

PROG/NOV

business management software

Health-monitoring console
EMEA PUG October 2018

- // Proginov ...and us
- // Our tips and tricks with live demo

// Proginov ...and us

// Our tips and tricks with live demo

PROG/NOV

business management software



- 22 years of existence
- A team of 250 on 1 location
- 2 private Datacenters
- More than 10 000 Progress DB



// ... and us



Inès Goujon

- Computer science and astrophysics studies
- Progress developer at Proginov for 22 months
- Work among the DBA team for about 10 months



Patrice Perrot

- Progress developer since 2001
- Optimize progress source since 2005
- Work for Proginov since 2008
- Optimization of “source and DB” in the DBA team since 2010

// Our problematic



// + 10 000 databases

// + 200 000 r-code

➔ Where are the issues ?



// Proginov ...and us

// Our tips and tricks with live demo

// General presentation



Global monitoring



 5 minutes
 Analysis, prioritization & alerts

Low Level monitoring





 30 seconds
 Analysis & prioritization



High Level monitoring



 0,05 second
 Metrics



Demo : <https://www.youtube.com/watch?v=iTlliTjLVe4>

// Choice of **DBs** to monitor



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



Demo : <https://www.youtube.com/watch?v=UtJEjjVCH1M>

// Statement caching technic

// How to change the caching type value ?

/ Table : `_Connect`

/ Field : `_Connect-Caching-type`

- The different values of `_Connect-Caching-type` :
 - 2 : stack (STCA-OE)
 - 3 : one time

// The problems...

2 ➔ Performance

3 ➔ Just 1

➔ Value changed ignored (3 to 3)

FOR EACH

Type		<u>Nb loop</u>	Loop Time (ms)	%Elapse
NO-STCA	SELF	169	354,816	
STCA-OE	SELF	167	360,491	1,60

FIND FIRST

Type		<u>Nb loop</u>	Loop Time (ms)	%Elapse
NO-STCA	SELF	198 012	0,302	
STCA-OE	SELF	88 521	0,677	123,88

// Our statement caching picking method



// Our statement caching picking method

```
FIND FIRST sports2000._connect WHERE _connect-id = I-Connect-Id_Of_Very_Active_User  
NO-LOCK NO-ERROR.
```

```
DO WHILE TIME < I-TIME-END :
```

```
DO TRANSACTION :
```

```
FIND CURRENT sports2000._connect EXCLUSIVE-LOCK NO-ERROR.
```

```
/*Data collect / Leave if Disconnected */
```

```
_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 . ➡ How often ?
```

```
END.
```

```
DO TRANSACTION :
```

```
FIND CURRENT sports2000._connect EXCLUSIVE-LOCK NO-ERROR.
```

```
_connect-CachingType = 0 .
```

```
FIND CURRENT sports2000._connect NO-LOCK NO-ERROR.
```

```
END.
```

FOR EACH

Type		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

0,05 s

FIND FIRST

Type		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

0,05 s

FOR EACH

Type		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

0,05 s

FIND FIRST

Type		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

0,05 s

// Our statement caching picking method

/ To avoid a DB crash, use a stacktrace directory

VERY IMPORTANT

/ Settings in the PROMON

- R&D Advanced options
- 1. Status Displays...
- 18. Client Database-Request Statement Cache...
- 8. Specify Directory for Statement Caches Files





Demo : <https://www.youtube.com/watch?v=cgd1inCgYqI>

// Choice of **users** to monitor in specific



1

Access

2

Rec Reads

3

Reads

4

Rec Locks

5

CUD

// How can you interpret the “?” ?

