

## IUG 2017 Polaris System Administration Forum Notes

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### What to expect with the 5.2 Upgrade

1. If you're hosted, contact site manager to help you get scheduled for the upgrade
2. Polaris 5.2 won't work on Windows server 2008 - it's 2012 or above
3. ILL will upgrade the Windows SQL server for you
4. Costs \$600 to prep to upgrade server to new version of SQL
  - a. Follow-Up comment from Mary: Regarding the requirement to be at least on Windows Server 2012 for Polaris 5.2+, I told the forum that Polaris is charging us \$600 to migrate each of our servers from Windows Server 2008 R2 to 2016. It is the same price for us whether we upgrade Windows and SQL on our existing servers or move to new servers. We have five Polaris servers, for a total of  $5 * \$600 = \$3,000$ . One of the forum attendees said their quote was for \$1,000 per server. I asked Vince Messina if the quote was based on the library size. He said no, that every library should receive a quote for \$600 per server, no matter what. Vince recommended that that library ask for a refreshed quote.
5. In 5.2 implementation, one library's staff client disappears, and printers were an issue for first 20-25 days - had to uninstall and reinstall printer app (on the cloud)
6. Another library had problems with RDP (remote desktop) through the client (using terminal server). Part of the consortium is on a different network.
  - a. Had to update RDP when upgraded to 5.2 for it to work. Also had to add something to the registry. Very simple but took a lot of research. Hosted library, but had to do it on their end to get it to work.
7. Follow-up from Wes @CLC:
  - a. If upgrading to 5.2 from 5.0 and you had multiple versions of 5.0 installed, make sure to check with Innovative about the best way to install the desktop application. CLC had problems with our client upgrade from 5.2.
8. Follow-up from Wes @CLC:
  - a. If using age restrictions with Envisionware PCRes, they may fail after the upgrade due to the new PC patron id field that is present in the 5.1 SIP 64 response message. There is a hotfix available for version 4.4.2 of PCRes.
9. Follow-up from Wes @CLC:
  - a. If using Boopsie app with the "old style" screen scraping method, the app may be broken when you upgrade to 5.2. Current solution is to switch Boopsie to using newer PAPI based method for Polaris communication. Ask Boopsie for more information before upgrading.

## Experience with Windows Server 2016

1. Very easy if virtualized to begin with. Stage 2016 boxes, bring up SQL, follow Innovative guides to do the staging. Up and going within 3 hours.
2. There are a few things with DCOM that you can do in 2012 but not in 2016, but Innovative can send you a fix.
3. PAC - if you use IIS Crypto for locking down SSL/TLS settings, there is an issue - but Innovative is adding the workaround to their procedure but it can be a problem if not.

## Analytics tools suggestions?

1. [Tableau](#)
2. [Edelweiss](#)
3. Open source called [Kibana](#) (You can find the slides from the IUG 2017 session “Visualizing your ILS Data with Kibana” by SILS [here](#))
4. BCCLS and CLC - Uses SQL to write own reports and makes them available to library staff via SSRS. Free and included with Polaris.
5. Follow-Up with Wes @CLC: Innovative is also planning on a version of Decision Center called Analytics that would also work for Polaris customers. If you think this might be of interest to you, contact your sales rep and see if you can be a beta tester or part of the product advisory council.

## Ad Hoc system admins - Recommendations for resources for new admins

1. [Safari Live online training](#) - virtual academy. It gives you the actual organized training that most IT people go through, you just won't have the instructor to ask questions of. There are lots of forums, MS is good.
2. [Spiceworks forums](#) are great for asking questions.
3. If you have a training budget, [Stormwind](#) has excellent training courses. Video-based and live, so you can talk to them.
4. For server or RDP, [Microsoft Technet's](#) server section is helpful.
5. [Pluralsight](#), and [Codecademy](#), has SQL courses and also specific training for certifications called Pathways.
6. Lots of free SQL training videos on YouTube

## Is there a forum in the Supportal?

1. Yes, there's a forum.
  - a. New Supportal upgrade in planned Q2, but right now the forums are hard to find and you can't subscribe to them. Located at the bottom of the page.
    - i. Old forum posts were not preserved, but the SQL statements were preserved.
  - b. Several people miss the chat function
2. You can also use the IUG forum on the IUG website.
  - a. You must be a Polaris customer and be logged in to see the Polaris specific forum area. If you don't see the Polaris area after logging in, check with IUG.

