Your Current Monitoring Is Not Enough

The Business Benefits of Proactive Monitoring with ProTop

White Star Software

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Why Are You Here?

Common pain points:

- USERS are de facto monitoring service
- *__Stuff__* happens…then stops. No idea what/why
- Zero visibility into root cause of issues
- Zero visibility into effect of changes

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Why ProTop? Why WSS?

- We have lived and breathed the Progress DBA life for over 30 years, and we still love it

- We are the first and most avid user of ProTop
  - It is part of our day-to-day professional life

- Our tools are built by and for technical experts

Who Is White Star Software?

Tom Bascom, Adam Backman and Dan Foreman

- GIANTS in the Progress world since the late 80's / early 90's

Paul Koufalis, Nectarios Daloglou and JC Bellemare

- The new kids on the block

What Our Partners Say

"At MIP we have a challenging environment for our DBAs, who administer well over 1,000 databases across our internal development teams, and our 60+ customers. As a tool, ProTop is unparalleled. We are able to spot and resolve issues incredibly quickly, and we have often been able to avert problems before they materialise. As a company, White Star provides us with a level of responsiveness, and depth of expertise, that we simply don't find with other partners. Implementing ProTop is probably the best decision we made this year!"

Patrick O'Reilly
—
Chief Technology Officer
MIP Holdings (Pty) Ltd

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Let's Get Started

What is ProTop ?

- Flexible, highly configurable alerting system
- Single-pane-of-glass web portal
- Years of trend history at your fingertips
- Real-time monitoring console

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Flexible Alerting

- Hundreds of available metrics
- Unlimited threshold definitions
- False alarm avoidance features
- Multiple alerting levels
  - Reduce spam/noise: configure where alerts go
- Automated script response
- Alert Enrichers
  - Time-consuming information gathering executed automatically

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Flexible Alerting

- Simple text-file configuration
  - quick and easy to maintain and deploy
- Hierarchical alerting structure
  - Global default configuration
  - Or specify by environment, server, database, etc.

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Flexible Alerting

```
Metric  Threshold  SS      Notify    Message             Action
======  =========  ==      ========  =================== ====================
otrx    num  > 7200 ""       "hourly" "Old Tx &1 &2 &3" zOldTRXDetails,alarm
ztime   num  >  300 ""       "hourly" "Blocked &2 &3 s" zBlockedDetails,alert
HR      num  < 98    "3:3" "hourly" "Hit% &2 &3 (&1)" alert

asMode  char = "Not Running"  "2:2" "hourly" "&1 &2 &3" script,alarm
```

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Flexible Alerting

- Built-in Monitoring Agents for OpenEdge components

- Built-in log file monitor

- Easily extendable to monitor almost anything

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Alert Enrichers

```
ztime Session blocked > 300 seconds
[2018/10/10 08:56:06.874-07:00]
[server: MyServer]
[dbname: /db/prod/demo344.db_4007]
[cfgname: xyzcorp]
```

```
Usr Name PID     Flags Duration Wait  Resrc Id
=== ==== ====== ===== ======== ======= =========
 76 mfg  29858  SAB*  00:10:00 REC XQH 69184005 sod_det 147:/dev/pts/95:10658 ?  109
109 mfg  29952  SAB*  00:10:00 REC XQH 69184005 sod_det 147:/dev/pts/95:10658 ?  76
```

