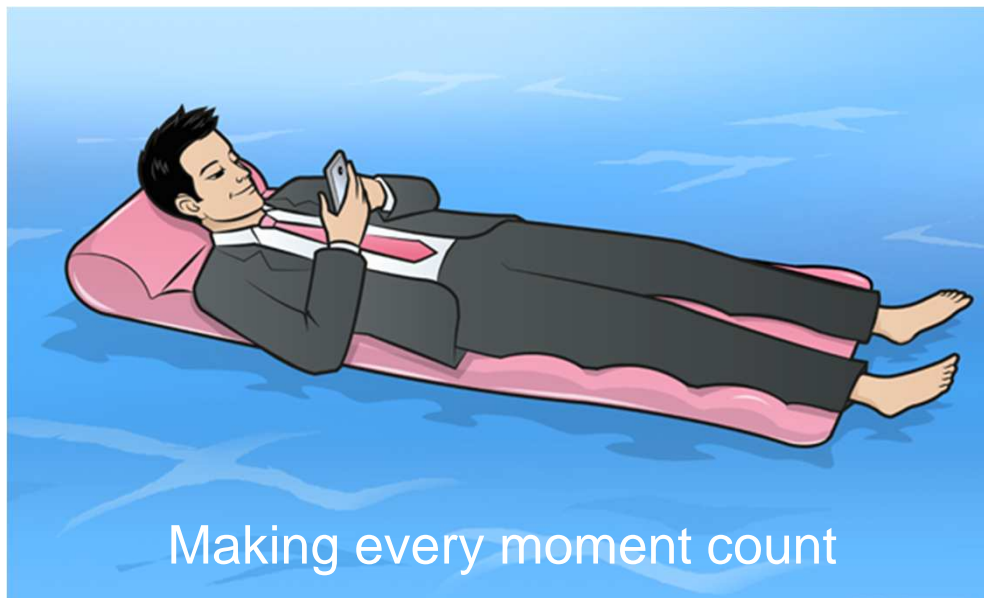


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Maybe I'm a cynic...

- Also provides the freedom to *pretend* to work from anywhere
- Thus, users are **hyper-sensitive** to Traveler downtime



Make Every **Moment** Count



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Make Every **Moment** Count

the top5

Top Five

1. Insufficient HTTP threads
2. Running in “constraint mode”
3. Hung Traveler servlet
4. Status change Green to Yellow or Yellow to Red
5. Insufficient bandwidth between the Traveler server and the mail servers



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Make Every **Moment** Count

#1 Insufficient HTTP Threads

- Mobile Devices talk to Traveler via HTTP
- Every device sync consumes an HTTP thread
- Max number of threads is set in server document
- Default value for 64-bit servers is 400 threads
- Best Practice is $1.2 \times (\# \text{ of devices}) = \text{needed threads}$



