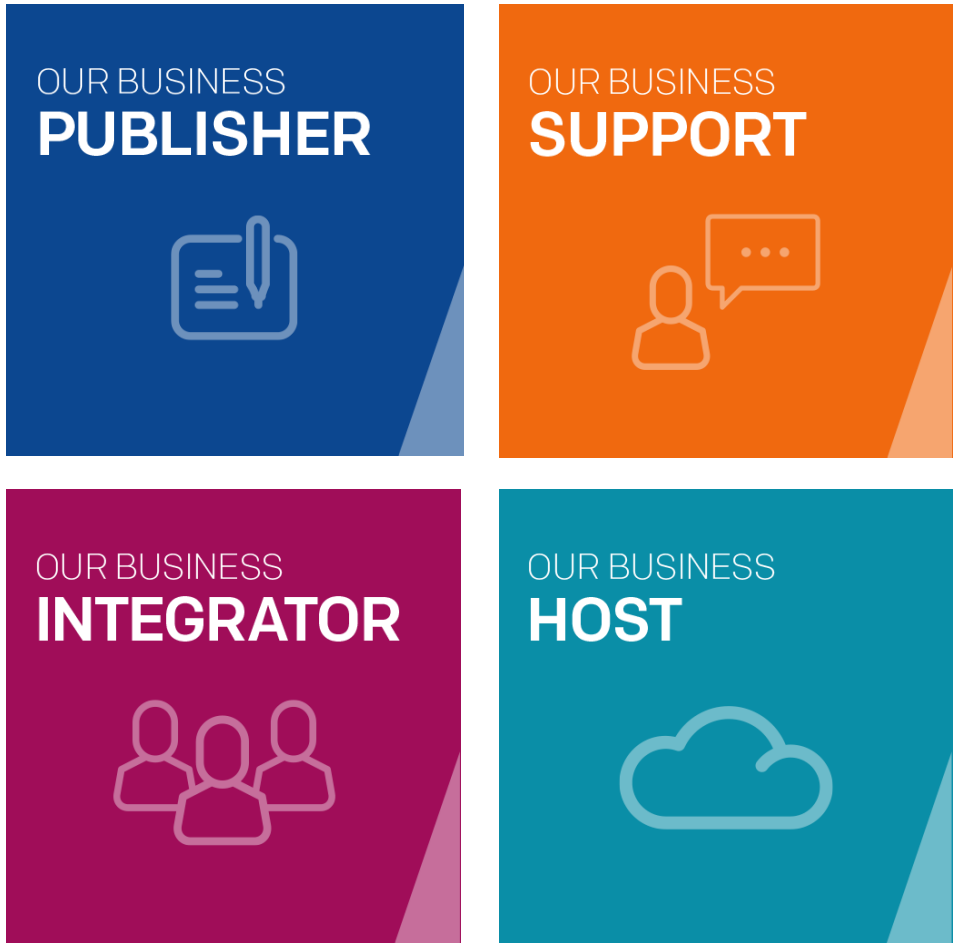
# Health-monitoring console

## PUG Challenge 2024 – 09/19/2024

# // Our business




A single point of contact for a responsible service



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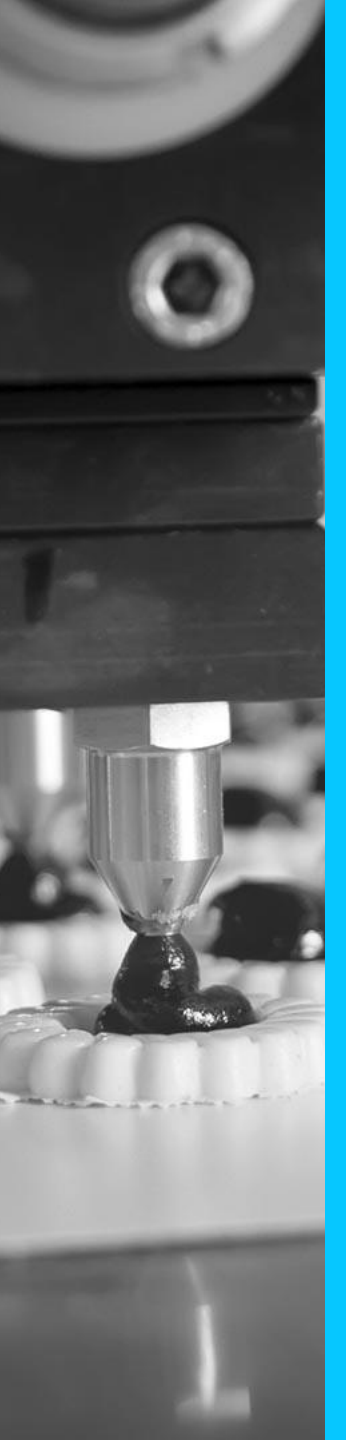


# // Our ERP software

## 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 Tarde
- Industrial Joinery
- Horticulture Industry
- Health

# // Proginov Datacenters

## / Proginov 1st 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

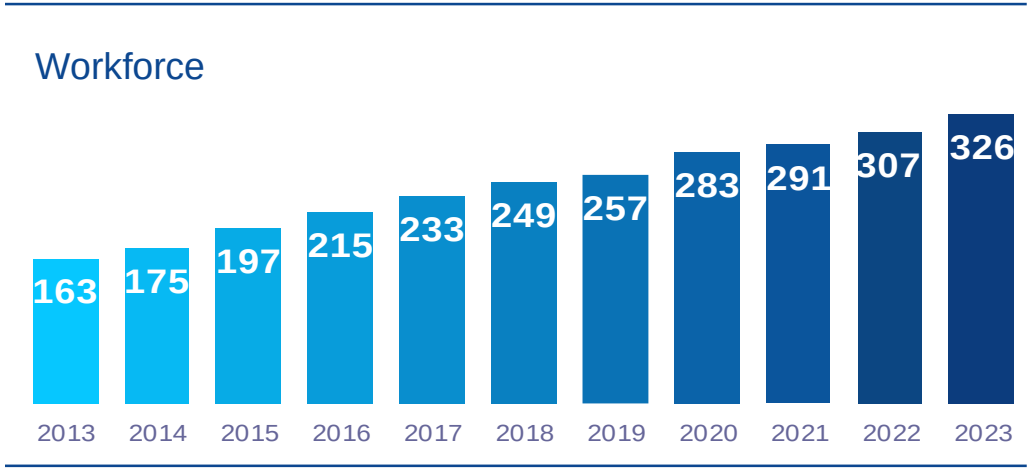
- ~13 000 concurrent uses
- ~31 000 connections per month

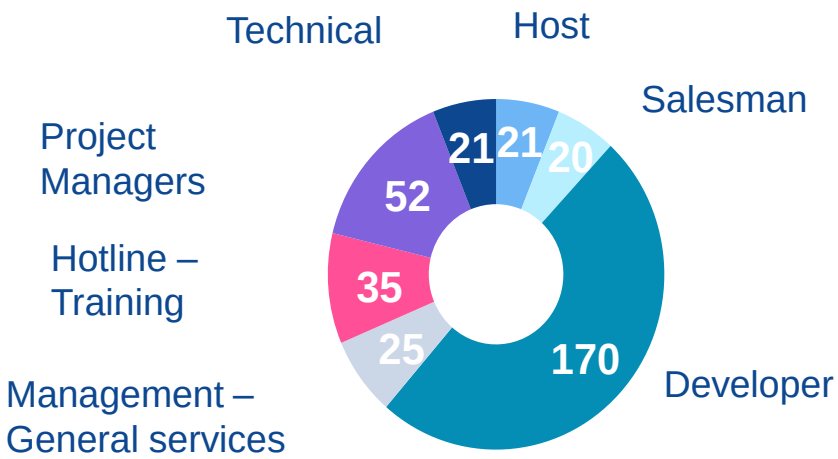
# // Workforce

**344**
people (June 2024)

**36**
average age

**≃ 2 %**
people turnover



# // Who are we ?

Adrien FRAISSE
afraisse@proginov.com

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

Patrice PERROT
pperrot@proginov.com

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

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# // Our problematic

/ + than 1300 customers

/ + than 14 000 databases

/ + 200 000 r-code

## → Where are the issues ?



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# Our tips and tricks

# // General presentation

/ Analysis

/ Priorisation

/ Alerts

5’

# // Which prorisation for DB

1. DB Access
2. Rec reads
3. DB Reads
4. Rec locks
5. CUD
6. Absent fields
7. Most locks > 90% -L
8. Large increase of BI



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# // General presentation

- / Analysis
- / Priorisation
- / Alerts

5’

# // General presentation

- / Analysis
- / Priorisation
- / Alerts

5’