➔ Example on REMC

FOR EACH customer NO-LOCK

Surveillance haut niveau pour l'utilisateur n°22 - PNV_AS

Top mesures

Top période DB Access DB Read Lock Locks No Satisfy Date + hour asc Date + hour desc Stat Caching From:

Begin	End	Nb ?	DB Access	DB read	Lock	Locks	Stat. Caching begin	Stat. Caching
04/09/2018 15:00:38.883	04/09/2018 15:00:38.982	0	146,185	0	0	0	0 READ_order_orderline pgm_1	READ_order
04/09/2018 15:00:36.234	04/09/2018 15:00:36.338	0	127,698	0	0	0	0 READ_order_orderline pgm_1	READ_order
04/09/2018 14:59:00.653	04/09/2018 14:59:00.730	0	86,091	0	0	0	0 READ_order_orderline pgm_1	READ_order
04/09/2018 15:05:19.362	04/09/2018 15:05:19.430	0	82,954	0	0	0	0 READ_order_orderline pgm_1	READ_order
04/09/2018 15:00:12.392	04/09/2018 15:00:12.458	0	72,349	0	0	0	0 READ_order_orderline pgm_1	READ_order
04/09/2018 15:00:15.121	04/09/2018 15:00:15.175	0	65,458	0	0	0	0 READ_order_orderline pgm_1	READ_order

Statement caching

Statement caching End

Nb ?
0
0
0
0
0
0
0

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

Surveillance haut niveau pour l'utilisateur n°22 - PNV_AS

Top mesures

Top période DB Access DB Read Lock Locks No Satisfy Date + hour asc Date + hour desc Stat Caching From:

Begin	End	Nb ?	DB Access	DB read	Lock	Locks	Stat. Caching begin	Stat. Caching
04/09/2018 15:08:38.487	04/09/2018 15:08:56.571	240	5,107,284	724,123	0	0	0 READ_order_orderline-no-pack pgm_1	READ_order
04/09/2018 15:08:14.391	04/09/2018 15:08:20.501	80	2,590,761	367,306	0	0	0 READ_order_orderline-no-pack pgm_1	READ_order
04/09/2018 15:09:59.343	04/09/2018 15:10:10.666	110	2,990,130	363,032	0	0	0 READ_order_orderline-no-pack pgm_1	READ_order
04/09/2018 15:09:42.225	04/09/2018 15:09:55.341	179	2,544,106	360,768	0	0	0 READ_order_orderline-no-pack pgm_1	READ_order
04/09/2018 15:09:03.805	04/09/2018 15:09:08.131	37	1,333,946	189,172	0	0	0 READ_order_orderline-no-pack pgm_1	READ_order
04/09/2018 15:09:38.085	04/09/2018 15:09:42.221	35	1,314,213	186,370	0	0	0 READ_order_orderline-no-pack pgm_1	READ_order

Statement caching

Statement caching End

Nb ?
240
80
110
179
37
35

// -BP / DISK READ : WARNING

/ Example : 100 loops

```
_MyConn-NumSeqBuffer = V-Bp .  
FOR EACH customer NO-LOCK cpt = 1 TO 100 :  
END.  
_MyConn-NumSeqBuffer = 0 .
```

V-Bp	DB Access	DB / OS read	Rec Read	BufMissed	Usual Task
6	25 800	3 801	10 000	14,7	Increase -B
0	25 800	40	10 000	0,1	OK

/ Increase -B have no effect on DB « Buffer Missed / Buffer HIT »



