

# Health-monitoring console

PUG Challenge 2024 – 09/19/2024

# // Our business



A single point of contact for a responsible service

## // Our ERP software

# PROGINOV // ERP Universe



## / Business solutions

- Commerce
- Industry
- Distribution
- Retail
- E-commerce
- Job-based Subcontracting
- Agro-food
- Clothing and Textile
- Construction and Civil Engineering
- Garages et Workshops
- Packaging
- Timber Trade
- Industrial Joinery
- Horticulture Industry
- Health



## // Proginov Datacenters

### / Proginov 1<sup>st</sup> french hosting publisher

- 2 Data Centers
- More than 3 500 servers
- 5 power generators
- Fire protection system
- Secure access with badge
- 3 telecom providers

### / Monthly connexions

- ~13 000 concurrent uses
- ~31 000 connections per month

# // Workforce

**344**

people (June 2024)

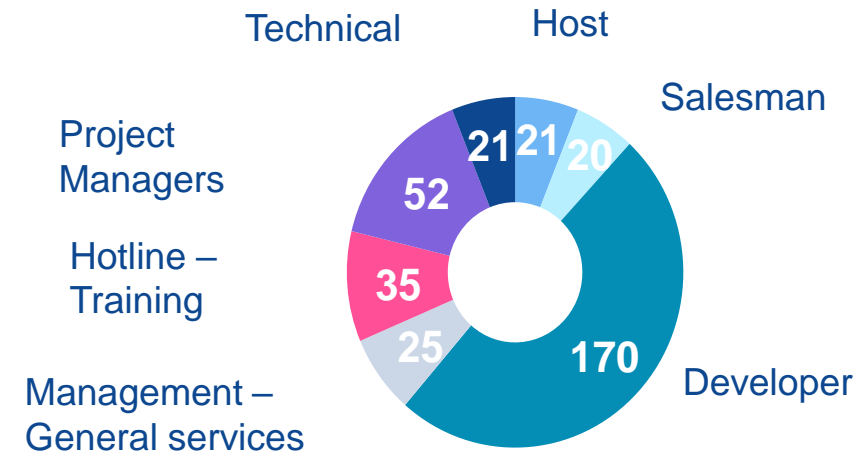
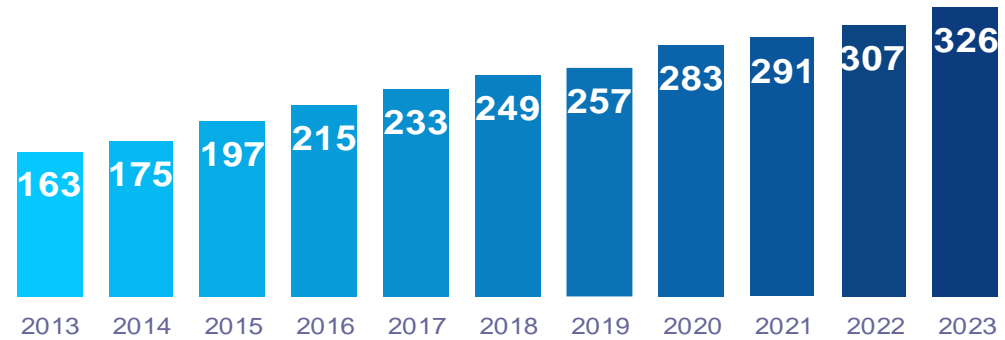
**36**

average age

**≈ 2 %**

people turnover

## Workforce



## // Who are we ?



Adrien FRAISSE  
[afraisse@proginov.com](mailto:afraisse@proginov.com)

- / Progress developer and work for Proginov since 2012
- / In DevOps team since 2018



Patrice PERROT  
[pperrot@proginov.com](mailto:pperrot@proginov.com)

- / Progress developer since 2001
- / Optimize Progress sources since 2005
- / Work for Proginov since 2008
- / In team of Proginov DBA since 2010

## // Our problematic



/ + than 1300 customers

/ + than 14 000 databases

/ + 200 000 r-code

→ Where are the issues ?

# Our tips and tricks



# // General presentation



- / Analysis
- / Priorisation
- / Alerts



5'

## // Which prorisation for DB



# // General presentation



- / Analysis
- / Priorisation
- / Alerts



5'

# // General presentation



- / Analysis
- / Priorisation
- / Alerts



5'

# // General presentation



- / Analysis
- / Priorisation
- / Alerts



5'



# // General presentation



/ Analysis  
/ Priorisation



# // General presentation



/ Analysis  
/ Priorisation

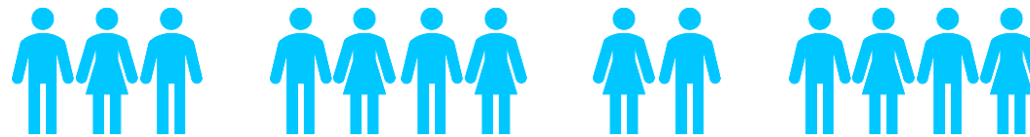


# // General presentation



/ Analysis

/ Priorisation





# // General presentation



 / Metrics  
/ Interpretation



## // Which prorisation for users



1

Access

2

Rec reads

3

Reads

4

Rec locks

5

CUD



Relevé global sur 1 H

Date Time +1 H + 5 min 719163 le 09/09/2024 à 12:20:35 - 5 min -1 H ASP  Autres dom. Protracore J-1 (3008) Activate automatic refresh refresh