# // General presentation

/ Analysis

/ Priorisation

/ Alerts

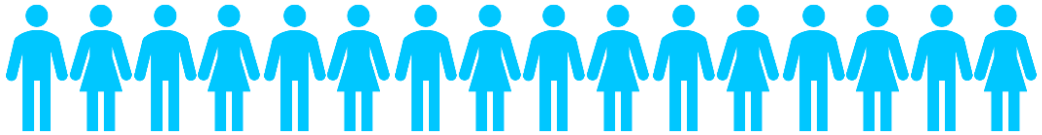
5’

# // General presentation

5’

/ Analysis

/ Priorisation



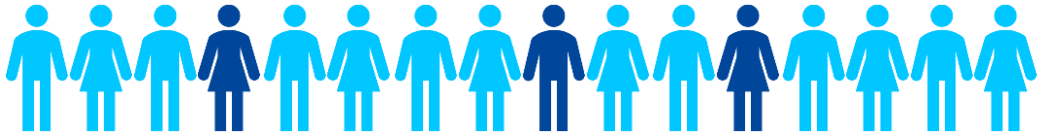
30”

# // General presentation

5’

/ Analysis

/ Priorisation



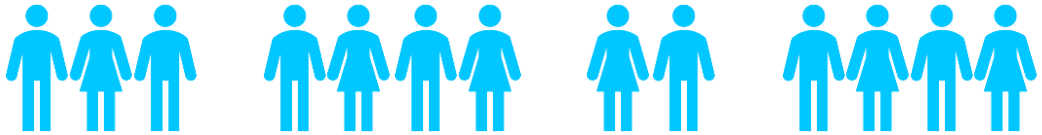
30”

# // General presentation

5’

/ Analysis

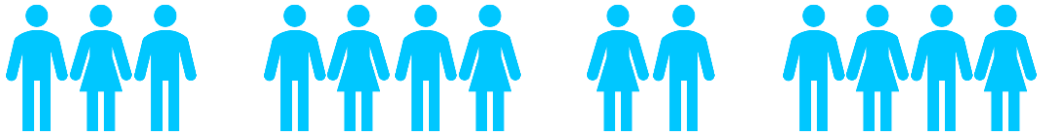
/ Priorisation



30”

# // General presentation

5’



30”

0”05

/ Metrics

/ Interpretation

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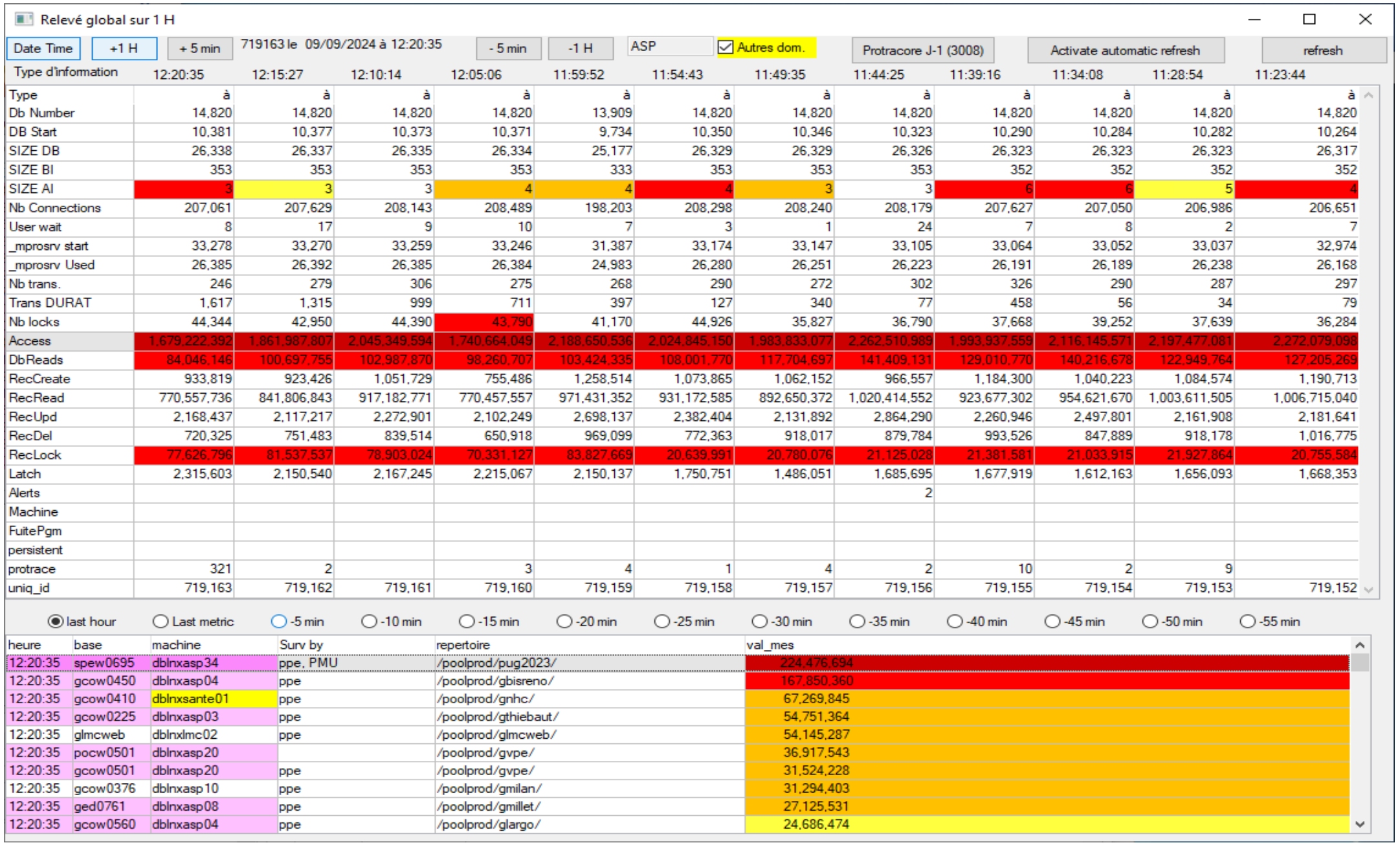
# // Which prorisation for users

1. Access
2. Rec reads
3. Reads
4. Rec locks
5. CUD

# // Demo




DEMO



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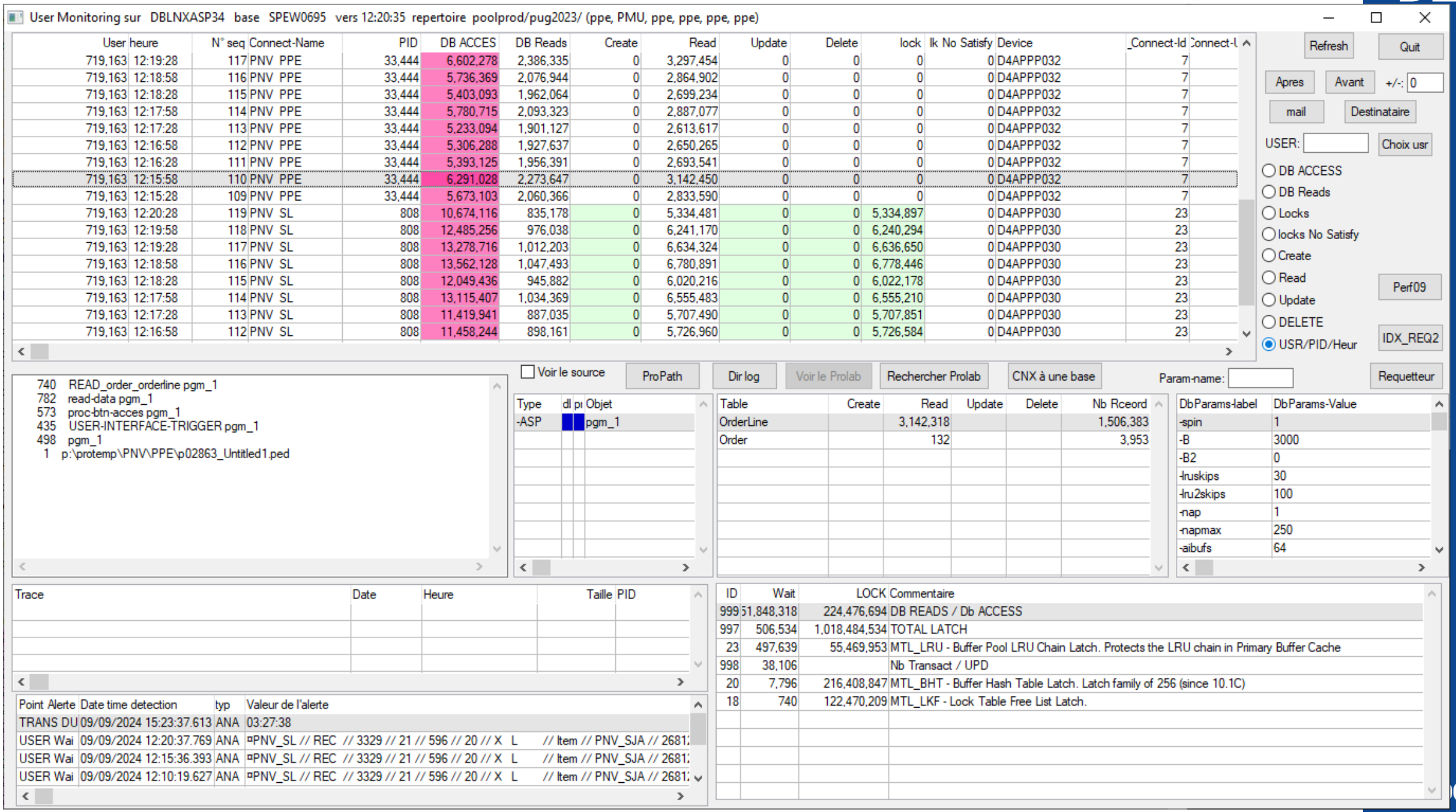
# DEMO