## Unusual PAC issue - web connections to the PAC will randomly stop working.

1. Random desktops won't work when the one next to it will. 404 error or internal server error. Polaris thought of looking for Bots, and blocked everything they can. Hits aren't that high. Nothing in packet captures. Web analytics tools didn't uncover anything.

- a. Progressively got worse for another library. Beefed up the RAM, nothing. Blocked Russia and China, nothing. Spun up a new box and migrated over and it worked great. Only for the PAC server. Did remove Leap and then created a virtualized server for that.
- b. Sometimes changing browsers help, sometimes it doesn't.

## Monitoring Tools

1. [Solarwinds](#) is an alternative to Spotlight. Using monitoring end-to-end in network, even RFID gates, has never gone down. Has a dashboard. Can customize with links with colors for bandwidth performance between libraries.
  - a. Network performance monitor, software monitor, IP address manager, and network manager to look at switches. Has made troubleshooting faster.
  - b. 1 license is 3k a year. Based on the number of endpoints.
  - c. Tells how close you are to the limit for server performance.
2. [Spiceworks](#) is another option - not as good as Solarwinds but is free. Shows how to monitor backups, applications, etc. (Derek from Rochester)
  - a. Does do a lot, it's pretty good, but problems with branches that had low bandwidth. Spiceworks wants a lot of bandwidth and will kill performance at smaller bandwidth libraries
    - i. If you run a virtualized server, you can use it to give the readouts through the virtual server software
3. Libraries reported having issues getting [Spotlight](#) to work after it was upgraded. Mary Miller provided additional comments on Spotlight after the forum:
  - a. Dell bought from quest, then recently sold back to Quest, and since then have had better answers and support, and has enabled more features.
4. Mary's follow-up comments on Spotlight:

One of the forum attendees asked me what information I gain by using Spotlight. I tried to describe it, but I think screenshots are best. I told them that our Spotlight doesn't have perfect green status for all areas, but that Spotlight is a good way to justify getting a new server if it doesn't have all green. Obviously I wish all of our statuses in the screenshots were green, but the yellow and red in the screenshots below essentially prove my point. I told the forum that we paid \$450, but we actually paid \$439 this year for one SQL monitoring license and unlimited Windows monitoring licenses. Here are screenshots of the Spotlight Windows and SQL dashboards.

This is the Spotlight **Windows** dashboard for our production Polaris server.



This is the Spotlight **SQL** dashboard for the same production Polaris server.



The messages that show up when you click on a yellow or red box are shown below.

Configuration Health Usage Contention

## Tempdb configuration is **not optimal**

### Consider fixing the following **2** issues

ISSUE 1

#### The number of files is **less than** the number of processors

**WHAT TO DO ABOUT IT**

It is recommended to have as many tempdb files as there are processors if there are 8 or less processors. Otherwise it is recommended to have at least 8 files. Add more files (4 at a time) if contention is experienced.

ISSUE 2

#### File **tempdb** is configured to auto-grow

**WHAT TO DO ABOUT IT**

It is recommended that tempdb files not be set to autogrow.

### And now for the good news...

#### Tempdb growth settings are **consistent**

It is good that the file growth settings for tempdb files are the same as SQL Server favors writing to the file with the most free space. If they were different SQL Server would end up favoring one file, which may cause contention.