Type d'information	12:20:35	12:15:27	12:10:14	12:05:06	11:59:52	11:54:43	11:49:35	11:44:25	11:39:16	11:34:08	11:28:54	11:23:44
Type	à	à	à	à	à	à	à	à	à	à	à	à
Db Number	14,820	14,820	14,820	14,820	13,909	14,820	14,820	14,820	14,820	14,820	14,820	14,820
DB Start	10,381	10,377	10,373	10,371	9,734	10,350	10,346	10,323	10,290	10,284	10,282	10,264
SIZE DB	26,338	26,337	26,335	26,334	25,177	26,329	26,329	26,326	26,323	26,323	26,323	26,317
SIZE BI	353	353	353	353	333	353	353	353	352	352	352	352
SIZE AI	3	3	3	4	4	4	3	3	6	6	5	4
Nb Connections	207,061	207,629	208,143	208,489	198,203	208,298	208,240	208,179	207,627	207,050	206,986	206,651
User wait	8	17	9	10	7	3	1	24	7	8	2	7
_mprosrv start	33,278	33,270	33,259	33,246	31,387	33,174	33,147	33,105	33,064	33,052	33,037	32,974
_mprosrv Used	26,385	26,392	26,385	26,384	24,983	26,280	26,251	26,223	26,191	26,189	26,238	26,168
Nb trans.	246	279	306	275	268	290	272	302	326	290	287	297
Trans DURAT	1,617	1,315	999	711	397	127	340	77	458	56	34	79
Nb locks	44,344	42,950	44,390	43,790	41,170	44,926	35,827	36,790	37,668	39,252	37,639	36,284
Access	1,679,222,392	1,861,987,807	2,045,349,594	1,740,664,049	2,188,650,536	2,024,845,150	1,983,833,077	2,262,510,989	1,993,937,559	2,116,145,571	2,197,477,081	2,272,079,098
DbReads	84,046,146	100,697,755	102,987,870	98,260,707	103,424,335	108,001,770	117,704,697	141,409,131	129,010,770	140,216,678	122,949,764	127,205,269
RecCreate	933,819	923,426	1,051,729	755,486	1,258,514	1,073,865	1,062,152	966,557	1,184,300	1,040,223	1,084,574	1,190,713
RecRead	770,557,736	841,806,843	917,182,771	770,457,557	971,431,352	931,172,585	892,650,372	1,020,414,552	923,677,302	954,621,670	1,003,611,505	1,006,715,040
RecUpd	2,168,437	2,117,217	2,272,901	2,102,249	2,698,137	2,382,404	2,131,892	2,864,290	2,260,946	2,497,801	2,161,908	2,181,641
RecDel	720,325	751,483	839,514	650,918	969,099	772,363	918,017	879,784	993,526	847,889	918,178	1,016,775
RecLock	77,626,796	81,537,537	78,903,024	70,331,127	83,827,669	20,639,991	20,780,076	21,125,028	21,381,581	21,033,915	21,927,864	20,755,584
Latch	2,315,603	2,150,540	2,167,245	2,215,067	2,150,137	1,750,751	1,486,051	1,685,695	1,677,919	1,612,163	1,656,093	1,668,353
Alerts								2				
Machine												
FuitePgm												
persistent												
protrace	321	2		3	4	1	4	2	10	2	9	
uniq_id	719,163	719,162	719,161	719,160	719,159	719,158	719,157	719,156	719,155	719,154	719,153	719,152

last hour
  Last metric
  -5 min
  -10 min
  -15 min
  -20 min
  -25 min
  -30 min
  -35 min
  -40 min
  -45 min
  -50 min
  -55 min

heure	base	machine	Surv by	repertoire	val_mes
12:20:35	spew0695	dblnxasp34	ppe, PMU	/poolprod/pug2023/	224,476,694
12:20:35	gcow0450	dblnxasp04	ppe	/poolprod/gbisreno/	167,850,360
12:20:35	gcow0410	dblnxsante01	ppe	/poolprod/gnhc/	67,269,845
12:20:35	gcow0225	dblnxasp03	ppe	/poolprod/gthiebaut/	54,751,364
12:20:35	glmcweb	dblnxlmc02	ppe	/poolprod/glmcweb/	54,145,287
12:20:35	pocw0501	dblnxasp20		/poolprod/gvpe/	36,917,543
12:20:35	gcow0501	dblnxasp20	ppe	/poolprod/gvpe/	31,524,228
12:20:35	gcow0376	dblnxasp10	ppe	/poolprod/gmilan/	31,294,403
12:20:35	ged0761	dblnxasp08	ppe	/poolprod/gmillet/	27,125,531
12:20:35	gcow0560	dblnxasp04	ppe	/poolprod/glargo/	24,686,474

User Monitoring sur DBLNXP34 base SPEW0695 vers 12:20:35 repertoire poolprod/pug2023/ (ppe, PMU, ppe, ppe, ppe)

User	heure	N° seq	Connect-Name	PID	DB ACCES	DB Reads	Create	Read	Update	Delete	lock	lk No Satisfy	Device	_Connect-Id	Connect-L
719.163	12:19:28	117	PNV PPE	33,444	6,602,278	2,386,335	0	3,297,454	0	0	0	0	D4APP032	7	
719.163	12:18:58	116	PNV PPE	33,444	5,736,369	2,076,944	0	2,864,902	0	0	0	0	D4APP032	7	
719.163	12:18:28	115	PNV PPE	33,444	5,403,093	1,962,064	0	2,699,234	0	0	0	0	D4APP032	7	
719.163	12:17:58	114	PNV PPE	33,444	5,780,715	2,093,323	0	2,887,077	0	0	0	0	D4APP032	7	
719.163	12:17:28	113	PNV PPE	33,444	5,233,094	1,901,127	0	2,613,617	0	0	0	0	D4APP032	7	
719.163	12:16:58	112	PNV PPE	33,444	5,306,288	1,927,637	0	2,650,265	0	0	0	0	D4APP032	7	
719.163	12:16:28	111	PNV PPE	33,444	5,393,125	1,956,391	0	2,693,541	0	0	0	0	D4APP032	7	
719.163	12:15:58	110	PNV PPE	33,444	6,291,028	2,273,647	0	3,142,450	0	0	0	0	D4APP032	7	
719.163	12:15:28	109	PNV PPE	33,444	5,673,103	2,060,366	0	2,833,590	0	0	0	0	D4APP032	7	
719.163	12:20:28	119	PNV SL	808	10,674,116	835,178	0	5,334,481	0	0	5,334,897	0	D4APP030	23	
719.163	12:19:58	118	PNV SL	808	12,485,256	976,038	0	6,241,170	0	0	6,240,294	0	D4APP030	23	
719.163	12:19:28	117	PNV SL	808	13,278,716	1,012,203	0	6,634,324	0	0	6,636,650	0	D4APP030	23	
719.163	12:18:58	116	PNV SL	808	13,562,128	1,047,493	0	6,780,891	0	0	6,778,446	0	D4APP030	23	
719.163	12:18:28	115	PNV SL	808	12,049,436	945,882	0	6,020,216	0	0	6,022,178	0	D4APP030	23	
719.163	12:17:58	114	PNV SL	808	13,115,407	1,034,369	0	6,555,483	0	0	6,555,210	0	D4APP030	23	
719.163	12:17:28	113	PNV SL	808	11,419,941	887,035	0	5,707,490	0	0	5,707,851	0	D4APP030	23	
719.163	12:16:58	112	PNV SL	808	11,458,244	898,161	0	5,726,960	0	0	5,726,584	0	D4APP030	23	

Refresh Quit

Apres Avant +/-: 0

mail Destinataire

USER:  Choix usr

DB ACCESS  
 DB Reads  
 Locks  
 locks No Satisfy  
 Create  
 Read  
 Update  
 DELETE  
 USR/PID/Heur

Perf09

IDX\_REQ2

```

740 READ_order_orderline pgm_1
782 read-data pgm_1
573 proc-btn-acces pgm_1
435 USER-INTERFACE-TRIGGER pgm_1
498 pgm_1
1 p:\protemp\PNV\PPE\p02863_Untitled1.ped
    
```