| User | heure | N° seq | Connect-Name | PID | DB ACCES | DB Reads | Create | Read | Update | Delete | lock | lk No Satisfy | Device | _Connect-Id | Connect-U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 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 | D4APPP032 | 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 | D4APPP032 | 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 | D4APPP032 | 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 | D4APPP032 | 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 | D4APPP032 | 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 | D4APPP032 | 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 | D4APPP032 | 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 | D4APPP032 | 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 | D4APPP030 | 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 | D4APPP030 | 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 | D4APPP030 | 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 | D4APPP030 | 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 | D4APPP030 | 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 | D4APPP030 | 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 | D4APPP030 | 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 | D4APPP030 | 23 | |

| Type | dl | pi | Objet |
|---|---|---|---|
| -ASP | | | pgm_1 |

| Table | Create | Read | Update | Delete | Nb Rceord |
|---|---|---|---|---|---|
| OrderLine | | 3,142,318 | | | 1,506,383 |
| Order | | 132 | | | 3,953 |

| DbParams-label | DbParams-Value |
|---|---|
| -spin | 1 |
| -B | 3000 |
| -B2 | 0 |
| -lruskips | 30 |
| -lru2skips | 100 |
| -nap | 1 |
| -napmax | 250 |
| -aibufs | 64 |