Continuous Evolution

- ## User Experience Metrics

Continuous Evolution

- SyncIO Trending
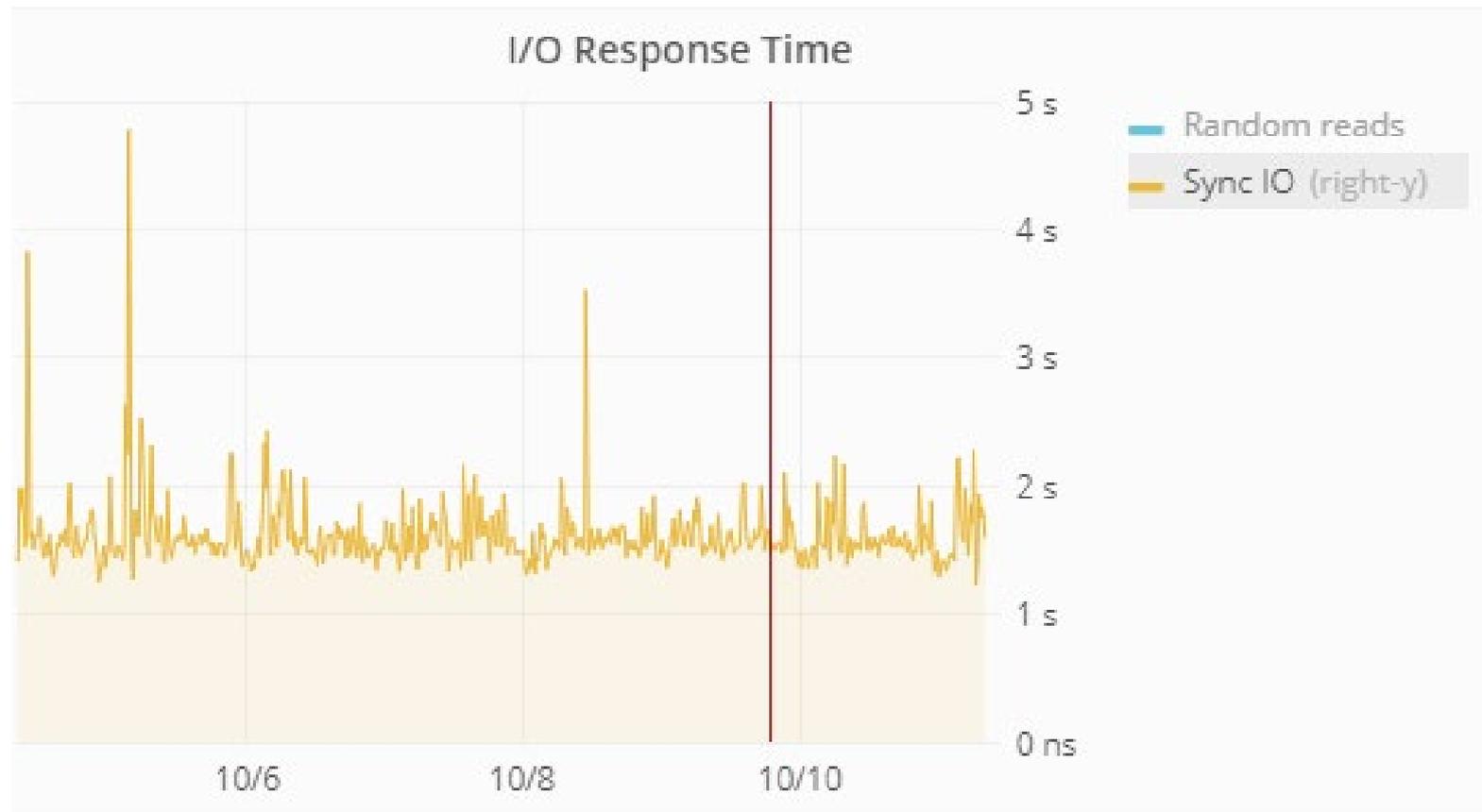
Continuous Evolution

- Custom Application Metrics

Single Pane of Glass

Web Portal

- Alert enrichers provide crucial details

Alerts Feed

14:16:41	z1061.toto
14:16:35	z1061.toto
14:16:29	z1061.toto
14:16:24	z1061.toto
14:16:19	z1061.toto
13:42:24	z1061.toto
13:42:19	z1061.toto

tblTurn Table turns/sec 259.57 > 10

```
otrx Old Transaction 7307 > 7200
[2018/10/11 04:46:26.690-05:00]
[server: MyServer]
[dbname: /db/prod/sands.db_3510]
[cfgname: xyzcorp]
```

Usr	Name	PID	Device	Flags	Duration	Wait
35	xia	24393	/dev/pts/38	S4 *	02:01:48	
27	spack1	12776	/dev/pts/21	S4 *	01:04:35	
40	produi	10435	/dev/pts/25	S4 *	00:00:00	
22	produi	11752	/dev/pts/20	S4 *	00:00:00	
36	produi	13484	/dev/pts/29	S4 *	00:00:00	
14	produi	16813	/dev/pts/12	S4 *	00:00:00	

```
ztime Session blocked > 30 second
[2018/04/24 13:42:19.790-04:00]
[server: protopdev]
[dbname: /home/paul/toto/toto]
[cfgname: toto]

usrnum=8 tId=0 userName=paul user
By=7 xtime=49218
```