Voir le source ProPath Dir log Voir le Prolab Rechercher Prolab CNX à une base Param-name:  Requetteur

Type	dl	pi	Objet	Table	Create	Read	Update	Delete	Nb Rceord
-ASP			pgm_1	OrderLine		3,142,318			1,506,383
				Order		132			3,953

DbParams-label	DbParams-Value
-spin	1
-B	3000
-B2	0
-rnskips	30
-ru2skips	100
-nap	1
-napmax	250
-aibufs	64

Trace	Date	Heure	Taille	PID

ID	Wait	LOCK	Commentaire
999	51,848,318	224,476,694	DB READS / Db ACCESS
997	506,534	1,018,484,534	TOTAL LATCH
23	497,639	55,469,953	MTL_LRU - Buffer Pool LRU Chain Latch. Protects the LRU chain in Primary Buffer Cache
998	38,106		Nb Transact / UPD
20	7,796	216,408,847	MTL_BHT - Buffer Hash Table Latch. Latch family of 256 (since 10.1C)
18	740	122,470,209	MTL_LKF - Lock Table Free List Latch.

Point	Date time	detection	typ	Valeur de l'alerte
TRANS DU	09/09/2024	15:23:37.613	ANA	03:27:38
USER Wai	09/09/2024	12:20:37.769	ANA	PNV_SL // REC // 3329 // 21 // 596 // 20 // X L // Item // PNV_SJA // 2681;
USER Wai	09/09/2024	12:15:36.393	ANA	PNV_SL // REC // 3329 // 21 // 596 // 20 // X L // Item // PNV_SJA // 2681;
USER Wai	09/09/2024	12:10:19.627	ANA	PNV_SL // REC // 3329 // 21 // 596 // 20 // X L // Item // PNV_SJA // 2681;

# // Statement caching technic

## / Caching type

0 : not activated

1 : Last, but can't permit to get the launching procedure

2 : Complete, but performance impact

3 : Just 1, but value changed ignore (3 to 3)

**Table** : *\_Connect*

**Field** : *\_Connect-caching-type*

## // Some code

```
DO WHILE TIME < I-TIME-END :  
  DO TRANSACTION :  
    FIND CURRENT sports2000._connect EXCLUSIVE-LOCK NO-ERROR.  
    /*...Data collect...*/  
    _connect-CachingType = 2 .  
    FIND CURRENT sports2000._connect NO-LOCK NO-ERROR.  
  END.  
  DO TRANSACTION :  
    FIND CURRENT sports2000._connect EXCLUSIVE-LOCK NO-ERROR.  
    _connect-CachingType = 3 .  
    FIND CURRENT sports2000._connect NO-LOCK NO-ERROR.  
  END.  
  PAUSE 0.05 NO-MESSAGE .  
END.
```

## // Statement caching cost

/ Analyzis level 2/3 SELF

### FOR EACH

Type	Connection	Nb Loop	Loop time (ms)	%Elapse
NO-STCA	SELF	169	354,816	
STCA-OE	SELF	167	360,491	1,60
STCA-PNV	SELF	165	363,042	2,32

### FIND FIRST

Type	Connection	Nb Loop	Loop time (ms)	%Elapse
NO-STCA	SELF	198 012	0,302	
STCA-OE	SELF	88 521	0,677	123,88
STCA-PNV	SELF	192 392	0,311	3,04



## // Statement caching cost

/ Analyzis level 2/3 REMC

### FOR EACH

Type	Connection	Nb Loop	Loop time (ms)	%Elapse
NO-STCA	REMC	105	575,009	
STCA-OE	REMC	105	575,095	0,01
STCA-PNV	REMC	105	575,200	0,03

### FIND FIRST

Type	Connection	Nb Loop	Loop time (ms)	%Elapse
NO-STCA	REMC	14 785	4,056	
STCA-OE	REMC	7 630	7,854	93,62
STCA-PNV	REMC	14 508	4,132	1,87



Surveillance haut niveau pour l'utilisateur n°15 - PNV\_AS

Top mesures ✖ Quitter 📧 Pile d'appel mail 🖼 Vue cumulée

Top période  DB Acces  DB Read  Lock  Locks No Satisfy  Date + heure asc  Date + heure desc  Pile d'appel

Uniq id	Heure	DB Acces	DB read	Lock	Nsati	Pile 1	Pile 2
719,162	09/09/2024 12:10:32.044	5,140	2,090	0	0	read-data-ID pgm_1	proc-btn-IEL pgm_1
719,162	09/09/2024 12:10:32.118	6,619	2,690	0	0	read-data-ID pgm_1	proc-btn-IEL pgm_1
719,162	09/09/2024 12:10:32.181	4,377	1,780	0	0	read-data-ID pgm_1	proc-btn-IEL pgm_1
719,162	09/09/2024 12:10:32.238	4,581	1,863	0	0	read-data-ID pgm_1	proc-btn-IEL pgm_1
719,162	09/09/2024 12:10:32.304	4,530	1,840	0	0	read-data-ID pgm_1	proc-btn-IEL pgm_1
719,162	09/09/2024 12:10:32.364	5,565	2,263	0	0	read-data-ID pgm_1	proc-btn-IEL pgm_1

Pile d'appel

```

815 read-data-ID pgm_1
665 proc-btn-IEL pgm_1
423 USER-INTERFACE-TRIGGER pgm_1
498 pgm_1
1 p:\protemp\PNV\AS\p89791_Untitled1.ped
    
```

// Surveillance haut niveau pour l'utilisateur n°7 - PNV\_PPE
 - □ ×

Top mesures
✖ Quitter
📧 Pile d'appel mail
🖼️ Vue cumulée

**Top période**    DB Acces    DB Read    Lock    Locks No Satisfy    Date + heure asc    Date + heure desc    Pile d'appel

Uniq id	Heure	DB Acces	DB read	Lock	Nsati	Pile 1	Pile 2
719,162	09/09/2024 12:10:33.154	10,815	3,985	0	0	?	?
719,162	09/09/2024 12:10:33.219	11,724	4,350	0	0	?	?
719,162	09/09/2024 12:10:33.298	12,450	4,656	0	0	?	?
719,162	09/09/2024 12:10:33.360	10,250	3,792	0	0	?	?
719,162	09/09/2024 12:10:33.427	13,898	4,212	0	0	READ_order_orderline pgm_1	read-data pgm_1
719,162	09/09/2024 12:10:33.485	8,416	3,130	0	0	?	?