#### Tempdb files **are** located **appropriately**

By ensuring tempdb files are stored on different physical volumes from other database files, you are reducing I/O contention.

Configuration Health Usage Contention

In the last hour **Internal Objects** consumed the most space on **tempdb**

At it's highest point, **Internal Objects** consumed **32.25 MB** of disk space at **3:41:52 PM**

In the last hour **version store** **has not grown**

The current size of the **version store** is **0.44MB**

#### Tempdb Space Used

Legend: Free Space, User Objects, Internal Objects, Version Store

**Top 25 Tempdb sessions** collected at 4:09:02 PM

Session ID	Total Space	Application	Host	User	Current SQL

#### Version Store Size Change

Legend: Growth Rate, Cleanup Rate

This data is not available on SQL Server 2012 SP 1 and below

Configuration Health Usage **Contention**

There is **no significant tempdb contention**

**UNHEALTHY** PERFORMANCE HEALTH RATING IS **65%**

How is a performance health rating calculated?

Current wait rate is **282 ms/sec**

Which is **1.2%** of total available CPU time

This is because excessive time is spent waiting on **Latch, Network** and other things

**Instance Wait Time**

Click on a bar in the chart above to drilldown and see details for each Wait time category, excluding CPU.

**CPU and I/O**  
Spending time on CPU and I/O is the best indicator that the database is performing useful work. Therefore, these bars should be large. For example, an OLAP database may spend most time on CPU while an OLTP database may spend most time on I/O. Either way, you ideally want at least 95% of all time spent waiting to be on CPU or I/O.

I have asked Polaris to rebuild the indexes with 90% fragmentation or higher, but they have refused, saying these indexes will always have a high fragmentation.

**Fragmented Indexes** collected at 4:13:59 PM

Database Name	Owner	Table Name	Index Name	Average Fragmentation
PolarisTransactions	Polaris	TransactionDetailStrings	SK_U_TransactionString_TransactionStringID	99%
PolarisTransactions	Polaris	NotificationLog	SK_NotificationLog_PatronID	98%
Results	Polaris	NotificationHistory	SK_NotificationHistory_ItemRecordID	98%
PolarisTransactions	Polaris	NotificationLog	NotifcationLog_IDX	95%
Results	Polaris	NotificationHistory	IDX_PatronID	92%
Results	Polaris	NotificationHistory	SK_NotificationHistory_PatronID	88%
Results	Polaris	NotificationHistory	SK_NotificationHistory_PatronID_ItemRecordID	83%
Results	Polaris	NotificationHistory	SK_NotificationHistory_NotificationTypeID	75%
Results	Polaris	NotificationHistory	SK_NotificationHistory_TxnID	70%

Polaris tech support is planning to schedule time with me to reconfigure the Tempdb database.

Severity	Alarm	Message	Raised	Cleared
Low	Tempdb Auto Growth	Tempdb file tempdb is set to auto grow. It is recommended that files in Tempdb have a fixed size.	4/5/2017 3:45:06 AM	
Medium	Index Fragmentation	There are large indexes that require rebuilding	4/5/2017 4:16:52 AM	
High	Poor Performance Health	Server is experiencing poor performance. Its Performance health score is 64.55.	4/5/2017 9:52:06 AM	
Information	Disks - Transfer Time	Transfer time for disk 2 F: is 212.84 ms	4/6/2017 4:14:52 PM	

### Disks - Transfer time alarm

Disk transfer time measures the time it takes in milliseconds to transfer data between disk and memory. The metric includes disk reads and disk writes.

If disk transfers are taking consistently longer than 50 milliseconds a disk bottleneck may be developing. The Disks - Transfer Time alarm is raised when the transfer time exceeds 50 milliseconds

When this alarm is raised

Refer to the [Windows Server | Disks Drilldown | Physical Disk Activity page](#) | Transfer Time chart.

[Search Support Knowledge Base](#) for more information about this alarm.