Usr	Name	PID	Fl
8	paul	20201	S4

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Years of History
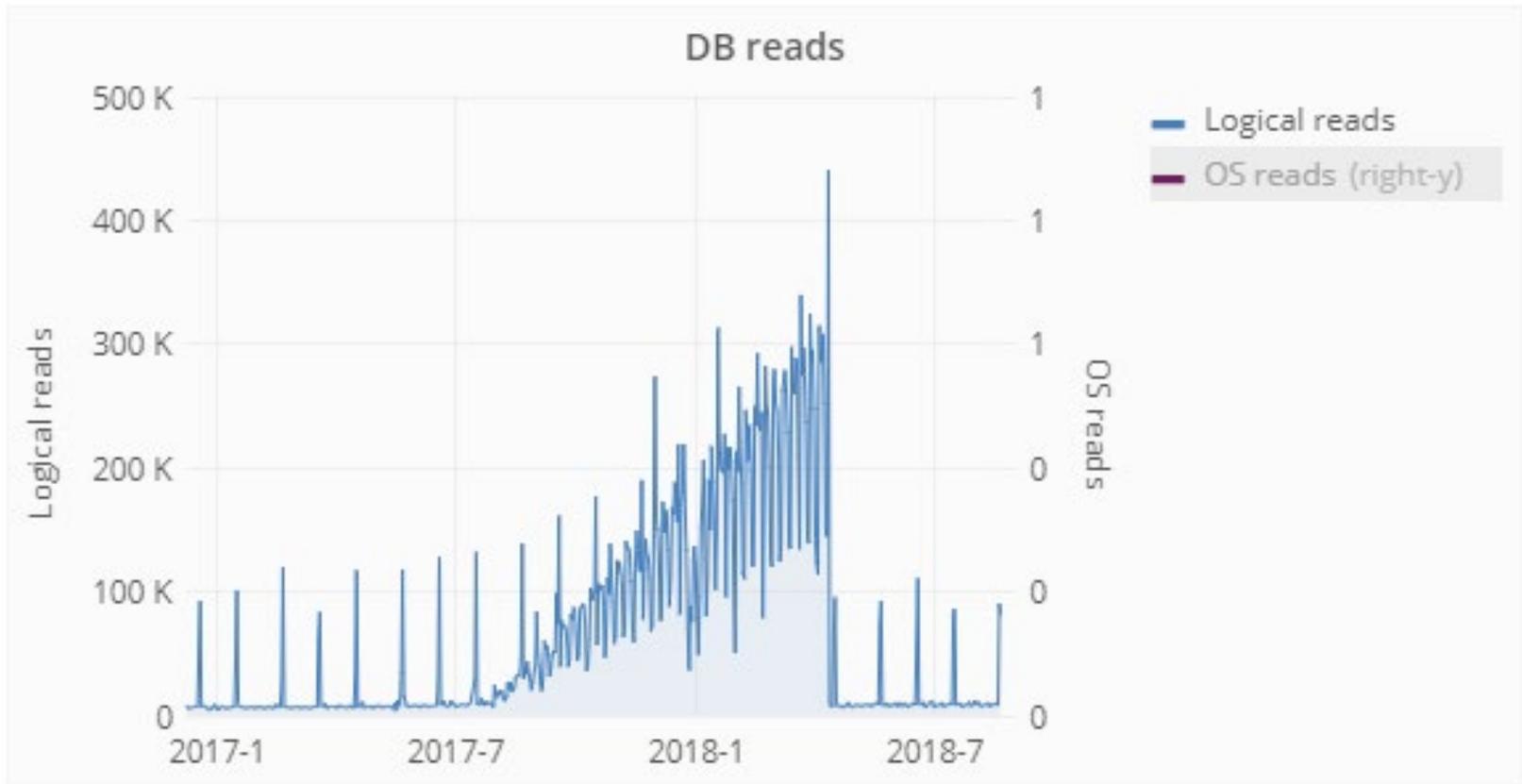
Table and Index Statistics