| 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. |

# // 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*



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# // 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.
```



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# // 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 |

 

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# // 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 |



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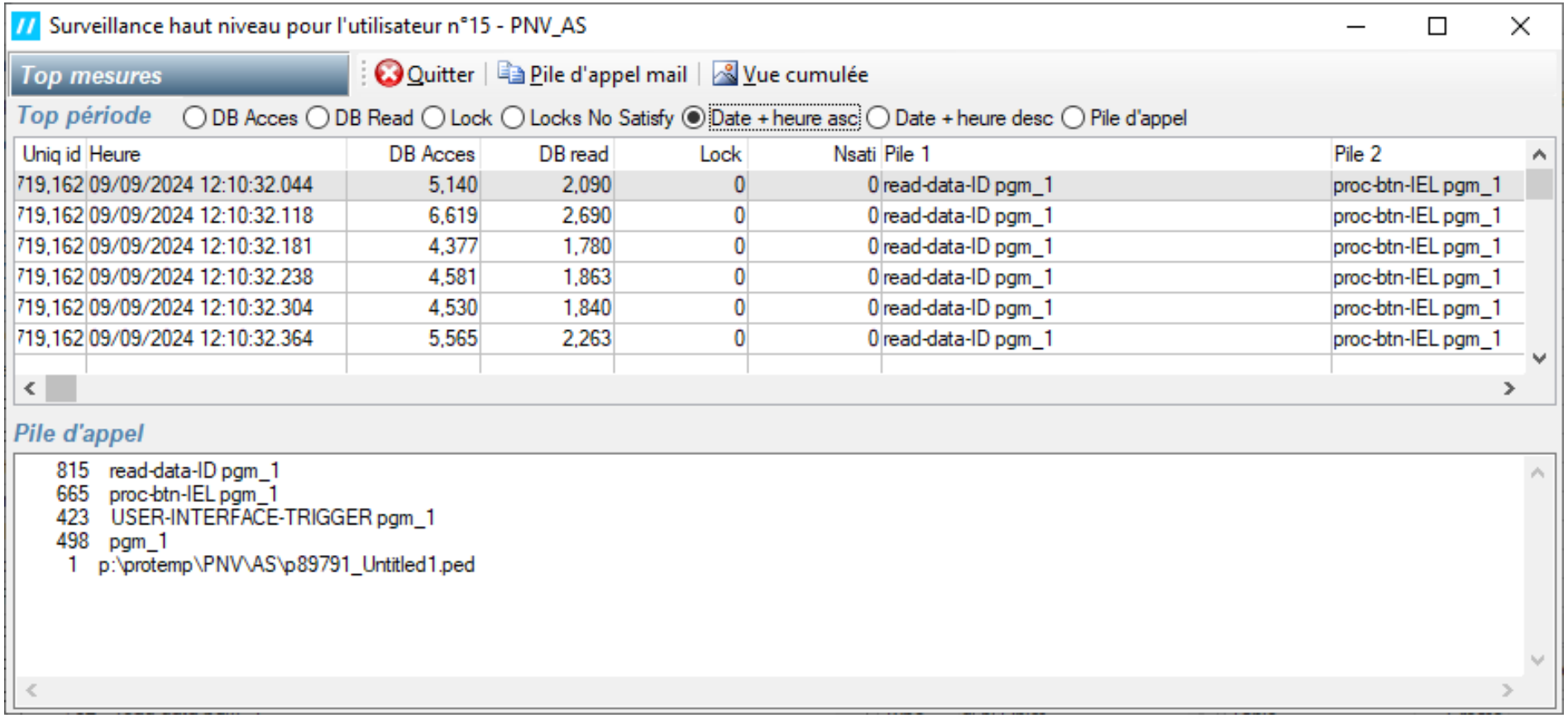
# // Demo

# DEMO



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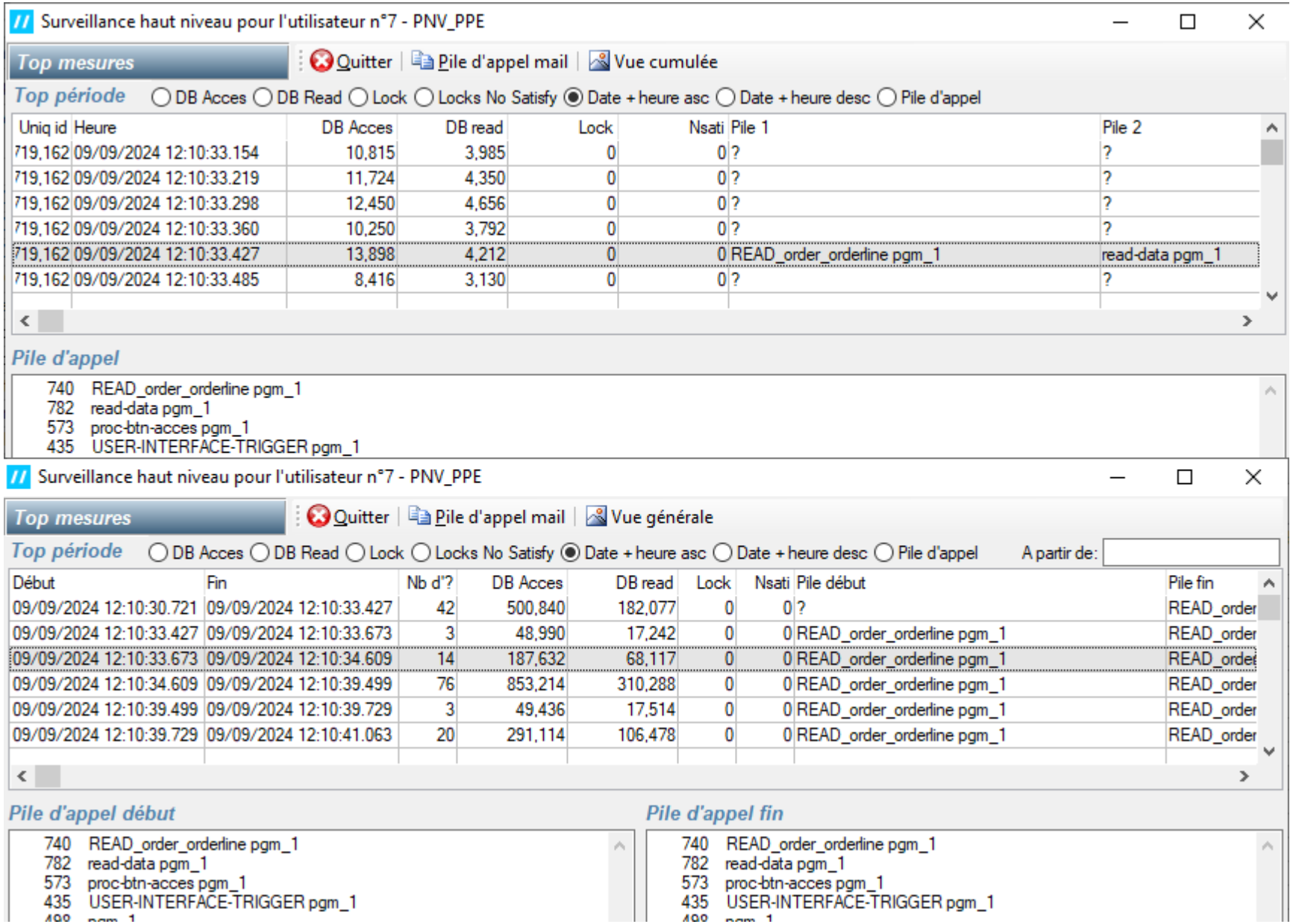
# DEMO



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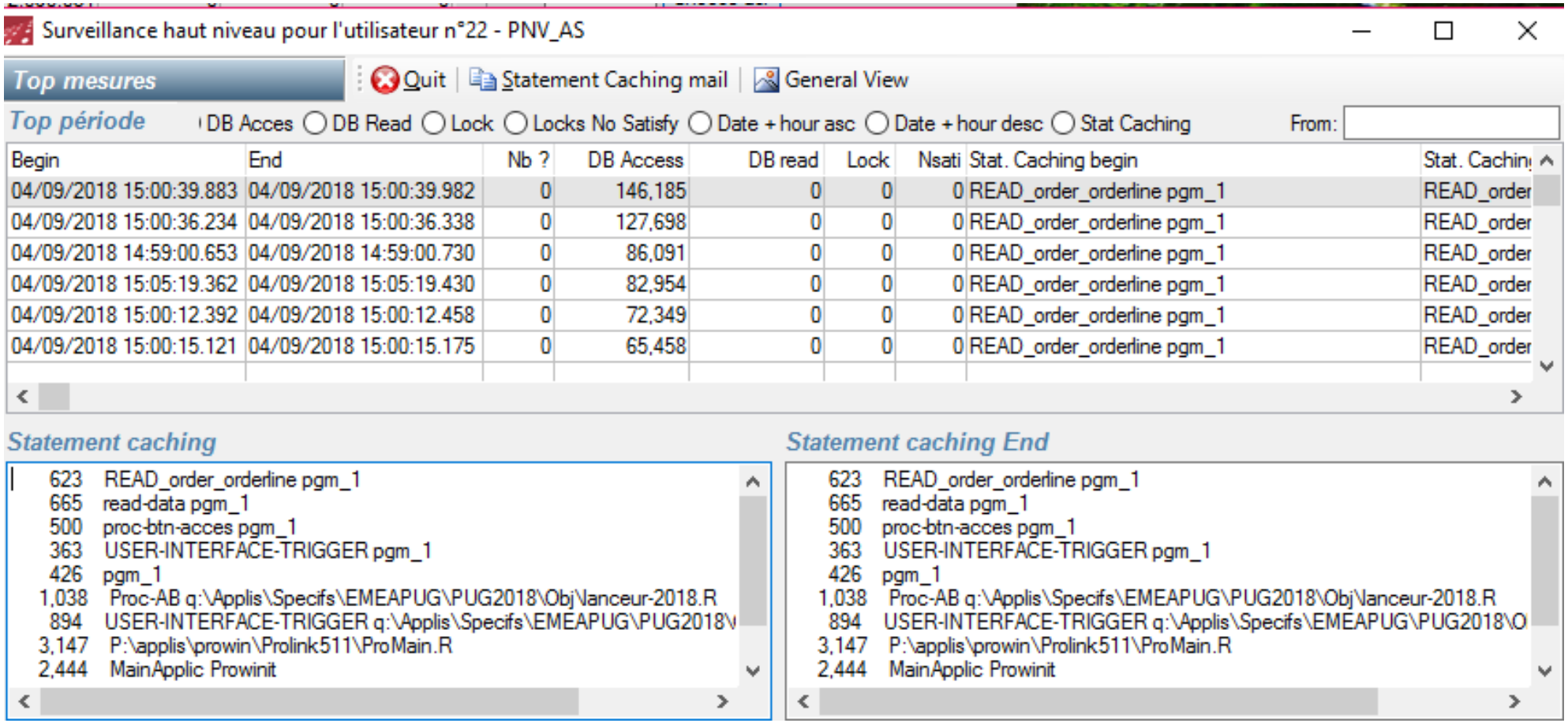
# // How can you interpret the « ? » value ?

## / Example on REMC

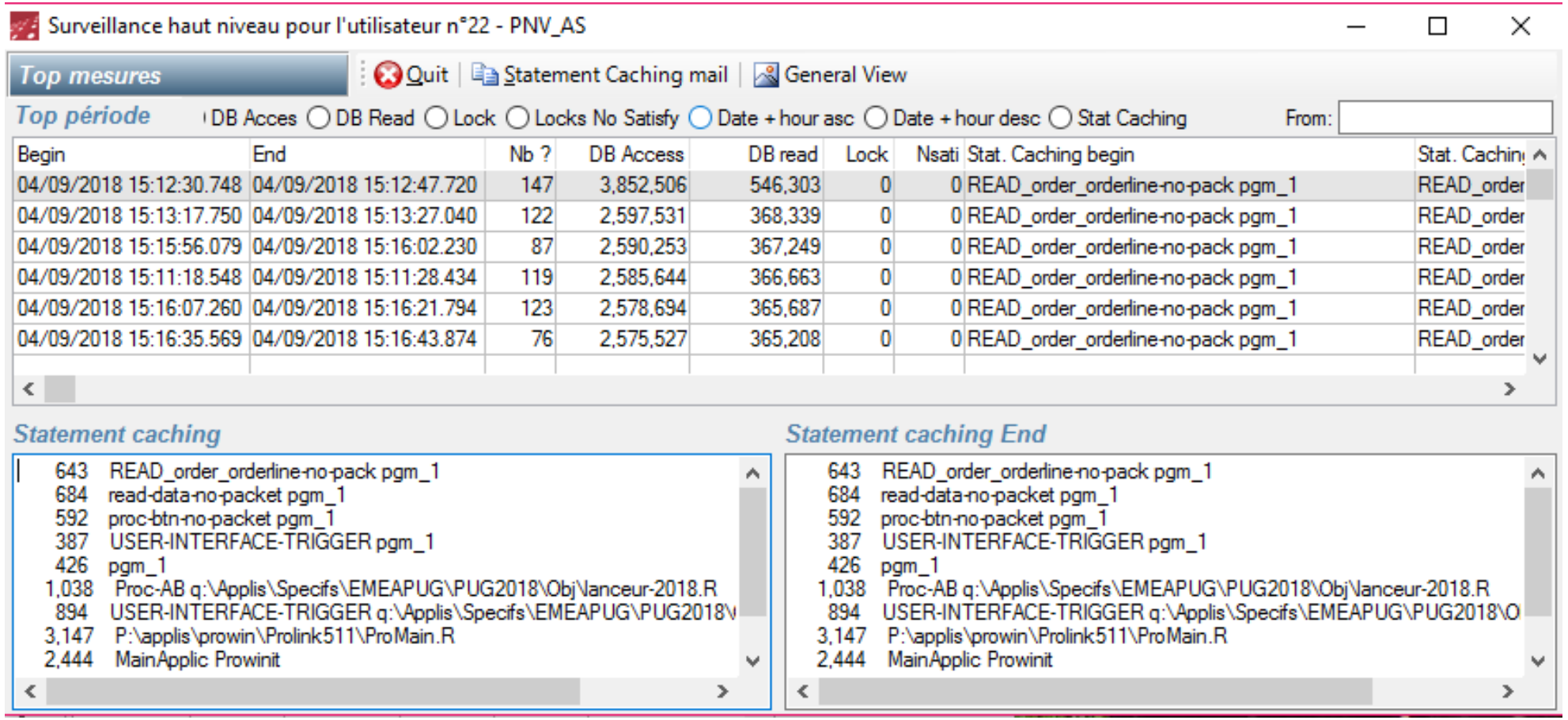
**FOR EACH customer NO-LOCK**




PROGINOV

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

```
FOR EACH customer WHERE STRING(ROWID(customer)) = my_rowid NO-LOCK
```




PROGINOV

# // Demo

# DEMO

User Monitoring sur DBLNXASP34 base SPEW0695 vers 12:20:35 repertoire poolprod/pug2023/ (ppe, PMU, ppe, ppe, ppe, ppe)

| User | heure | N° seq | Connect-Name | PID | DB ACCES | DB Reads | Create | Read | Update | Delete | lock | lk No Satisfy | Device | _Connect-lo |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |
| 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 | 1 |