**Pile d'appel**

```

740 READ_order_orderline pgm_1
782 read-data pgm_1
573 proc-btn-acces pgm_1
435 USER-INTERFACE-TRIGGER pgm_1
                    
```

// Surveillance haut niveau pour l'utilisateur n°7 - PNV\_PPE
 - □ ×

Top mesures
✖ Quitter
📧 Pile d'appel mail
🖼️ Vue générale

**Top période**    DB Acces    DB Read    Lock    Locks No Satisfy    Date + heure asc    Date + heure desc    Pile d'appel   A partir de:

Début	Fin	Nb d'?	DB Acces	DB read	Lock	Nsati	Pile début	Pile fin
09/09/2024 12:10:30.721	09/09/2024 12:10:33.427	42	500,840	182,077	0	0	?	READ_order
09/09/2024 12:10:33.427	09/09/2024 12:10:33.673	3	48,990	17,242	0	0	READ_order_orderline pgm_1	READ_order
09/09/2024 12:10:33.673	09/09/2024 12:10:34.609	14	187,632	68,117	0	0	READ_order_orderline pgm_1	READ_order
09/09/2024 12:10:34.609	09/09/2024 12:10:39.499	76	853,214	310,288	0	0	READ_order_orderline pgm_1	READ_order
09/09/2024 12:10:39.499	09/09/2024 12:10:39.729	3	49,436	17,514	0	0	READ_order_orderline pgm_1	READ_order
09/09/2024 12:10:39.729	09/09/2024 12:10:41.063	20	291,114	106,478	0	0	READ_order_orderline pgm_1	READ_order

**Pile d'appel début**

```

740 READ_order_orderline pgm_1
782 read-data pgm_1
573 proc-btn-acces pgm_1
435 USER-INTERFACE-TRIGGER pgm_1
400 pgm_1
                    
```

**Pile d'appel fin**

```

740 READ_order_orderline pgm_1
782 read-data pgm_1
573 proc-btn-acces pgm_1
435 USER-INTERFACE-TRIGGER pgm_1
400 pgm_1
                    
```

# // How can you interpret the « ? » value ?

## / Example on REMC

### FOR EACH customer NO-LOCK

The screenshot displays a monitoring application window with the following components:

- Title Bar:** Surveillance haut niveau pour l'utilisateur n°22 - PNV\_AS
- Menu Bar:** Top mesures, Quit, Statement Caching mail, General View
- Filter Bar:** Top période, DB Acces, DB Read, Lock, Locks No Satisfy, Date + hour asc, Date + hour desc, Stat Caching, From: [input field]
- Table:** A table with columns: Begin, End, Nb ?, DB Access, DB read, Lock, Nsati, Stat. Caching begin, Stat. Caching End. The 'Nb ?' column contains the value 0 for all rows.
- Statement caching:** A list of SQL statements with their execution counts.
- Statement caching End:** A list of SQL statements with their execution counts.

Begin	End	Nb ?	DB Access	DB read	Lock	Nsati	Stat. Caching begin	Stat. Caching End
04/09/2018 15:00:39.883	04/09/2018 15:00:39.982	0	146,185	0	0	0	READ_order_orderline pgm_1	READ_order_orderline pgm_1
04/09/2018 15:00:36.234	04/09/2018 15:00:36.338	0	127,698	0	0	0	READ_order_orderline pgm_1	READ_order_orderline pgm_1
04/09/2018 14:59:00.653	04/09/2018 14:59:00.730	0	86,091	0	0	0	READ_order_orderline pgm_1	READ_order_orderline pgm_1
04/09/2018 15:05:19.362	04/09/2018 15:05:19.430	0	82,954	0	0	0	READ_order_orderline pgm_1	READ_order_orderline pgm_1
04/09/2018 15:00:12.392	04/09/2018 15:00:12.458	0	72,349	0	0	0	READ_order_orderline pgm_1	READ_order_orderline pgm_1
04/09/2018 15:00:15.121	04/09/2018 15:00:15.175	0	65,458	0	0	0	READ_order_orderline pgm_1	READ_order_orderline pgm_1

Statement caching	Statement caching End
623 READ_order_orderline pgm_1	623 READ_order_orderline pgm_1
665 read-data pgm_1	665 read-data pgm_1
500 proc-btn-acces pgm_1	500 proc-btn-acces pgm_1
363 USER-INTERFACE-TRIGGER pgm_1	363 USER-INTERFACE-TRIGGER pgm_1
426 pgm_1	426 pgm_1
1,038 Proc-AB q:\Applis\Specifs\EMEAPUG\PUG2018\Obj\Nanceur-2018.R	1,038 Proc-AB q:\Applis\Specifs\EMEAPUG\PUG2018\Obj\Nanceur-2018.R
894 USER-INTERFACE-TRIGGER q:\Applis\Specifs\EMEAPUG\PUG2018\O	894 USER-INTERFACE-TRIGGER q:\Applis\Specifs\EMEAPUG\PUG2018\O
3,147 P:\applis\prowin\ProLink511\ProMain.R	3,147 P:\applis\prowin\ProLink511\ProMain.R
2,444 MainApplic Prowinit	2,444 MainApplic Prowinit

# // How can you interpret the « ? » value ?

**FOR EACH customer WHERE STRING(ROWID(customer)) = my\_rowid NO-LOCK**

The screenshot shows a window titled "Surveillance haut niveau pour l'utilisateur n°22 - PNV\_AS". It contains two main sections: "Top mesures" and "Statement caching".

**Top mesures**

DB Acces  DB Read  Lock  Locks No Satisfy  Date + hour asc  Date + hour desc  Stat Caching

Begin	End	Nb ?	DB Access	DB read	Lock	Nsati	Stat. Caching begin	Stat. Caching End
04/09/2018 15:12:30.748	04/09/2018 15:12:47.720	147	3,852,506	546,303	0	0	READ_order_orderline-no-pack pgm_1	READ_order_orderline-no-pack pgm_1
04/09/2018 15:13:17.750	04/09/2018 15:13:27.040	122	2,597,531	368,339	0	0	READ_order_orderline-no-pack pgm_1	READ_order_orderline-no-pack pgm_1
04/09/2018 15:15:56.079	04/09/2018 15:16:02.230	87	2,590,253	367,249	0	0	READ_order_orderline-no-pack pgm_1	READ_order_orderline-no-pack pgm_1
04/09/2018 15:11:18.548	04/09/2018 15:11:28.434	119	2,585,644	366,663	0	0	READ_order_orderline-no-pack pgm_1	READ_order_orderline-no-pack pgm_1
04/09/2018 15:16:07.260	04/09/2018 15:16:21.794	123	2,578,694	365,687	0	0	READ_order_orderline-no-pack pgm_1	READ_order_orderline-no-pack pgm_1
04/09/2018 15:16:35.569	04/09/2018 15:16:43.874	76	2,575,527	365,208	0	0	READ_order_orderline-no-pack pgm_1	READ_order_orderline-no-pack pgm_1