Record reads
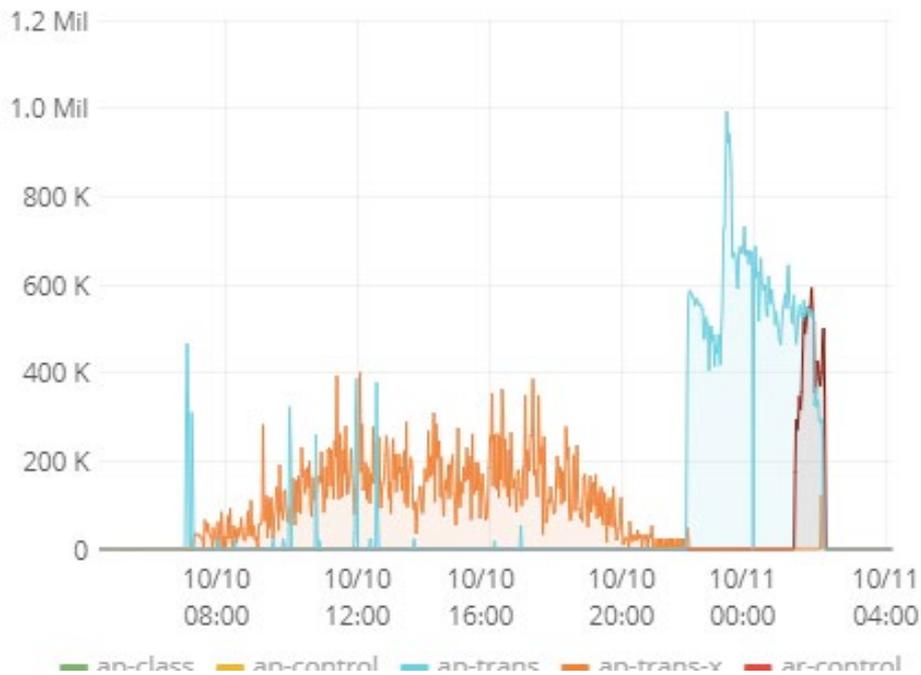
Turn
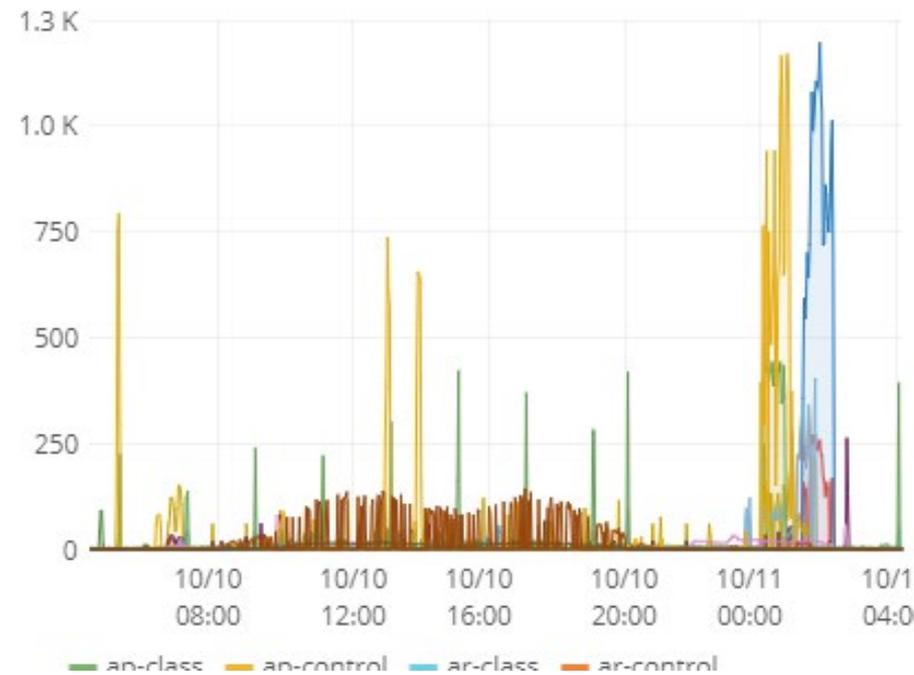
