Skills 101 - SharePlex

Episode 3

First 80 Hours as a SharePlex Administrator

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Agenda

- SharePlex Processes
- Documentation Resources
- Monitor your replication
- SharePlex Parameters



Quest

SharePlex Processes





Documentation Resources

 SharePlex Technical Documentation https://support.quest.com/shareplex/11.4/technical-documents



Quest

Documentation Resources

 SharePlex Knowledge Base https://support.quest.com/shareplex/kb







Documentation Resources

SharePlex Support https://support.quest.com/

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Monitor Your Replication: Processes

Command

show

sp_ctrl ()	ptysup16:61927)> show			
Process	Source	Target	State	PID
Capture			Running	 26896
Read	o.PD B 19		Running	26906
Export	exp-order	ptysup17	Running	26930
Export	exp-product	ptysup17	Running	26931
Export	exp-common	ptysup17	Running	26932





Monitor Your Replication: Processes

Command

	<pre>sp_ctrl (ptysup16:61927)> 1status</pre>
	Detailed Status for proguals
	Process State PID Running Since
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	$\begin{array}{cccc} Cop & Running & 13130 07-0ct-24 19:13:27 \\ Cmd & Ctrl & Running & 13147 04-0ct-24 19:18:34 \\ \end{array}$
	Data/Host: wrongname6
	Capture Running 26896 04-Oct-24 19:40:30
	Data/Host: 0.PDB19
	Read Running 26906 04-Oct-24 19:40:31
	Data/Host: 0.PDB19
	Data/Host: ptysup17
	Queue Name: exp-order
	Export Running 26931 04-Oct-24 19:40:33
	Data/Host: ptysup17
	Queue Name: exp-product
latatura	Export Running 26932 04-Oct-24 19:40:33
Islalus	Data/Host: ptyscoll/
	Type # Msgs Size (Mb) Age (mn) Oldest Msg Time Newest Msg Time
	Capture 90 1 0 04-Oct-24 19:42:15 04-Oct-24 19:42:15
	Queue Name: 0.PDB19
	Export 745 1 0 04-Oct-24 19:42:03 04-Oct-24 19:42:15
	Queue Name: exp-order
	Export 0 I 0.04-Oct-24 19:40:33 04-Oct-24 19:40:33
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
	Queue Name: exp-common
	System is used as a source machine
	Replication Configurations:
	Replication active from "spl01-01.cfg", actid 181, for database o.PDB19 since 04-Oct-24 19:40:30





Monitor Your Replication: Queues

Command									
	$a_{\rm D}$ $a_{\rm D} = \frac{1}{2} \left(\frac{1}{2} + 1$	tatua							
	Queues Statistics for ptysup	Queues Statistics for ptysup16							
	Name: o.PDB19 (Capture qu	ieue)							
	Number of messages:	46 (Age	0 min; Size	1 mb)					
	Backlog (messages):	0 (Age	0 min)						
	Name: exp-order (Export q	ueue)							
	Number of messages:	254 (Age	0 min; Size	5 mb)					
qstatus	Backlog (messages):	0 (Age	0 min}						
	Name: exp-product (Export	; queue)							
	Number of messages:	0 (Age	0 min; Size	l mb}					
	Backlog (messages):	0 (Age	0 min}						
	Name: exp-common (Export	queue)							
	Number of messages:	1218 (Age	0 min; Size	5 mb)					
	Backlog (messages):	0 (Age	0 min}						





Monitor Your Replication: Queues

<pre>sp_ctrl (ptysupl7:61927)> qstatus detail</pre>
Queues Statistics for ptysup17 Name: pst-comon (o.PDB19-o.PDB19) (Post queue) Number of messages: 0 (Age 0 min; Size 4 mb) Backlog (messages): 0 (Age 0 min)
Memory:1016Buffers available:1001Total queue buffers:1016Buffers available:1001Messages written:84606Writes to disk:115Messages read:84607Reads from disk:0
Name: pst-product (o.PDB19-o.PDB19) (Post queue) Number of messages: 0 (Age 0 min; Size 1 mb) Backlog (messages): 0 (Age 0 min)
Memory: Total queue buffers:1018Buffers available:1017Messages written:4Writes to disk:1Messages read:5Reads from disk:0
Name: pst-order (o.PDB19-o.PDB19) (Post queue) Number of messages: 0 (Age 0 min; Size 3 mb) Backlog (messages): 0 (Age 0 min)
Memory: Total queue buffers: 1016 Buffers available: 1003 Messages written: 79763 Writes to disk: 96 Messages read: 79764 Beads from disk: 0