```
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 | Para

| Type | dl | pr | Objet |
|---|---|---|---|
| -ASP | | | pgm_1 |

| Table | Create | Read | Update | Delete | Nb Rceord |
|---|---|---|---|---|---|
| OrderLine | | 3,297,315 | | | 1,506,383 |
| Order | | 139 | | | 3,953 |

pgm_1.r.mst.txt - Bloc-notes

Fichier Edition Format Affichage Aide

```
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 : 740 | Suivant | Annuler

Direction: Haut / Bas

Respecter la casse

Retour à la ligne



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# // 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



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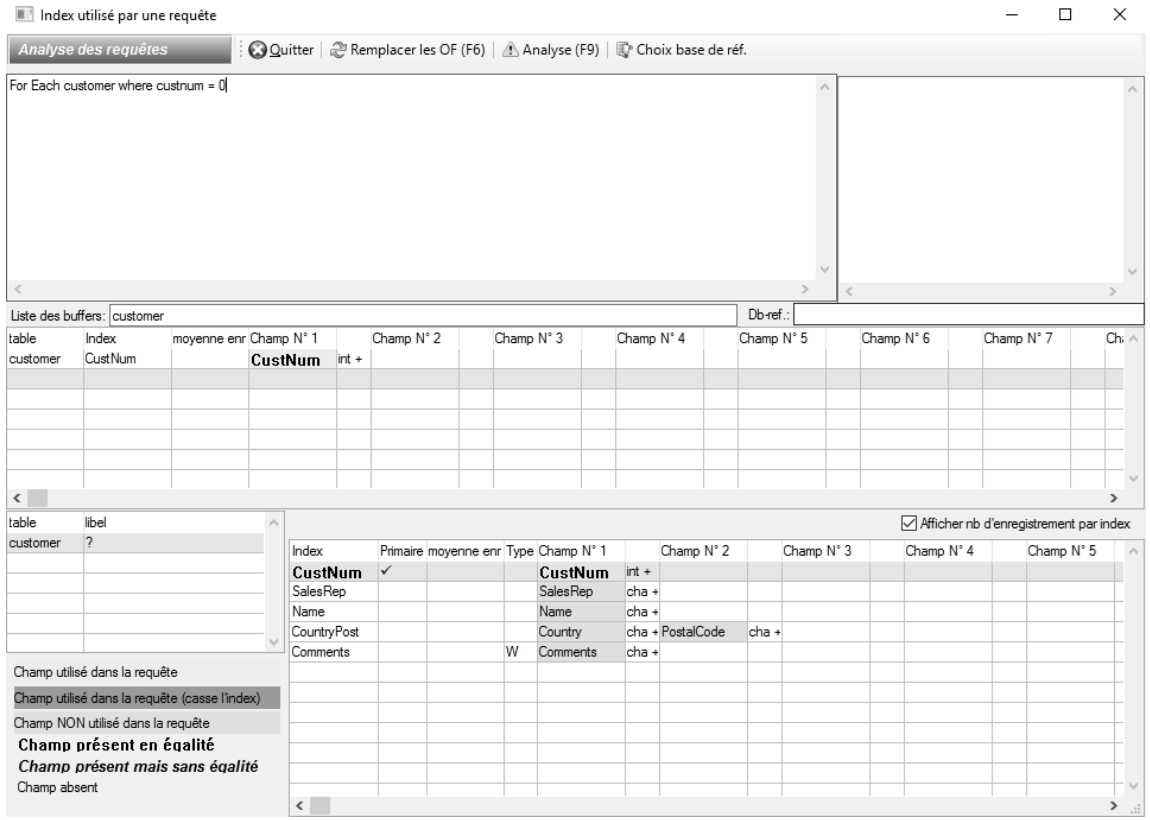
# // About index

/ Find best **FOR EACH** indexes

/ hQry:**QUERY-PREPARE**
/ hQry:**INDEX-INFORMATION**




# // 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 diffrent machines
- Count tables and indexes on the restored DB during



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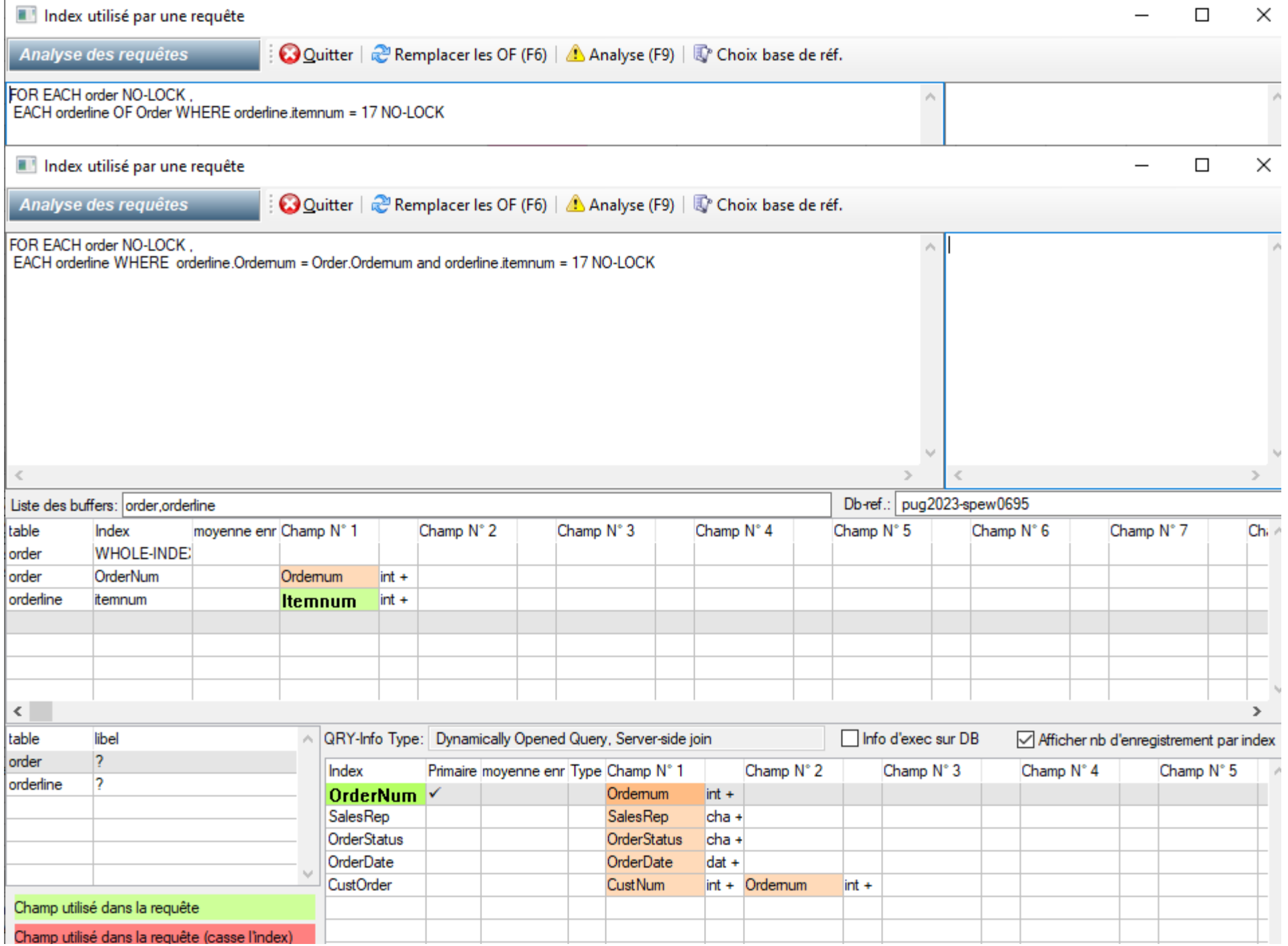
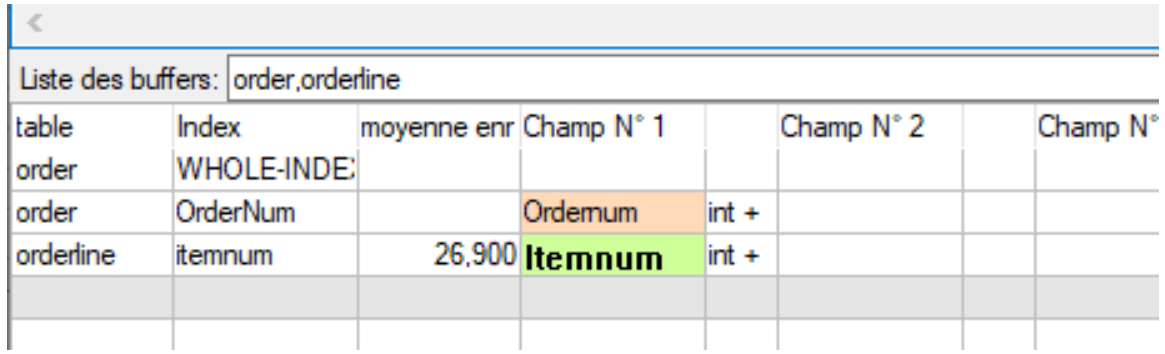