Table and Index Statistics
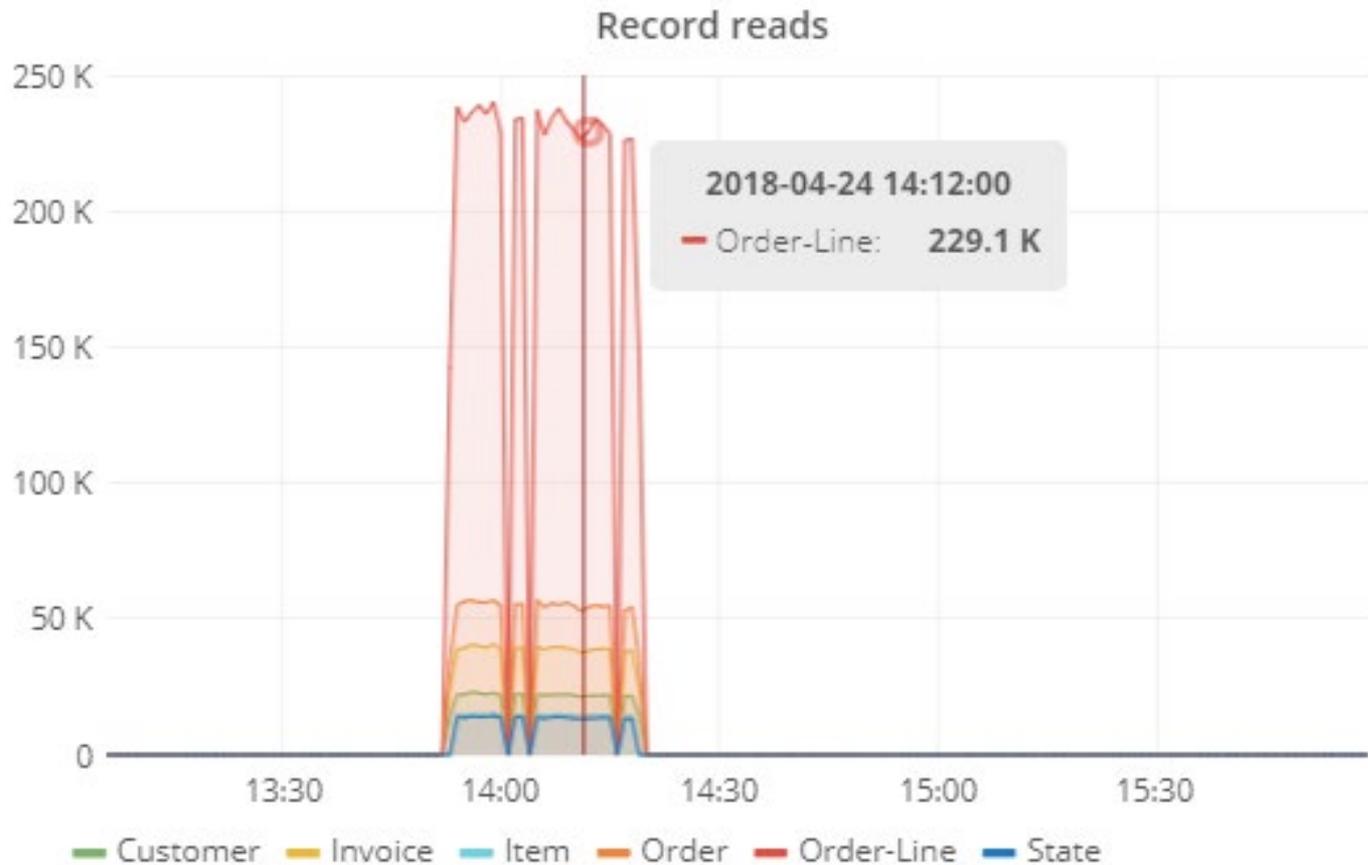
Hundreds of Trended Metrics