Monitor Your Replication: Log files

• SharePlex log files are located under the \$SP_SYS_VAR_DIR/log directory

event_log	General events and alerts
*ocap	Capture related events. E.g. of the file names for the o.PDB19 source: o.PDB19_ocap01.log o.PDB19_ocap_ddl_01.log
*order	Read related events. E.g. of the file names for the o.PDB19 source: o.PDB19_ord01.log o.PDB19_ord_ddl_01.log
*xport	Export related events. The file name will contain the queue name and the target name. E.g. of the file names: exp-order_ptysupl7_xport01.log





Monitor Your Replication: Log files

*оро	Post for Oracle target related events. The file name will contain the queue name. E.g. o.PDB19_pst-order_opo01.log o.PDB19_pst-order_opo_ddl_01.log
*xpst	Post for Open target related events. The file name will contain the queue name.
desrv* declt*	Compare/Repair related events. The desrv will be generated on the source and the declt on the target. It will also contains the Job ID. E.g. for job id 1: desvr_1_o.PDB19_p17541.log declt_1_o.PDB19_a011635_p17187.log





Monitor Your Replication: Log files

- You can also access the log files in the sp_ctrl console with the show log command
 - -The show log command will show you the event_log entries
 - -There is a *show log <process name>* command for each process

sp ctrl (ptysup17:61927)> show log post for o.PDB19 queue pst-order 2024-10-04 18:40:33.935585 21829 1279440832 debug for STAB = 0x0opo2024-10-04 18:40:33.935588 21829 1279440832 Set debug for transactions to 0x0 opo 2024-10-04 18:40:33.935591 21829 1279440832 Set debug for RBFIX to 0x0 opo2024-10-04 18:40:33.935594 21829 1279440832 Set debug for transactions to 0x0 opo 2024-10-04 18:40:33.935598 21829 1279440832 debug for LONG = 0x0 opo 2024-10-04 18:40:33.935600 21829 1279440832 debug for OPST COM = 0x0 opo opo2024-10-04 18:40:33.935603 21829 1279440832 Set debug for SQL LCACHE to 0x0 2024-10-04 18:40:33.935606 21829 1279440832 Set debug for UDT to 0x0 opo 2024-10-04 18:40:33.935616 21829 1279440832 Set debug for SIGWAIT to 0x0 opo 2024-10-04 18:40:33.935619 21829 1279440832 Set debug for BLOCK to 0x0 opo opo 2024-10-04 18:40:33.935622 21829 1279440832 Set debug for BLOCK to 0x0 2024-10-04 18:40:33.935625 21829 1279440832 Set debug for SQL THREAD to 0x0 opo 2024-10-04 18:40:33.935628 21829 1279440832 Set debug for SYNCOP to 0x0 opo opo 2024-10-04 18:40:33.935630 21829 1279440832 Set debug for TIMEKEEPER to 0x0 2024-10-04 18:40:33.935634 21829 1279440832 debug for PRESCAN = 0x0 opo post log (15/60) Press ENTER for next page, q to return to sp ctrl command line.