# // Demo

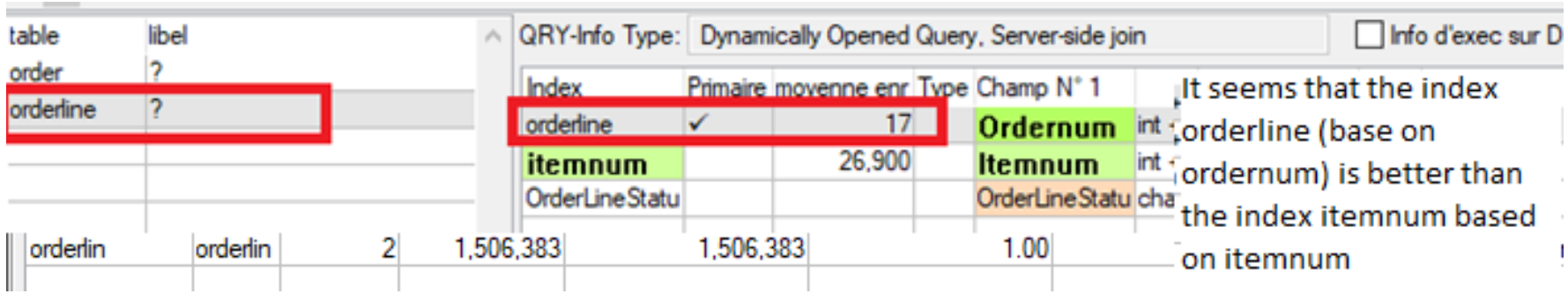


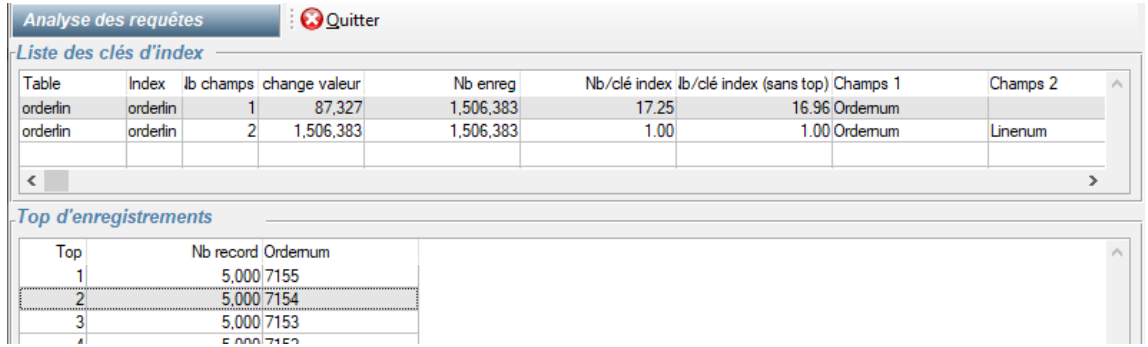

DEMO

PROGINOV

# DEMO



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# // Diagnostic

## / Diagnostic event parameter : -DiagEvent

- Lock table overflow
- Bithold
- SysError

## / Diagnostic event level : -DiagEvtLevel

- 2 : Summury data & details data

## / Diagnostic pause length : -DiagPause

- 0 seconds

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

Diag file

Diag dir

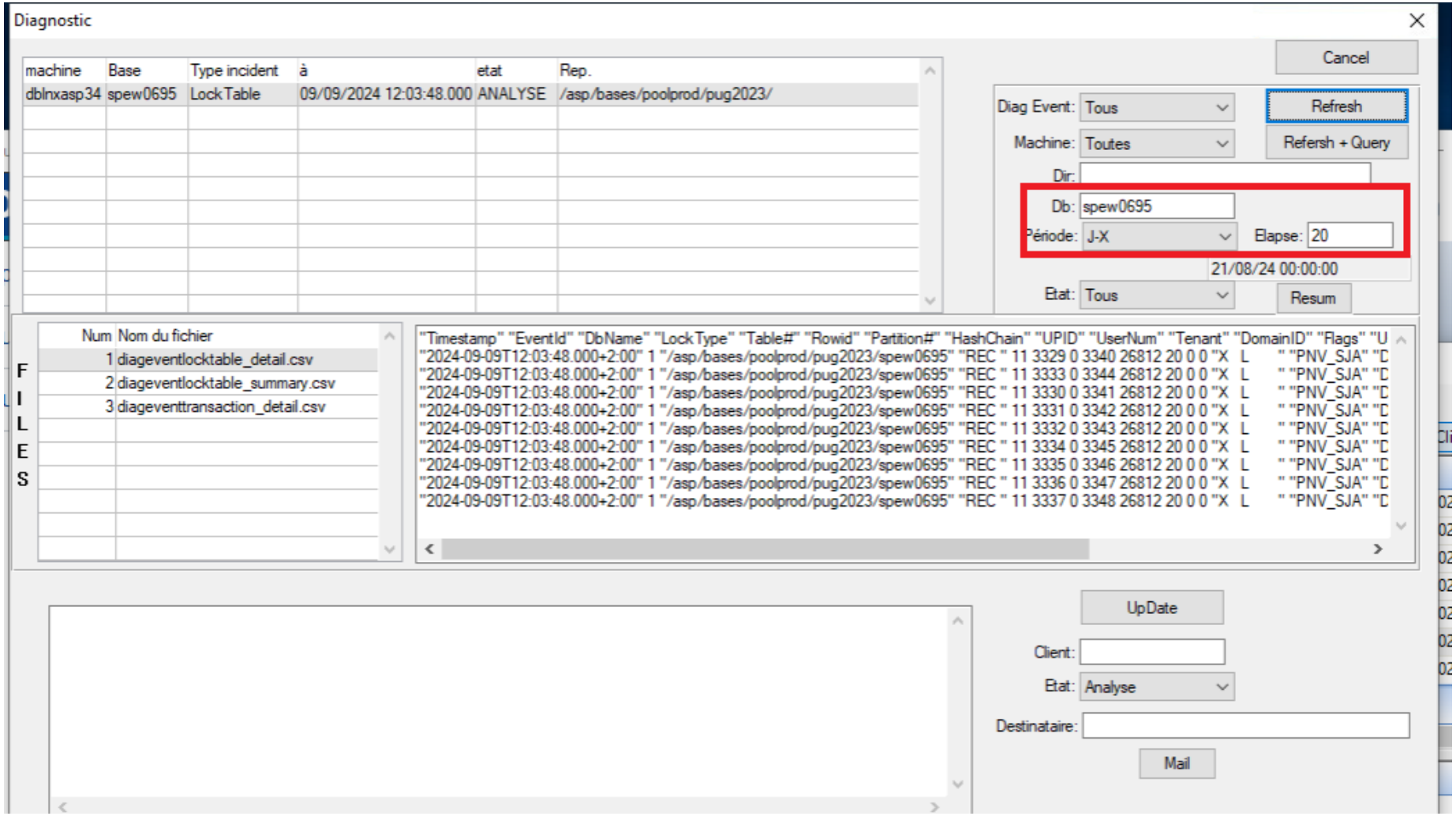
**/ Analysis**

**/ Correction**

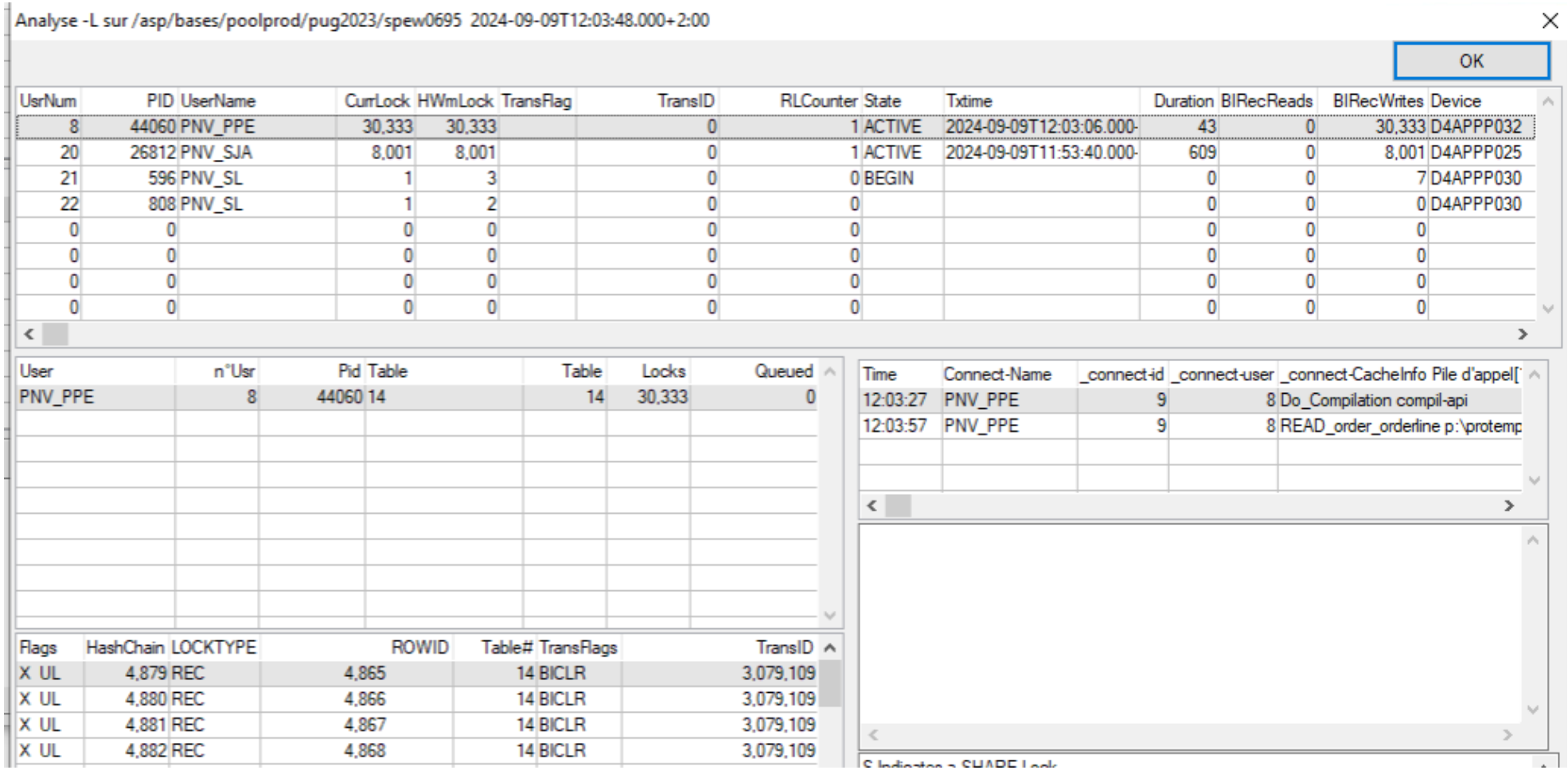
PROGINOV

# // Demo

# DEMO


Diagnostic
machine Base Type incident à etat Rep.
dblnxasp34 spew0695 LockTable 09/09/2024 12:03:48.000 ANALYSE /asp/bases/poolprod/pug2023/
Cancel
Diag Event: Tous
Refresh
Machine: Toutes
Refersh + Query
Dir:
Db: spew0695
Période: J-X
Elapse: 20
21/08/24 00:00:00
Etat: Tous
Resum
FILES
Num Nom du fichier
1 diageventlocktable_detail.csv
2 diageventlocktable_summary.csv
3 diageventtransaction_detail.csv