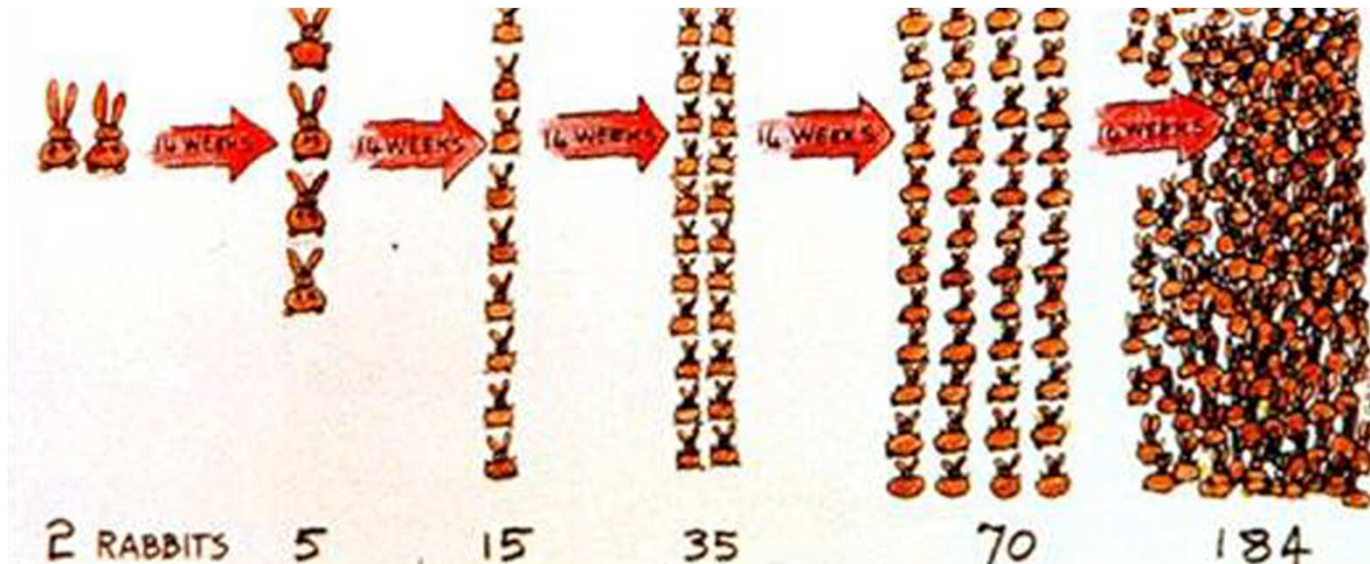
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Why do I have insufficient HTTP Threads?

- Server starts off great, but devices multiply in the night





Symptoms of Insufficient HTTP Threads

- Apple device users may experience "*Cannot connect to server*" messages or slow responsiveness when opening, sending, or synchronizing email contacts, or calendar items and when downloading email attachments
- Other device users may see error *503 (Server busy)* messages, experience sync failures, and general slow responsiveness
- Server CPU cycles diverted to juggling HTTP sessions
 - Who can I drop? Who is next in the queue?





How to Fix Insufficient HTTP Threads

How Many Devices Do I Have?

- At the Domino console on the Traveler server, run the following command:

```
show stat Traveler.Push.Devices.Total
```

- In the output displayed by the command, find *Push.Devices.Total*, which is the total number of devices registered with the server. For example:

```
Push.Devices.Total = 225
```

- In this case, the Traveler server requires at least 270 HTTP threads ($1.2 \times 225 = 270$).





How to Fix Insufficient HTTP Threads

How Many Threads Do I Have?

- At the Domino console on the Traveler server, run the following command:

```
show stat http.workers
```

- In the output displayed by the command, find http.workers, which is the total number of http threads allocated to the server. For example:

```
http.workers = 250
```





How to Fix Insufficient HTTP Threads

Increase HTTP Threads

- The number of active HTTP threads can be changed in the Server document on the **Internet Protocols > HTTP** tab in the **Number active threads** field.
- Ensure there are a sufficient number of concurrent connections allowed.
 - This setting is in the Server document on the **Internet Protocols > HTTP** tab in the **Maximum number of concurrent network sessions** field. Ensure this value is at least equal to or greater than the number of active threads defined.
 - `Tell http restart`





#2 Resource Constraint Mode

- When the system memory or database connections exceed a given threshold, Traveler goes into a constraint mode.
- Once the constraint state is detected, IBM Traveler **will not** allow new device sync or prime sync threads to start but existing threads will be allowed to complete.
- Users experience same symptoms as issue #1:
 - Apple device users may experience "Cannot connect to server" messages or slow responsiveness
 - Android users may see error 503 (Server busy) messages, experience sync failures, and general slow responsiveness





Constraint Mode Limitations

- NTS_THREADS_MINIMAL_DEVICESYNC
 - The default value is 10
 - The number of Device Synch threads allowed to run when in constraint state.
- NTS_THREADS_MINIMAL_PRIMESYNC
 - The default value is 5
 - The number of Prime Synch threads allowed to run when in constraint state.





Detecting Constraint Mode

- At the Domino console on the Traveler server, run the following command:

```
show stat Traveler.Constrained.State
```

- A value of 1 indicates that the server is running in constraint mode while a value of 0 indicates that it is not.