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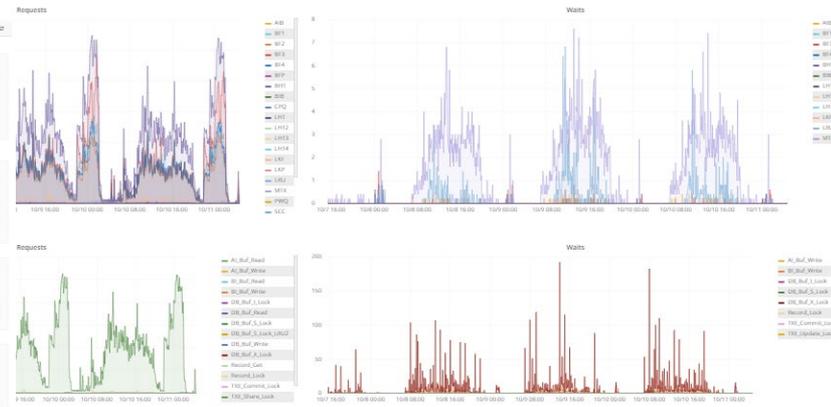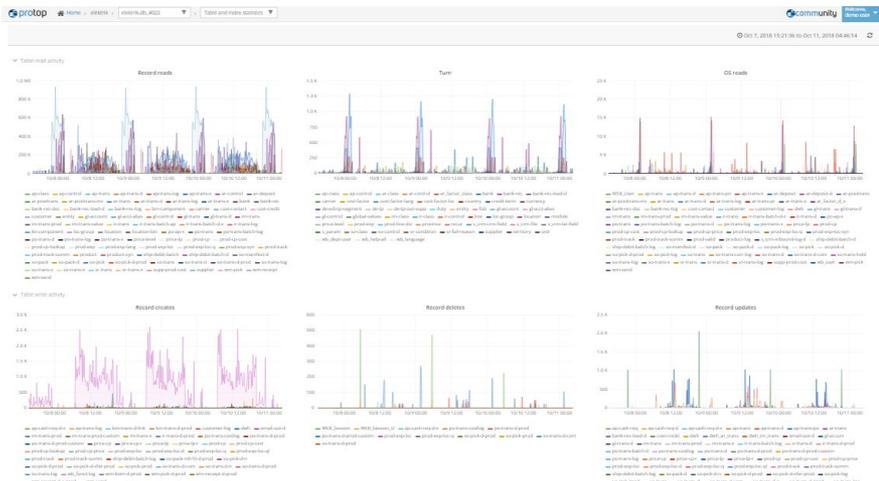
Real-Time Console

```
toto Auto Interval Rate JSON 11106 0 0.549        ProTop Version 3.3tx as of September 12, 2018 11:25                    2018/10/11 06:10:59
toto 0 0                                                   /home/paul/toto/toto                                                   protopdev
u #Udtiu
        Hit%      100.00          Commits:        0     Examined:        0    APW Writes:        0         DB UpTime:  29d 21:44    Connections:        3
  Log Reads:      3600             Undos:        0      New RM:          0    APW Write%         0         Backup Age: 300d 16:11          -n %       14
   OS Reads:        0                               From RM:             0    Bufs Scanned:      0                                    Brokers:         1
  Rec Reads:      1696      Lock Tbl HWM:        694   RM Locked:        0    APW Scan Wrs:      0         Oldest TRX:  00:00:00   4gl Servers:        0
  Idx Reads:      1696      Curr # Locks:          0   From Free:        0    APW Q Wrts:        0         Curr BIClstr:        0   SQL Servers:        0
 LogRd/RecRd:     2.12          Lock Tbl%       0.00%   Front2Bk:        0    Chkpt Q Wrts:      0         Old BIClstr:         0   4gl Clients:        2
 Log Writes:        0            Rec Lk/s:                                     Flushed Bufs:      0        Num BIClstrs:        0   SQL Clients:        0
  OS Writes:        0        Lk Dura (ms): ?         Mod Bufs:           30    Chkpt Len:                  BI MB Used:          0    App Server:        0
 Rec Creates:       0                                  Evicted:           0                                                          Web Speed:        0
 Idx Creates:       0                                                                        BI    AI     Curr AI Ext:     1 of 3  BIW/AIW/WDOG:  0 0 0
 Rec Updates:       0                                               Notes:     0     0       Curr Seq#:            16    AI Mgmt:         0
 Rec Deletes:       0    Sync IO (sec):       0.00           BI/AI Write%:     0     0        Empty AI:             0       APWs:          0
 Idx Deletes:       0   Random IO (ms):       0.19           Wrts to Log:     0     0         Full AI:             2       Local:         1
 Idx Blk Spl:       0         BogoMIPS:       2.30           BI/AI Wrts:      0     0                                      Remote:        0
                         User Exp SHM:       51519           Partial Wr:      0     0         Locked AI:            0      Batch:         1
  Rec Waits:        0                                         Busy Waits:      0     0         pica Used:            0       TRX:          0
 Resrc Waits:       0                                         Empty Wts:       0     0         pica Used%         0.00     Blocked:        0
 Latch Waits:       0
```

```
                                            Table Activity
   Tbl# Area# BX Table Name          RM Chain   #Records  Frag% Scat     Churn  AvgRow   Create   Read v   Update   Delete   OS Read

 >    1     7 B1 Invoice                          147     0.00%    2     0.00      38       0      0        0        0        0
      2     8 B1 Customer                  1        83     0.00%    1     0.00     149       0      0        0        0        0
      3     7 B1 Item                               55     0.00%    1     0.00      93       0      0        0        0        0
      4     8 B1 Order                     6       207     0.00%    1     0.00      57       0      0        0        0        0
      5     8 B1 Order-Line                1       873     0.00%    1     0.00      36       0      0        0        0        0
                                            Index Activity
   Idx# Area# BX Index Name              Blocks   Util Lvls   Idx Root   Note   Create   Read v   Split   Delete   BlkDl

 >    1     6 B1 _File._File-Name              0   0.00%   0       128    P        0      306       0        0        0
      2     6 B1 _Field._File/Field            0   0.00%   0       256    PU       0      306       0        0        0
      5     6 B1 _Index._File/Index            0   0.00%   0       384    PU       0      306       0        0        0
      6     6 B1 _Index-Field._Index/Number    0   0.00%   0       480    PU       0      306       0        0        0
      3     6 B1 _Field._Field-Name            0   0.00%   0       288    U        0        0       0        0        0
                                            User IO Activity
   Usr# Tenant Name         PID     Flags Blk Ac v   OS Rd   OS Wr    Hit%   Rec Lck  Lk HWM   Line# Program Name

 >    6      0 paul protop   10322   PT3      26        0       0   100.00%       0        3     771 lib/vstlib.p
      5      0 paul pt3agent 27087   PT3       0        0       0   100.00%       0        3
```