"Timestamp" "EventId" "DbName" "LockType" "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" "D
"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" "D
"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" "D
"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" "D
"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" "D
"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" "D
"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" "D
"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" "D
"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" "D
UpDate
Client:
Etat: Analyse
Destinataire:
Mail

# DEMO



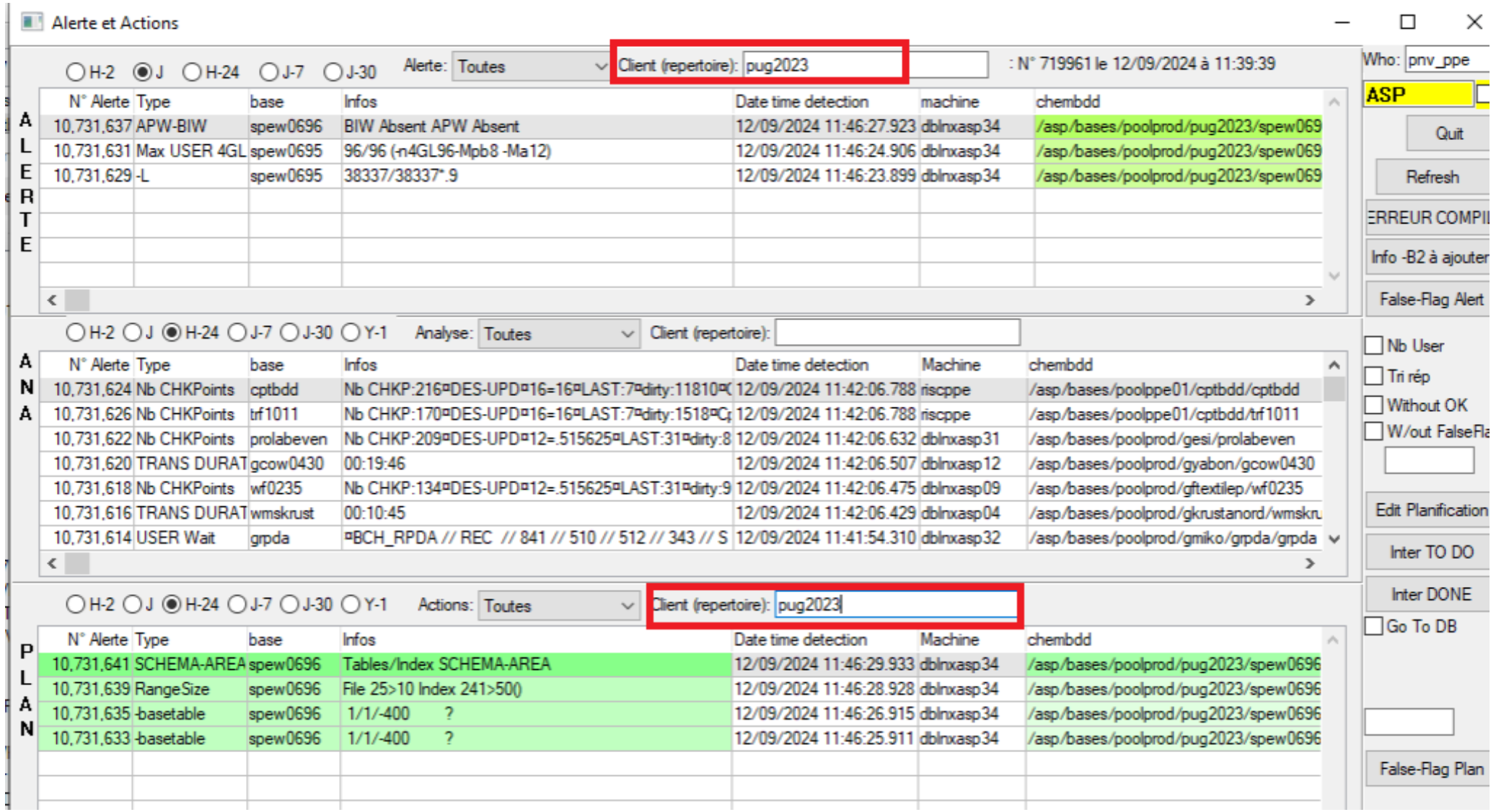

| UsrNum | PID | UserName | CurrLock | HWmLock | TransFlag | TransID | RLCounter | State | Txtime | Duration | BIRecReads | BIRecWrites | Device |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 44060 | PNV_PPE | 30,333 | 30,333 | | 0 | 1 | ACTIVE | 2024-09-09T12:03:06.000- | 43 | 0 | 30,333 | D4APPP032 |
| 20 | 26812 | PNV_SJA | 8,001 | 8,001 | | 0 | 1 | ACTIVE | 2024-09-09T11:53:40.000- | 609 | 0 | 8,001 | D4APPP025 |