Fixing Constraint Mode

- Sometimes, Traveler fixes itself
 - The system enters constraint mode when **memory conditions** hit the Red state, and exits when it is 5% below the Red entry level.
- Other times, a server restart is required
- Longer term fix: more memory!
 - Physical and JVM as specified on the Traveler tab of the server document





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#3 Hung Traveler Servlet

- The Traveler servlet is the core of Traveler
- Not just for new device provisioning

IBM Traveler

User Status for Alan Forbes/RPRWyatt

IBM Traveler server is available.

Apple-iPad2C1: Last synced at Thursday, June 4, 2015 7:12:29 AM MST and no sync requests from the server are pending.

iPhone 5s: Last synced at Thursday, June 4, 2015 7:12:31 AM MST and no sync requests from the server are pending.



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Symptoms of Hung Traveler Servlet

- Anything that invokes the Traveler servlet may exhibit issues
- Authentication against the Traveler page
- User synchronizations stop
- DDM does not detect this
 - EUC system (end users complaining)
 - Third party monitoring





Fix Hung Traveler Servlet

- Run a manual NSD to obtain a snapshot of what is happening on the server.
- A **quick fix** is to either **tell traveler quit / load traveler** and if that does not work then restart the Domino server.
- Long term, review the NSD
- May indicate need to upgrade of Traveler to fix a known bug that has been experienced or may need to involve IBM support to create a PMR and eventual code fix.





#4 Change in state

- State is Traveler's self assessment of health
- At the Domino console on the Traveler server, run the following command:

```
show stat Traveler.Status.State
```

- In the output displayed by the command you will see the current state, such as:

```
Traveler.Status.State = Yellow
```





Traveler Status

tell traveler status (*on live console*)

The IBM Traveler task has been running since May 15 17:08:37 CET 2015

The last successful device sync was on Tue Jun 2 06:43:01 CET 2015

Yellow Status Messages

The response times for opening databases on mail server CN=Mail1/O=Test are above the acceptable threshold. The response times for opening databases on mail server CN=Mail7/O=Test are above the acceptable threshold.

...

The overall status of IBM Traveler is Red.



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Traveler Status

tell traveler status (*on live console*)

The IBM Traveler task has been running since May 15 17:08:37 CET 2015

The last successful device sync was on Tue Jun 2 06:43:01 CET 2015

...

Red Status Messages

17,238 errors have been logged for user CN=Joe Tester/OU=Test/O=IBM. There have been 3,845 device sync failures for reasons other than the server is too busy.

The overall status of IBM Traveler is Red.





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Traveler State Status Reason

- Remote Console command added in 9.0.1
- Sh stat traveler.status.state.yellow
- Sh stat traveler.status.state.red
- **Sh stat traveler.status.***

(results next slide)



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Show Stat Traveler.Status.*

```
Traveler.Status.State = Red
```

```
Traveler.Status.State.Red = Disk space for C:\Lotus\Domino\data  
has 5 percent free that is less than the threshold of 25.
```

```
Traveler.Status.State.Severity = 2
```

```
Traveler.Status.State.Yellow = Disk space for  
C:\Lotus\Domino\data has 8 gigabytes free that is less than the  
threshold of 10. The SQL130429073724350 table or index has a  
large number (3,105) of pages allocated that are unfilled. You  
should perform a defrag of the NTSDb at the next restart
```

```
4 statistics found
```





Traveler State Serenity Prayer

“Oh IBM Traveler, grant me the peace to accept what I must, courage to change what I can, and wisdom know the difference..”


- Ultimately, Traveler state is a **judgment call**
- Either accept the Traveler state as is OR take mitigation steps
- For example, the Traveler state may be Yellow due to low disk space on the Domino server's data drive. Naturally, the next step is to either call the SAN admin to increase space OR delete databases not needed.