Zoom in on One User

```
toto Auto Interval Rate JSON 9769 0 0.037          ProTop Version 3.3tx as of September 12, 2018 11:25                    2018/10/11 06:10:21
toto 0 0                                                /home/paul/toto/toto                                                    protopdev

 Login Name: paul            Login Time: Thu Oct 11 05:54:59 2018          Logical Rd:         0      BI Reads:          0
       Usr#: 6               Device/IP: /dev/pts/0                         Disk Reads:        0      BI Writes:          0
 Connect Id: 7               Full Name:                                         Hit%      100      AI Reads:          0
        PID: 10322               Phone:                                    Logical Wr:        0      AI Writes:          0
     Server: 0                  E-Mail:                                                            Record Locks:       0
Session Info: ABL SELF PT3
   TRX Info: --None--
```

```
                                            Session Table Activity
  Tbl# Area# Table Name                RM Chain   #Records    Frag% Scat    Turns AvgRow    Create    Read v    Update    Delete    OS Read

>    1     7 Invoice                                   147    0.00%    2     0.00     38         0         0         0         0         ?
     2     8 Customer                        1         83    0.00%    1     0.00    149         0         0         0         0         ?
     3     7 Item                                       55    0.00%    1     0.00     93         0         0         0         0         ?
     4     8 Order                           6        207    0.00%    1     0.00     57         0         0         0         0         ?
     5     8 Order-Line                      1        873    0.00%    1     0.00     36         0         0         0         0         ?
     6     7 Salesrep                                    9    0.00%    1     0.00     83         0         0         0         0         ?
                                            Session Index Activity
  Idx# Area# Index Name                      Blocks     Util Lvls   Idx Root   Note    Create    Read v     Split    Delete    BlkDl

>   32     7 Ref-Call.Txt                        1    55.10%    1        512               0         0         0         0        0
    31     7 Ref-Call.Sibling                    1     4.40%    1        480    U          0         0         0         0        0
    30     7 Ref-Call.Cust-Num                   1     4.20%    1        448    U          0         0         0         0        0
    29     7 Ref-Call.Call-Num                   1     3.20%    1        416    PU         0         0         0         0        0
    28     6 Local-Default.default               1     0.60%    1      11616    P          0         0         0         0        0
    27     7 State.State                         1    11.90%    1        384    PU         0         0         0         0        0
                                            Session 4GL Call Stack
  Dep v  Line# Program Name

>    1    644 connectFlags lib/vstlib.p
```

```
                                            User's Other Sessions
  USR v    PID Flags Server Device/IP Address Login Time      Line# Program Name

>    5  27087 PT3       0                      Sep 14 11:49:27     0
     0  26594 LX        0 /dev/pts/3           Sep 11 08:26:26     0
```