Demo : <https://www.youtube.com/watch?v=cJ27X-rMmqU>

// Find the mistakes in the right r-code



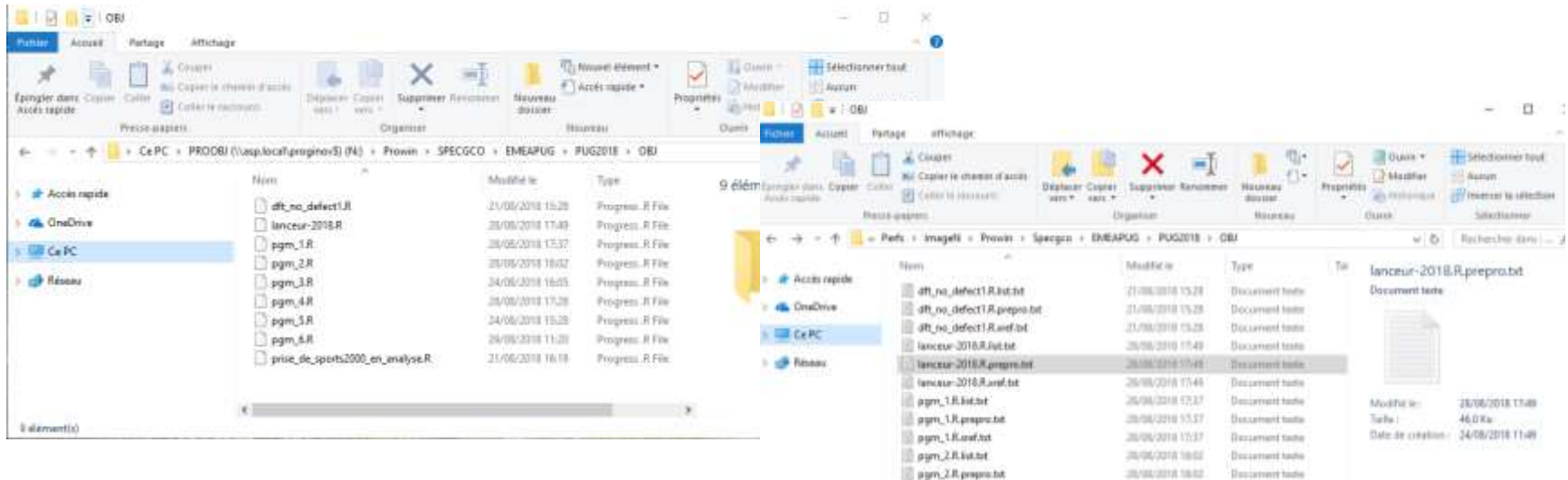
At every compile

Pre-process

Debug list ★

XREF

★ The lines are indicated in the STCA





Demo : <https://www.youtube.com/watch?v=fhRLnPjPgV8>

// About indexes



★ For **FOR EACH**

➔ hQry:QUERY-PREPARE Instruction

➔ hQry:INDEX-INFORMATION



// Counting records

- ➔ Backup DB every night
- ➔ Test of backup on a different machine
- ➔ Count table after table and index after index on the restored DB during
- ➔ Record them ! It's done, you can use it !



// And after... ?

CORRECTION



Demo : <https://www.youtube.com/watch?v=Cpo8nSKAb3k>





Demo : <https://www.youtube.com/watch?v=rSk5Xhqlygk>

// Diagnostic



/ Diagnostic event parameter : -DiagEvent

- ➔ Lock table overflow
- ➔ Bithold
- ➔ Syserror

/ Diagnostic event Level : -DiagEvtLevel

- ➔ 2 : Summary Data & Details data

/ Diagnostic pause length: -DiagPause

- ➔ 0 second

/ Diagnostic directory : -DiagDir (/stacktrace)