**Statement caching**

643	READ_order_orderline-no-pack pgm_1
684	read-data-no-packet pgm_1
592	proc-btn-no-packet pgm_1
387	USER-INTERFACE-TRIGGER pgm_1
426	pgm_1
1,038	Proc-AB q:\Applis\Specifs\EMEAPUG\PUG2018\Obj\ Vanceur-2018.R
894	USER-INTERFACE-TRIGGER q:\Applis\Specifs\EMEAPUG\PUG2018\O
3,147	P:\applis\prowin\ProLink511\ProMain.R
2,444	MainApplic Prowinit

**Statement caching End**

643	READ_order_orderline-no-pack pgm_1
684	read-data-no-packet pgm_1
592	proc-btn-no-packet pgm_1
387	USER-INTERFACE-TRIGGER pgm_1
426	pgm_1
1,038	Proc-AB q:\Applis\Specifs\EMEAPUG\PUG2018\Obj\ Vanceur-2018.R
894	USER-INTERFACE-TRIGGER q:\Applis\Specifs\EMEAPUG\PUG2018\O
3,147	P:\applis\prowin\ProLink511\ProMain.R
2,444	MainApplic Prowinit





User	heure	N° seq	Connect-Name	PID	DB ACCES	DB Reads	Create	Read	Update	Delete	lock	lk No Satisfy	Device	_Connect-
719,163	12:18:28	115	PNV NB	68,676	3,874,910	1,932,587	0	1,928,695	0	0	0	0	D4APPP034	19
719,163	12:17:58	114	PNV NB	68,676	4,181,878	2,085,949	0	2,081,516	0	0	0	0	D4APPP034	19
719,163	12:17:28	113	PNV NB	68,676	3,751,414	1,870,898	0	1,867,196	0	0	0	0	D4APPP034	19
719,163	12:16:58	112	PNV NB	68,676	3,744,245	1,867,317	0	1,863,733	0	0	0	0	D4APPP034	19
719,163	12:16:28	111	PNV NB	68,676	3,825,273	1,908,633	0	1,904,110	0	0	0	0	D4APPP034	19
719,163	12:15:58	110	PNV NB	68,676	2,133,855	1,063,576	0	1,062,121	0	0	0	0	D4APPP034	19
719,163	12:15:28	109	PNV NB	68,676	2,832,177	1,413,356	0	1,409,534	0	0	0	0	D4APPP034	19
719,163	12:20:28	119	PNV PPE	33,444	5,002,351	1,815,725	0	2,498,632	0	0	0	0	D4APPP032	
719,163	12:19:58	118	PNV PPE	33,444	5,502,553	1,991,897	0	2,748,394	0	0	0	0	D4APPP032	
719,163	12:19:28	117	PNV PPE	33,444	6,602,278	2,386,335	0	3,297,454	0	0	0	0	D4APPP032	
719,163	12:18:58	116	PNV PPE	33,444	5,736,369	2,076,944	0	2,864,902	0	0	0	0	D4APPP032	
719,163	12:18:28	115	PNV PPE	33,444	5,403,093	1,962,064	0	2,699,234	0	0	0	0	D4APPP032	
719,163	12:17:58	114	PNV PPE	33,444	5,780,715	2,093,323	0	2,887,077	0	0	0	0	D4APPP032	
719,163	12:17:28	113	PNV PPE	33,444	5,233,094	1,901,127	0	2,613,617	0	0	0	0	D4APPP032	
719,163	12:16:58	112	PNV PPE	33,444	5,306,288	1,927,637	0	2,650,265	0	0	0	0	D4APPP032	
719,163	12:16:28	111	PNV PPE	33,444	5,393,125	1,956,391	0	2,693,541	0	0	0	0	D4APPP032	
719,163	12:15:58	110	PNV PPE	33,444	6,291,028	2,273,647	0	3,142,450	0	0	0	0	D4APPP032	

Voir le source    ProPath    Dir log    Voir le Prolab    Rechercher Prolab    CNX à une base

Type	dl	pi	Objet	Table	Create	Read	Update	Delete	Nb Rceord
-ASP			pgm_1	OrderLine		3,297,315			1,506,383
				Order		139			3,953

```
pgm_1.r.lst.txt - Bloc-notes
-----
734 PROCEDURE READ_order_orderline :
735 /*-----
736 Purpose:
737 Parameters: <none>
738 Notes:
739 -----*/
740 FOR EACH order NO-LOCK ,
741     EACH orderline OF Order WHERE orderline.itemnum = 17 NO-LOCK :
742
```

Rechercher

Rechercher :        

Direction  
 Haut     Bas

Respecter la casse  
 Retour à la ligne



## // Find mistake in the right r-code

### / At every compile, we are saving metadatas

- Preprocess
- Debug-list
- Xref

### / Help us to analyze without simulate the customer's environment

- 1300 customers, at least 3000 environments

# // About index

/ Find best FOR EACH indexes

/ hQry:QUERY-PREPARE

/ hQry:INDEX-INFORMATION

The screenshot shows a software interface for analyzing database queries. At the top, the title bar reads "Index utilisé par une requête". Below it, a menu bar includes "Analyse des requêtes", "Quitter", "Remplacer les OF (F6)", "Analyse (F9)", and "Choix base de réf.". The main window contains a text area with the query: "For Each customer where custnum = 0". Below the query is a table titled "Liste des buffers: customer" with columns for "table", "Index", "moyenne enr", and "Champ N° 1" through "Champ N° 7". The "customer" table is listed with index "CustNum" and field "CustNum" of type "int +". Below this is another table titled "table libel" with columns for "Index", "Primaire", "moyenne enr", "Type", and "Champ N° 1" through "Champ N° 5". The "CustNum" index is checked in the "Primaire" column. A legend at the bottom left explains the symbols: a checkmark for "Champ utilisé dans la requête (casse l'index)", a plus sign for "Champ NON utilisé dans la requête", and a plus sign in a box for "Champ présent en égalité".