| 21 | 596 | PNV_SL | 1 | 3 | | 0 | 0 | BEGIN | | 0 | 0 | 7 | D4APPP030 |
| 22 | 808 | PNV_SL | 1 | 2 | | 0 | 0 | | | 0 | 0 | 0 | D4APPP030 |
| 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 |

# DEMO



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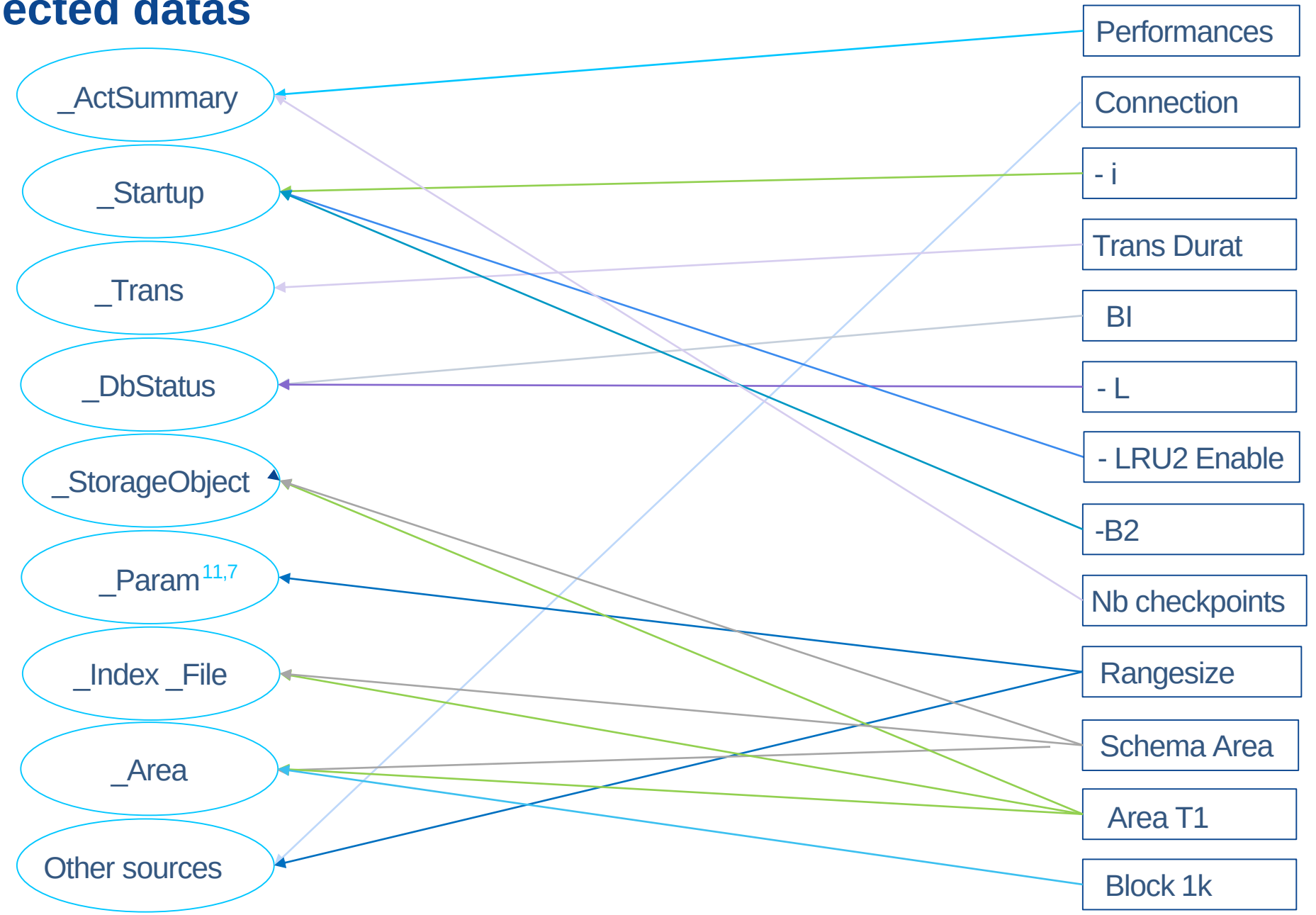
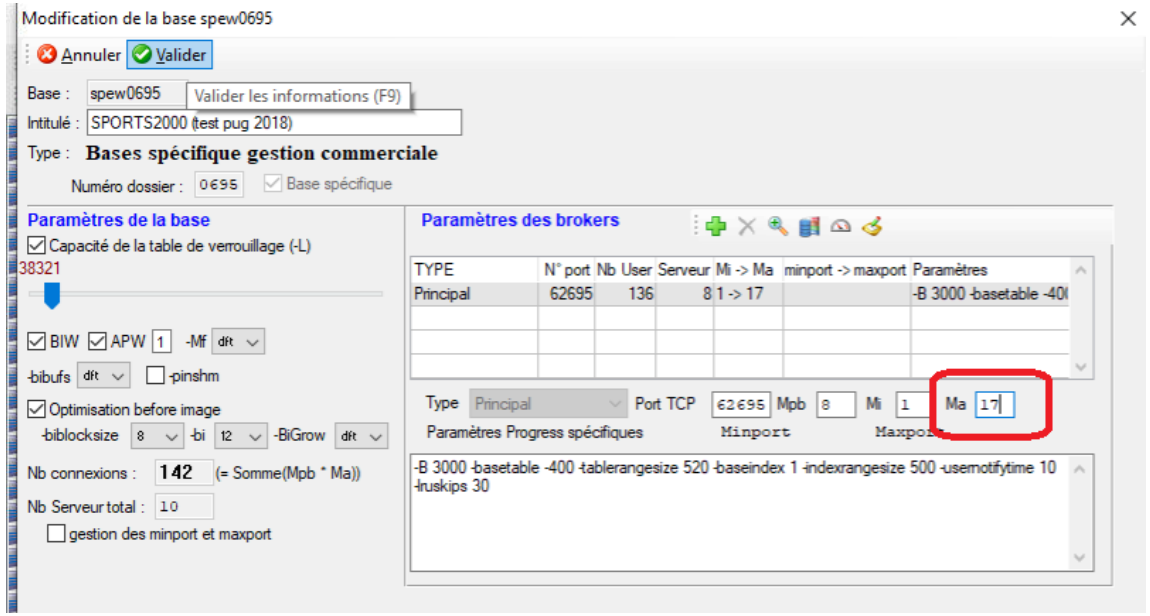
# // Collected datas

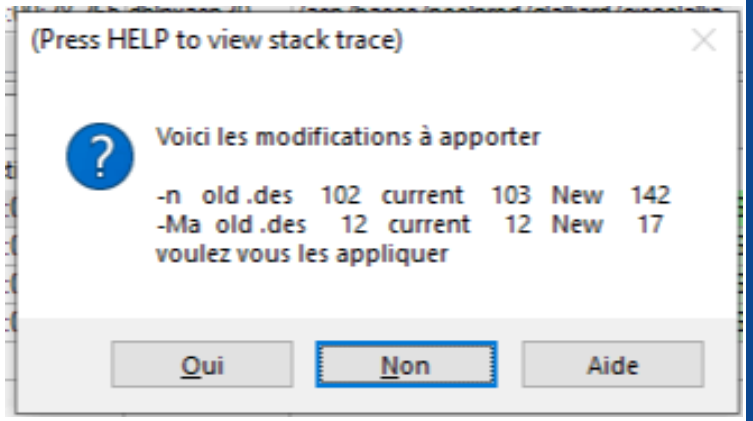


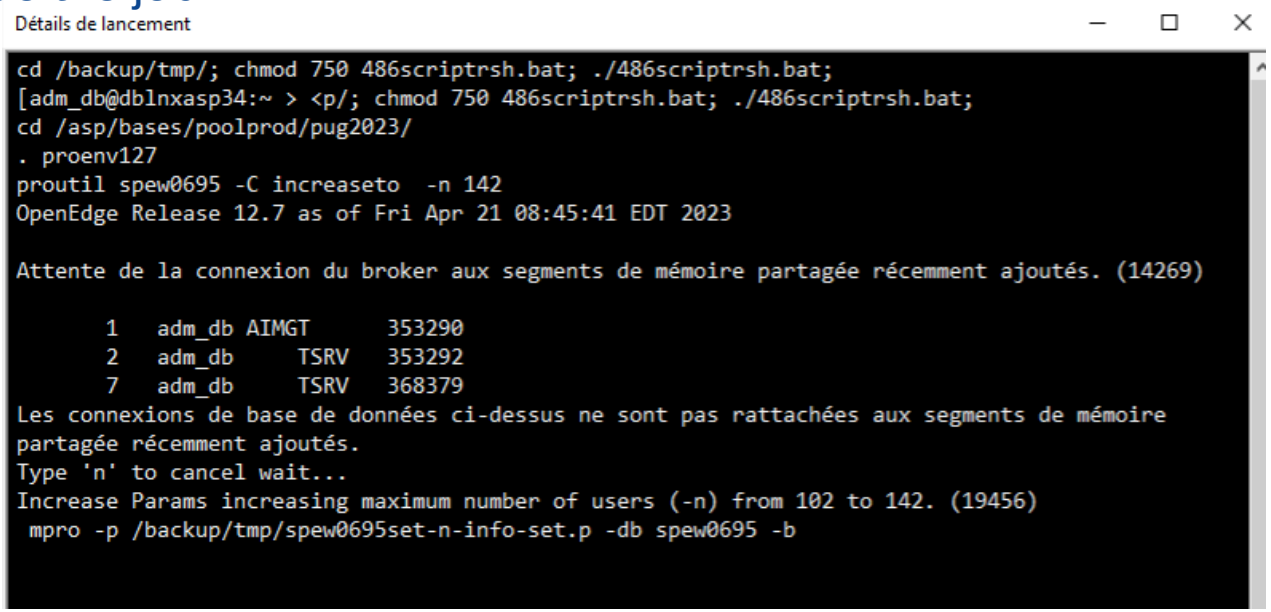
# // Demo

# DEMO




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



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| 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 deamon 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 priorization

## / 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



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# // Demo




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# // 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. ☺



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# Questions ?

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