Diagnostic file

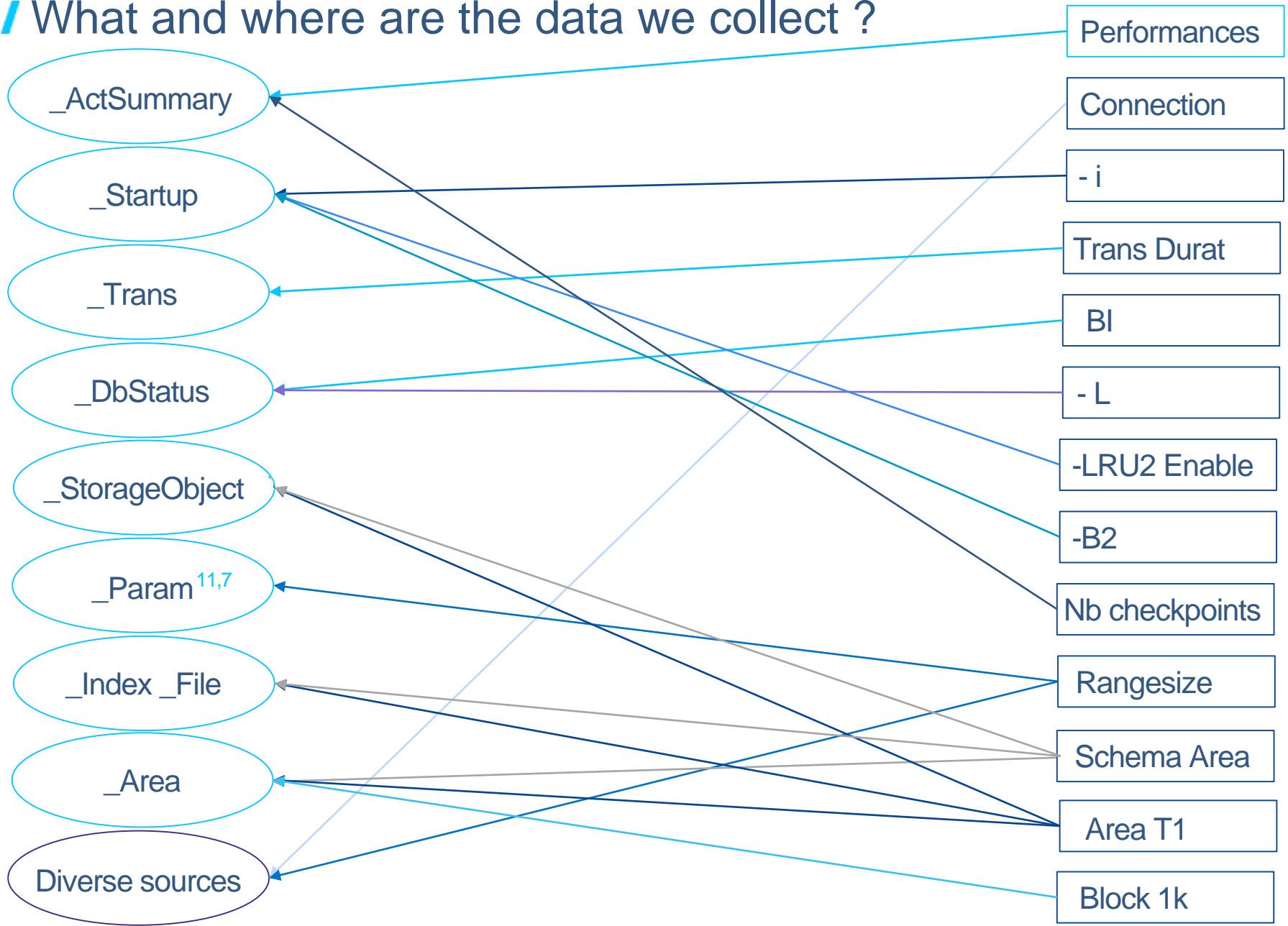


Analysis &
correction



Demo : https://www.youtube.com/watch?v=sGO_b8eXLEI

// What and where are the data we collect ?



// And after... ?

CORRECTION



Demo : <https://www.youtube.com/watch?v=2dp8kaoeYu0>

// Our corrections/actions for September 2018



Type	Number	Description
-B2 need	94	Memory resource allocated for future
-B2 small	28	Close to saturation
-L	16	Lock Table Overflow (> 90 %)
Area T1	17	Area type 1
DBANALYS	57 944	Automatic task
IDXCOMPACT	5 127	Automatic task
LRU2 Enable	256	Due to SQL
MAJ -B	166	Tunning
Max User	127	Nb user > -n
RangeSize	106	No Range parameters
Schema-Area	67	Table or Index in the Schema-Area
- i	0	No-integrity parameter
Counting record	6 853	Automatic task

// Can't control immediately ?





// Can't control immediately ?