# // Counting records

/ Counting record on DB to find a better index than the preselected by OE

/ Testing our business recovery plan

- Backup DB every night on different machines
- Count tables and indexes on the restored DB during



Index utilisé par une requête

Analyse des requêtes | Quitter | Remplacer les OF (F6) | Analyse (F9) | Choix base de réf.

```
FOR EACH order NO-LOCK ,
EACH orderline OF Order WHERE orderline.itemnum = 17 NO-LOCK
```

Index utilisé par une requête

Analyse des requêtes | Quitter | Remplacer les OF (F6) | Analyse (F9) | Choix base de réf.

```
FOR EACH order NO-LOCK ,
EACH orderline WHERE orderline.Ordernum = Order.Ordernum and orderline.itemnum = 17 NO-LOCK
```

Liste des buffers: order,orderline | Db-ref.: pug2023-spew0695

table	Index	moyenne enr	Champ N° 1	Champ N° 2	Champ N° 3	Champ N° 4	Champ N° 5	Champ N° 6	Champ N° 7	Ch
order	WHOLE-INDE									
order	OrderNum		Ordernum							
orderline	itemnum		Itemnum							

table	libel	Index	Primaire	moyenne enr	Type	Champ N° 1	Champ N° 2	Champ N° 3	Champ N° 4	Champ N° 5
order	?									
orderline	?									
		<b>OrderNum</b>	✓			Ordernum	int +			
		SalesRep				SalesRep	cha +			
		OrderStatus				OrderStatus	cha +			
		OrderDate				OrderDate	dat +			
		CustOrder				CustNum	int +	Ordernum	int +	

Champs utilisés dans la requête

Champ utilisé dans la requête (casse l'index)

Liste des buffers: order,orderline

table	Index	moyenne enr	Champ N° 1	Champ N° 2	Champ N°
order	WHOLE-INDE:				
order	OrderNum		Ordemum int +		
orderline	itemnum	26,900	Itemnum int +		

QRY-Info Type: Dynamically Opened Query, Server-side join  Info d'exec sur D

table	libel	Index	Primaire	moyenne enr	Type	Champ N° 1
order	?					
orderline	?	orderline	✓	17		Ordernum int
		itemnum		26,900		Itemnum int
		OrderLineStatu				OrderLineStatu cha

It seems that the index orderline (base on ordernum) is better than the index itemnum based on itemnum

orderlin	orderlin	2	1,506,383	1,506,383	1.00
----------	----------	---	-----------	-----------	------

Analyse des requêtes

Liste des clés d'index

Table	Index	lb champs	change valeur	Nb enreg	Nb/clé index	lb/clé index (sans top)	Champs 1	Champs 2
orderlin	orderlin	1	87,327	1,506,383	17.25	16.96	Ordemum	
orderlin	orderlin	2	1,506,383	1,506,383	1.00	1.00	Ordemum	Linenum

Top d'enregistrements

Top	Nb record	Ordemum
1	5,000	7155
2	5,000	7154
3	5,000	7153
4	5,000	7152

# // Diagnostic

## / Diagnostic event parameter : -DiagEvent

- Lock table overflow
- Bithold
- SysError

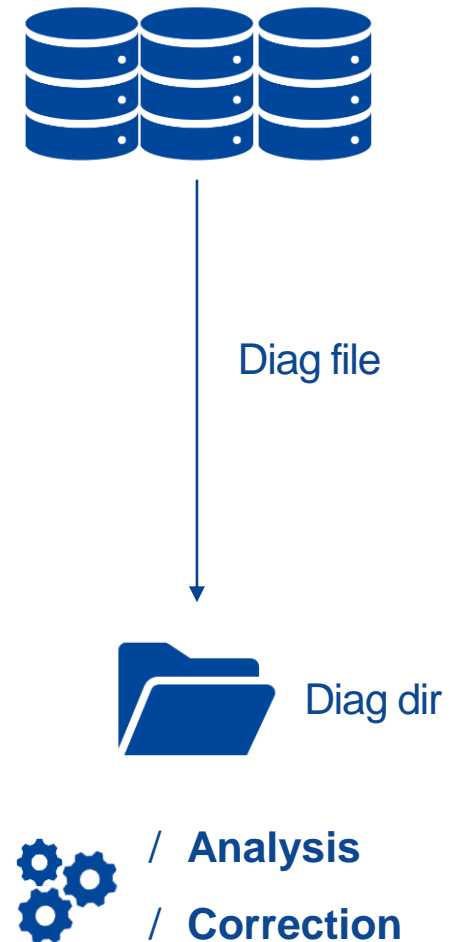
## / Diagnostic event level : -DiagEvtLevel

- 2 : Summary data & details data

## / Diagnostic pause length : -DiagPause

- 0 seconds

## / Diagnostic directory : -DiagDir (/stacktrace)





Diagnostic

machine	Base	Type incident	à	etat	Rep.
dblnxasp34	spew0695	Lock Table	09/09/2024 12:03:48.000	ANALYSE	/asp/bases/poolprod/pug2023/

Cancel

Diag Event: Tous

Machine: Toutes

Dir:

Db: spew0695

Période: J-X Elapse: 20

21/08/24 00:00:00

Etat: Tous

Num	Nom du fichier
1	diageventlocktable_detail.csv
2	diageventlocktable_summary.csv
3	diageventtransaction_detail.csv

Timestamp	EventId	DbName	Lock Type	Table#	Rowid	Partition#	HashChain	UPID	UserNum	Tenant	DomainID	Flags	U		
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3329	0	3340	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3330	0	3341	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3331	0	3342	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3332	0	3343	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3333	0	3344	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3334	0	3345	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3335	0	3346	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3336	0	3347	26812	20	0	0	"X"	L	"PNV_SJA"	"C"
"2024-09-09T12:03:48.000+2:00"	1	/asp/bases/poolprod/pug2023/spew0695	"REC"	11	3337	0	3348	26812	20	0	0	"X"	L	"PNV_SJA"	"C"

UpDate

Client:

Etat: Analyse

Destinataire:

Mail



Analyse -L sur /asp/bases/poolprod/pug2023/spew0695 2024-09-09T12:03:48.000+2:00

OK

UsrNum	PID	UserName	CurrLock	HWmLock	TransFlag	TransID	RLCounter	State	Txtime	Duration	BIRecReads	BIRecWrites	Device
8	44060	PNV_PPE	30,333	30,333		0	1	ACTIVE	2024-09-09T12:03:06.000-	43	0	0	30,333 D4APP032
20	26812	PNV_SJA	8,001	8,001		0	1	ACTIVE	2024-09-09T11:53:40.000-	609	0	0	8,001 D4APP025
21	596	PNV_SL	1	3		0	0	BEGIN		0	0	0	7 D4APP030
22	808	PNV_SL	1	2		0	0			0	0	0	0 D4APP030
0	0		0	0		0	0			0	0	0	
0	0		0	0		0	0			0	0	0	
0	0		0	0		0	0			0	0	0	
0	0		0	0		0	0			0	0	0	

User	n°Usr	Pid	Table	Table	Locks	Queued
PNV_PPE	8	44060	14	14	30,333	0

Time	Connect-Name	_connect-id	_connect-user	_connect-CacheInfo	Pile d'appel
12:03:27	PNV_PPE	9	8	Do_Compilation	compil-api
12:03:57	PNV_PPE	9	8	READ_order_orderline	p:\protemp