#5 Communication with Mail Files

Make Every **Moment** Count

**Server: azphxdom1/RPRWyatt**
Release 8.5.3FP6 on Windows/2003 5.2 Intel Pentium

- Server Tasks
- Notes Users
- Database Users
- Internet Users
- Server Console
- Schedules
 - Programs
 - Agents
 - Mail Routing
 - Replication
 - DDM

Events
Traveler.DCA.C.ModDoc.SyncableDocs = 2620406
Traveler.DCA.C.ModDoc.Time = 12107649
Traveler.DCA.C.NAMELookup = 5057
Traveler.DCA.C.NSFDbGetNoteInfo = 29433
Traveler.DCA.DB_CLOSE = 108104
Traveler.DCA.DB_OPEN = 108091
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom1/O=RPRWyatt.000-001 = 12580
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom1/O=RPRWyatt.001-002 = 21
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom1/O=RPRWyatt.002-005 = 12
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom1/O=RPRWyatt.005-010 = 4
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom1/O=RPRWyatt.010-030 = 5
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=rprwyatt.000-001 = 22339
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.001-002 = 104
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.002-005 = 68
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=rprwyatt.005-010 = 25
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.010-030 = 3
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.060-120 = 7
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.120-Inf = 1
Traveler.DCA.DB_OPEN.Time.Histogram..000-001 = 8710
Traveler.DCA.DB_OPEN.Time.Histogram..001-002 = 9
Traveler.DCA.DB_OPEN.Time.Histogram..002-005 = 3
Traveler.DCA.DB_OPEN.Time.Histogram..010-030 = 1
Traveler.DCA.DOCUMENT_CLOSE = 109054





#5 Detecting Issues with specific Mail Servers

- Virtually **impossible** for humans

```
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom1/O=RPRWyatt.000-001 = 30
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.000-001 =
132914 Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.001-002
= 98 Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.002-005
74 Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.005-010 = 46
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.010-030 = 36
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.030-060 = 7
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.060-120 = 57
Traveler.DCA.DB_OPEN.Time.Histogram.CN=azphxdom2/O=RPRWyatt.120-Inf = 14
```

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Resolving Mail Server Communication

- Most likely this will be due to a network issue if the Traveler server is different from the mail server.
- Review the network speed between the two servers
- Third party tool like wireshark can assist with troubleshooting





Half-way there!

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About Alan Forbes (aforbes@rprwyatt.com)



Make Every Moment Count

- Author of six books on Amazon
- Attended 20+ Lotusphere/Connect events
- Six IBM Business Partners, now with **RPR Wyatt** (booth 601)
- Creator of **VitalSigns**

VitalSigns Executive Dashboard

5 Not Responding | 15 No Issues | 12 Issues | 0 In Maintenance

Welcome VitalSigns Administrator | Logout

RPR Wyatt

Overall Health ▾ | Server Health ▾ | Key Metrics ▾ | Database List ▾ | Mail ▾ | Reports | Configurator | My Account ▾

IBM Traveler Server Health

Name	Status	Version	Resource Constraint	Details	Heart Beat	Traveler Servlet	Users	HA	Datastore Test Status	Incremental Syncs	HTTP Status	HTTP Threads
azphxdm1/RPRWyatt	Red	9.0.1.8	Pass	10 of 11 users active. Completed 45,189 device and 92,918 prime syncs.	1/25/2016 3:44:03 PM	OK	11			5	OK	OK
azphxdm4/RPRWyatt	Green	9.0.1.4	Pass	0 of 0 users active. Completed 0 device and 0 prime syncs.	1/25/2016 3:43:26 PM	OK	0			1	OK	OK



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Next Five

6. Tell Traveler Available Off
7. SQL Server/DB2 Errors
8. End user password expires
9. IBM Mobile Connect out of date
10. Audience Participation Bonus Round



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#6 Tell Traveler Available Off

- Set available off is used when taking one server in a cluster down for maintenance
- Once the maintenance is over, you have to **set it back**
 - Tell Traveler Available On
 - Tell Traveler HADR Show





Detecting Accidental “Off”