➔ The top Worst 200

Depuis: 2 heures | Alerte: DB ACCESS | Top: 200 | Tri: Nombre d'alertes | Exclure user : tablemove.idxmove.odbcreader | Choix usr | mail | Actual

Client	Base	Utilisateur	APP	PID	Nombre d'alertes	TOP 1	TOP 2	TOP 3	TOP 4	TOP 5
SAVARIEAU	pocw0111	SAV SP	D4APPD16	6,076	37	10,716,012	9,128,115	9,076,201	8,809,868	8,804,100
MILLET	qcow0761	MILVI CHTE	D4APPH24	54,620	13	6,005,570	5,659,530	5,558,674	5,513,896	5,485,679
BREMSTAR	ws0320	wbremstar	lnxapp105.asp.local bat	30,140	13	2,225,447	1,830,819	1,796,483	1,796,431	1,611,846
THIEBAUT	qcow0225	BCH VOLE	D4BATCHV18	21,052	12	7,018,668	6,404,633	1,548,976	1,394,666	1,391,506
BREMSTAR	ws0320	wbremstar	lnxapp105.asp.local bat	11,501	10	1,811,375	1,356,454	1,351,034	1,348,202	1,344,645
SCAR	qed0770	BCH SCARBR	D4BATCHV08	48,728	7	4,830,522	3,793,205	3,658,982	3,070,867	1,894,988
HEALTHCAIR	qcow0601	HEA V ANOL	D4APPC06	22,416	7	1,149,761	1,147,548	1,147,147	1,131,586	1,130,047
MILLET	qcow0761	MILSG LUBE	D4APPH29	19,100	6	3,682,012	2,796,460	1,890,283	1,849,318	1,841,001

N° relevé	heure	N° seq	DB ACCES	DB Reads	Create	Read	Update	Delete	lock	Device	Pile d'appel
142,490	08:49:39	71	1,811,375	0	1	866,459	1	0	19	lnxapp105.asp.local	preparation-rhq web/41/listepros ws
142,503	09:56:58	13	1,797,342	0	1	865,584	1	0	19	lnxapp105.asp.local	preparation-rhq web/41/listepros ws
142,490	08:53:09	78	1,356,454	0	0	649,214	0	0	9	lnxapp105.asp.local	preparation-rhq web/41/listepros ws
142,495	09:16:41	125	1,351,034	0	0	650,201	0	0	9	lnxapp105.asp.local	preparation-rhq web/41/listepros ws
142,485	08:26:07	24	1,348,202	0	0	650,113	0	0	9	lnxapp105.asp.local	preparation-rhq web/41/listepros ws
142,495	09:15:41	123	1,344,645	0	0	649,072	1	0	17	lnxapp105.asp.local	preparation-rhq web/41/listepros ws
142,497	09:25:11	142	1,344,572	0	0	649,061	0	0	9	lnxapp105.asp.local	preparation-rhq web/41/listepros ws
142,494	09:12:10	116	1,336,638	0	0	650,016	0	0	9	lnxapp105.asp.local	preparation-rhq web/41/listepros ws

6,042 preparation-rhq web/41/listepros_ws		Type	dl	pi	Objet	<input type="checkbox"/> Charger les traces des batchs				ProPath
Table	Create	Read	Update	Delete						
proweb		865,401								
cmscompu		328								
modclass		300								
cmsprcomp		145								
cmsarbo		118								
modlien		78								
cmslien		44								
cmssite		16								
tabweb		10								

// Customer Feedback

/ Low level monitoring

- ➔ April 2017
- ➔ No slowness feedback

/ High level monitoring

- ➔ October 2017
- ➔ No slowness feedback

- ➔ Surprise of our reactivity (ex : -L, -n,...)
- ➔ Call for a slowness ? We are already treating it !



// Questions ?

// Another question later ?

Contact us at pperrot@proginov.com or
igoujon@proginov.com

Thank you for your attention 😊



+33 (0)2 51 70 93 93

www.proginov.com