Flags	HashChain	LOCKTYPE	ROWID	Table#	TransFlags	TransID
X UL	4,879	REC	4,865	14	BICLR	3,079,109
X UL	4,880	REC	4,866	14	BICLR	3,079,109
X UL	4,881	REC	4,867	14	BICLR	3,079,109
X UL	4,882	REC	4,868	14	BICLR	3,079,109

Flags	HashChain	LOCKTYPE	ROWID	Table#	TransFlags	TransID
X UL	4,879	REC	4,865	14	BICLR	3,079,109
X UL	4,880	REC	4,866	14	BICLR	3,079,109
X UL	4,881	REC	4,867	14	BICLR	3,079,109
X UL	4,882	REC	4,868	14	BICLR	3,079,109

Alerte et Actions

H-2 
  J 
  H-24 
  J-7 
  J-30 
 Alerte: Toutes 
 Client (repertoire): pug2023 
 : N° 719961 le 12/09/2024 à 11:39:39

N° Alerte	Type	base	Infos	Date time detection	machine	chembdd
10,731,637	APW-BIW	spew0696	BIW Absent APW Absent	12/09/2024 11:46:27.923	dblnxasp34	/asp/bases/poolprod/pug2023/spew069
10,731,631	Max USER 4GL	spew0695	96/96 (-n4GL96-Mpb8 -Ma12)	12/09/2024 11:46:24.906	dblnxasp34	/asp/bases/poolprod/pug2023/spew069
10,731,629	-L	spew0695	38337/38337*.9	12/09/2024 11:46:23.899	dblnxasp34	/asp/bases/poolprod/pug2023/spew069

Who: prnv\_ppe

ASP

Quit

Refresh

ERREUR COMPIL

Info -B2 à ajouter

False-Flag Alert

---

H-2 
  J 
  H-24 
  J-7 
  J-30 
  Y-1 
 Analyse: Toutes 
 Client (repertoire):

N° Alerte	Type	base	Infos	Date time detection	Machine	chembdd
10,731,624	Nb CHKPoints	cptbdd	Nb CHKP:216°DES-UPD°16=16°LAST:7°dirty:11810°	12/09/2024 11:42:06.788	riscppe	/asp/bases/poolppe01/cptbdd/cptbdd
10,731,626	Nb CHKPoints	trf1011	Nb CHKP:170°DES-UPD°16=16°LAST:7°dirty:1518°C	12/09/2024 11:42:06.788	riscppe	/asp/bases/poolppe01/cptbdd/trf1011
10,731,622	Nb CHKPoints	prolabeven	Nb CHKP:209°DES-UPD°12=515625°LAST:31°dirty:8	12/09/2024 11:42:06.632	dblnxasp31	/asp/bases/poolprod/gesi/prolabeven
10,731,620	TRANS DURAT	gcow0430	00:19:46	12/09/2024 11:42:06.507	dblnxasp12	/asp/bases/poolprod/gyabon/gcow0430
10,731,618	Nb CHKPoints	wf0235	Nb CHKP:134°DES-UPD°12=515625°LAST:31°dirty:9	12/09/2024 11:42:06.475	dblnxasp09	/asp/bases/poolprod/gftextilep/wf0235
10,731,616	TRANS DURAT	wmskrust	00:10:45	12/09/2024 11:42:06.429	dblnxasp04	/asp/bases/poolprod/gkrustanord/wmskr
10,731,614	USER Wait	grpda	°BCH_RPDA // REC // 841 // 510 // 512 // 343 // S	12/09/2024 11:41:54.310	dblnxasp32	/asp/bases/poolprod/gmiko/grpda/grpda