#1: To Kill or Not to Kill

- Old Transaction + BI Growing
- Alert at 2h, alarm at 4h and page at 6h
  - DBA notified by SMS
- Trend data shows 13K read/sec in one table last 28 hours
  - Near zero write activity
- Real-time monitor confirmed inactive process running one line of code
- Safe to SIGINT

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#2: Still running !?!

- Overnight batch jobs not finishing by morning

- History shows chain taking longer and longer to run

- Customer only noticed when critical information not available to morning shift

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#2: Still running !?!

- What happened on Aug 1? CODE CHANGE!
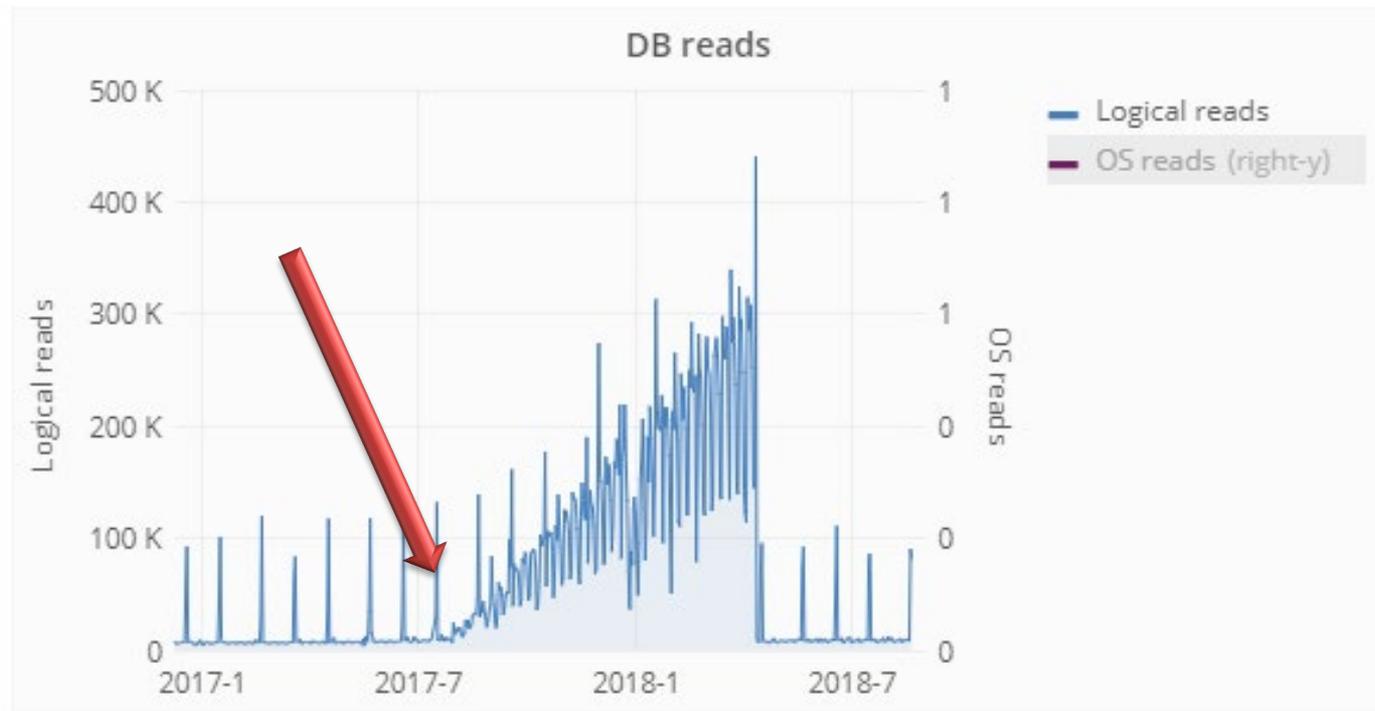
#3: False Alarm?

- Spotty network between replication source and target

- OE Replication interruptions common

- Decrease sensitivity from 1:1 to 3:3, i.e. only generate alert if 3 failures in three samples

- Two SMS alerts generated: Replication down AND no heartbeat on target.
  - This is no false alarm! Power outage at DR site.

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Questions?

Wrap-Up

- No other monitoring tool provides the depth and breadth of information provided by ProTop

Thank You!

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ProTop

The #1 OpenEdge Database Monitoring Tool

https://protop.wss.com

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- The oldest and most respected independent DBA consulting firm in the world

- Four of the world's top OpenEdge DBAs

- Author of ProTop, the #1 FREE OpenEdge Database Monitoring Tool
  - https://protop.wss.com

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