- Best way is to keep an eye on the active user count and incremental sync count
- Third party tools

```
Server.Task = Cluster Replicator: Idle: [01/26/2016 14:56:58 MST]
Server.Task = Cluster Replicator: Idle: [01/26/2016 14:56:58 MST]
Server.Task = Traveler: Running: 10 of 11 users active. Completed 46,611 device and 95,339 prime syncs.: [01/26/2016 14:56:58 MST]
Server.Task = HTTP Server: Listen for connect requests on TCP Port:80: [01/26/2016 14:56:58 MST]
Server.Task = SSReporter: Creating SpamSentinel daily reports: [12/17/2015 06:17:02 MST]
Server.Task = SpamSentinelUpdate: v2.6.2.3 - Loads the latest SpamSentinel updates: [01/26/2016 14:56:58 MST]
Server.Task = SpamSentinelRouter: v2.6.2.9 - Mail: 552 Spam-D: 0 Spam-C: 0 Spam-B: 0: [01/26/2016 14:56:58 MST]
Server.Task = Cluster Replicator: Idle: [01/26/2016 14:56:58 MST]
```

Domino Command:





#7 SQL Errors in the log file

- Traveler HA uses either Microsoft SQL server or IBM DB2 as the back end
- If those servers have issues, Traveler will have issues
- Sometimes SQL errors in the log file will be an indicator of looming trouble





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#7 Fixing SQL Errors

- Most likely, you'll need help from the SQL DBA



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#8 Expired/Changed Passwords

- End user changes password or password policy forces periodic change which did not happen
- End user lock out
- Log file will be an indicator of looming trouble or the user will complain





Fixing Expiring Passwords

- The field Password expiration period allows 0 (zero) as an option. If you set this field to 0 (zero) the password will never expire
 - Some “special” users require this





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Fixing Expiring Passwords

Domino Directory

1 Add Settings... 2 Edit Settings 3 Delete Settings

Search in View 'Policies\Settings'

Search for

Type	Setting Name ^	Description
	12 month mail	Selects mail older than 12 months
	HHDesktop	Desktop Policy
	HHTravelerSettings	HH Test
	HuckArchive	Test of Dynamic Policies
	HuckCriteria	
	Last Modified	Emails were last modied greather than 6 months
	Shared login test	Enablement of Notes shared login
	Six month archive	Archive all documents greater than 6 months old
	Smart Upgrade	
	Standard Desktop Settings	
	Standard Registration Settings	
	Standard Setup Settings	
	Twelve month archive	Archive e-mail greater than 12 months
	User Password	Password must be minimum 8 characters and level 1
	WebPassword	Control the configuration for web passwords



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Fixing Expiring Passwords

Security Settings : WebPassword

Basics | **Password Management** | Execution Control List | Keys and Certificates | Si

Password Management Basics | Notes Shared Login |

Password Management Options

Use Custom Password Policy for Notes Clients	No
Check password on Notes id file	No
Allow Users to Change Internet Password over HTTP	Yes
Update Internet Password When Notes Client Password Changes	No
Don't prompt for a password from other Notes-based programs (reduces security):	No
Enable Windows single sign-on for Standard Notes Client:	No





Fixing Expiring Passwords

Update Internet Password When Notes Client Password Changes	No ▾
Don't prompt for a password from other Notes-based programs (reduces security):	No ▾
Enable Windows single sign-on for Standard Notes Client:	No ▾

Password Expiration Settings	
Enforce Password Expiration	Internet Only ▾
Required Change Interval	2 ▾ days
Allowed Grace Period	5 ▾ days
Password History (Notes only)	0 ▾ passwords
Warning Period	1.6 days

If the Required Change Interval value is less than 30 days, the value is automatically calculated.

Select Keywords

Keywords
Disabled
Notes Only
Internet Only
Notes & Internet





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#9 IBM Mobile Connect

- Major client had Traveler servers regularly going to RED
- Error messages in Traveler were not very descriptive or indicative of the issue
- Updating IMC to the latest made the errors go away... go figure.



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#10 The Bonus Round

- Wake up everyone :)
- Any things that I missed that you would like to share?



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VitalSigns

- Detects all the Traveler problems outlined here
- Easy browser interface

VitalSigns 5 **Not Responding** 15 **No Issues** 12 **Issues** 0 **In Maintenance**

Welcome VitalSigns Administrator | Logout

RPR Wyatt

Overall Health ▾ Server Health ▾ Key Metrics ▾ Database List ▾ Mail ▾ Reports Configurator My Account ▾

IBM Traveler Server Health

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Thank you

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