Nb User  
 Tri rép  
 Without OK  
 W/out FalseFla

Edit Planification

Inter TO DO

Inter DONE

Go To DB

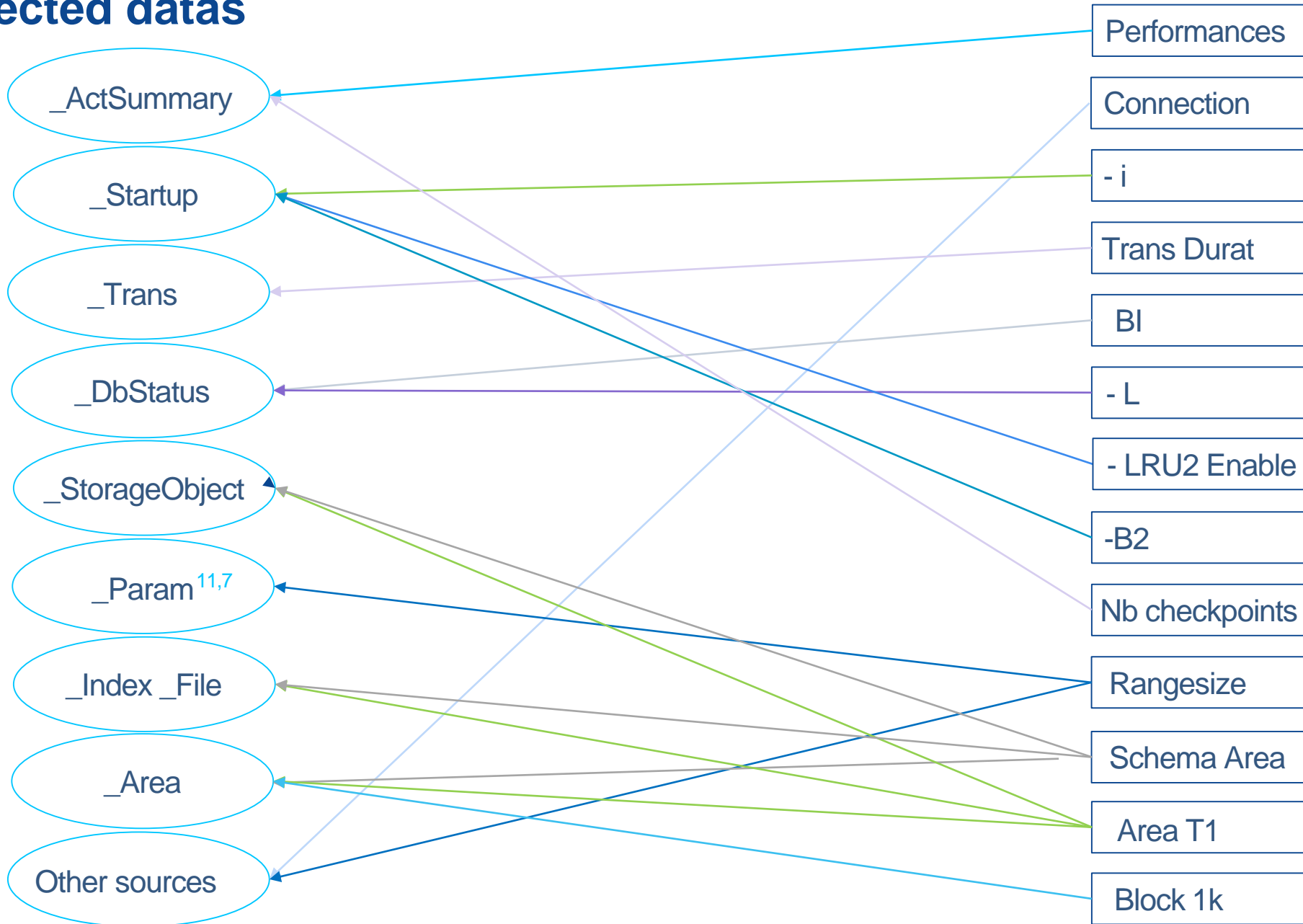
False-Flag Plan

---

H-2 
  J 
  H-24 
  J-7 
  J-30 
  Y-1 
 Actions: Toutes 
 Client (repertoire): pug2023

N° Alerte	Type	base	Infos	Date time detection	Machine	chembdd
10,731,641	SCHEMA-AREA	spew0696	Tables/Index SCHEMA-AREA	12/09/2024 11:46:29.933	dblnxasp34	/asp/bases/poolprod/pug2023/spew0696
10,731,639	RangeSize	spew0696	File 25>10 Index 241>50()	12/09/2024 11:46:28.928	dblnxasp34	/asp/bases/poolprod/pug2023/spew0696
10,731,635	-basetable	spew0696	1/1/-400 ?	12/09/2024 11:46:26.915	dblnxasp34	/asp/bases/poolprod/pug2023/spew0696
10,731,633	-basetable	spew0696	1/1/-400 ?	12/09/2024 11:46:25.911	dblnxasp34	/asp/bases/poolprod/pug2023/spew0696

# // Collected datas





Modification de la base spew0695

Base : spew0695

Intitulé : SPORTS2000 (test pug 2018)

Type : Bases spécifique gestion commerciale

Numéro dossier : 0695  Base spécifique

**Paramètres de la base**

Capacité de la table de verrouillage (-L)  
38321

BIW  APW 1 -Mf dRt

-bibufs dRt  -pinshm

Optimisation before image  
-biblocksize 8 -bi 12 -BiGrow dRt

Nb connexions : 142 (= Somme(Mpb \* Ma))

Nb Serveur total : 10

gestion des minport et maxport

**Paramètres des brokers**

TYPE	N° port	Nb User	Serveur	Mi -> Ma	minport -> maxport	Paramètres
Principal	62695	136	8 1 -> 17			-B 3000 -basetable -40

Type Principal Port TCP 62695 Mpb 8 Mi 1 Ma 17

Paramètres Progress spécifiques Minport Maxport

-B 3000 -basetable -40 tablerangesize 520 -baseindex 1 -indexrangesize 500 -usemotfytime 10 -truskip 30

Thanks to the new `_dbparam` which are updatable and the new parameters of `proutil increasesto`, I am able to run script which will do the job

```

Détails de lancement
cd /backup/tmp/; chmod 750 486scriptrsh.bat; ./486scriptrsh.bat;
[adm_db@dblnxasp34:~ > <p/; chmod 750 486scriptrsh.bat; ./486scriptrsh.bat;
cd /asp/bases/poolprod/pug2023/
. proenv127
proutil spew0695 -C increasesto -n 142
OpenEdge Release 12.7 as of Fri Apr 21 08:45:41 EDT 2023

Attente de la connexion du broker aux segments de mémoire partagée récemment ajoutés. (14269)

1 adm_db AIMGT 353290
2 adm_db TSRV 353292
7 adm_db TSRV 368379

Les connexions de base de données ci-dessus ne sont pas rattachées aux segments de mémoire
partagée récemment ajoutés.
Type 'n' to cancel wait...
Increase Params increasing maximum number of users (-n) from 102 to 142. (19456)
mpro -p /backup/tmp/spew0695set-n-info-set.p -db spew0695 -b
    
```

(Press HELP to view stack trace)

Voici les modifications à apporter

-n old.des 102 current 103 New 142  
-Ma old.des 12 current 12 New 17  
voulez vous les appliquer

Action	Nb	Description	Action	Nb	Description
-B2 need	5	Memory resource allocated for future	DBANALYS	53 467	Automatic task
-B2 small	8	Close to saturation	ERR.des	3	Bad formatting of the 'Startup.pf' file
-basetable	77	Bad value for this startup parameter	ERR.des-M	24	'Startup.pf' file contains Windows characters
-L	9	Lock table Overflow (>90%)	ERR.st	5	.st file is not up to date
-lruskips	40	Too much activity on the latch MTL_LRU	IdxCompact	10 093	Automatic task
-n808	25	-n not modified since db creation	MailPerf	42	Performance issue sent to dev team
OmSize	4	Too small value	MaxUser	22	Nb user > -n
.LgSize	344	.lg is too big	MaxUser 4GL	77	Nb user > -n on primary broker
AddExtend	166	Automatic prostrct add on an extends close to its limit	Nb ChkPoints	39	Too much checkpoints on an elapse time
AI-Disable	19	Ai disable	Nb-BI	11	Too much extend of BI
AI-Full	1	Too much AI full on the DB	PB-IDX	4	The test "Restore + Check Index + value per index" detect an issue on an index
AI-Switch	17	Too much time on the last AI extend it seems that there is no switch of AI	PendCon	6	Pending connection on this DB
AIW	34	AI daemon dysfunction	RangeSize	25	Bad value for -tablerangesize or -indexrangesize
Analys-LG	386 480	.lg Analysis	Schema-Area	7	Table or Index in the Schema-Area
APW-BIW	10 050	Number of helper process is not accurate	SVG	6 118	test "Restore + Check Index + value per index"
Big-BI	7	Last extend of BI is too big	sysprogress	2	The user sysprogress is not secured
User-mand.	19	The user defined to do DBA's tasks are not defined			

## // Other cases

### / Breach

- Sessions connected less than 30s
- Too many switch on stack trace
- Bad ranking on the prioritization

### / Another tool made for that

- Analyze future sessions
- Manual change of the time between each snapshot
- Precise choice of the data to analyze
  - User / Table / Index
  - Monitored datas





# // Customer feedback

## / Low level monitoring

- Since April 2017
- Any slowness feedback

## / High level monitoring

- Since October 2017
- Any bad feedback

## / Surprised of our reactivity

## / Call for a slowness ? We are already treating it. 😊

# Questions ?



**+33 (0)2 51 70 93 93**  
**www.proginov.com**