Monitor Your Replication: Trace commands

 The trace command will collect statistics from a process and create a trace file that will contain a summary of the tasks the process was running and the time consumed. E.g. To run a trace for the Post process for the pst-order queue for 5 minutes:

trace post queue pst-order 5



Quest Monitor Your Replication: Trace commands

IRACE: Started: Fri Oct 4 18:49:39 2024 Completed: Fri Oct 4 18:54:40 2024

	0
ocessed	0
ipped	0
s ,	0
sea	0
	0
Count	Total (sec
2681 6502	
223	
3413	
2986	1
1590	
	DCessed ipped s sed Count 2681 6502 223 3413 2986 1590





Monitor Your Replication: Capture

• The show capture command will show the information on the capture process.

sp_ctrl ()	ptysup16:61927)> show captu	I	e detail
Host: pty	supl6 Syst	em time: 04-0	ct	5-24 19:43:52
		Operation	s	
Source	Status	Capture	d	Since
o.PD B 19	Running	1343	9	04-Oct-24 19:40:30
Oracle	current redo	log	:	5299
Captur	e <mark>cu</mark> rrent redo	log	•	5299
Captur	e log offset		•	53282320
Last c	hange processe	d:		
O,	peration on "S	P101"."INVENT	O	RIES" at 10/04/24 19:43:50
a	. _ t			B
Captur	e state			Processing
Activa	tion id			181
Error	count			0
Operat	ions captured		•	13439
Transa	ctions capture	d	•	2176
Concur	rent sessions		:	1
HWM co:	ncurrent sessi	.0 ns	:	11
Checkp	oints performe	d		3
Total	operations pro	cessed		13696
Total	transactions c	ompleted	:	2434
Total 1	Kbytes read		:	0
Redo r	ecords in prog	ress	:	1
Redo r	ecords process	ed	:	124421
Redo r	ecords ignored		:	110542
Redo r	ecords - last	HRID	:	AAAYKXAAMAABEdaACB





Monitor Your Replication: Read

 Any issues with the Read process will be reflected in an increase of the number of backlog messages on the Capture queue. You can verify this using the qstatus command and checking the backlog number

<pre>sp_ctrl (ptysup16:61927)> qsta</pre>	atus			
Queues Statistics for ptysuple Name: o.PDB19 (Capture que	5 1e)			
Number of messages:	46	(Age	0 min; Size	l mb)
Backlog (messages):	0	(Age	O min)	





Monitor Your Replication: Read

• You can monitor the Read process with *show read* command. If you use the *show read internal* command, this will show you a more complete set of information.

• One of the most common issues of Read slowness is that is going into Pass 2 due to missing the key information for an operation. Read will need to query this information on the database, slowing down the process.

 Pass 2 can be caused by not having Supplemental logging enabled for the key columns.





Monitor Your Replication: Read

sp_ctrl (ptysup16	<pre>sp_ctrl (ptysup16:61927)> show read internal</pre>							
Host: ptysup16								
	Operation:	S						
Source Status	Forwarde	d -	Since	Total		Backlog		
o.PDB19 Running	g 1600	4	04-Oct-24 19:40:31		44			
Last operation Redo log: INSERT in SCN : 6586	forwarded: 5299 Log off: "SP101"."LOGON" at 041857	s e]	et: 55920144 10/04/24 19:44:11					
Read state		:	Processing, passl					
Activation id			181					
Snapshot too ol	ld count	:	0					
Number of pass	cycles	:	144					
Operations in 2	last pass	:	0					
Peak operation:	s in a pass	:	349					
Operations for	warded	:	16004					
Transactions fo	orwarded	:	2581					
Full rollbacks		:	209					
Full rollback (operations skipped	:	207					
Updates with c	omplete key	:	5466					
Updates with ke	ey in cache	:	0					
Updates with ke	ey from Oracle	:	0					
Cursor cache hi	it count	:	0					
Cursor cache m	iss count	:	0					
Number of open	CUISOIS	:	0					
Number of activ	ve batches	:	0					
Batch message t	total	:	2486					



Monitor Your Replication: Export / Import

• Using *show export detail* on the source, you can obtain information on the network transmission rates between the Export and Import.

<pre>sp_ctrl (ptysup16:61927)> show export detail</pre>							
Host : pi Queue : ex	ty sup16 xp-order						
		Kbytes					
Target	Status	Exported	Since		Total	Backlog	
pty su p17	Running	6732	04-0c1	-24 19:40:33	5204	 0	
Since act	tivated						
Transm	ission rate		:	19 KB/s ec			
Highest	t transmission ra	ate	:	27 KB/sec Fri	Oct 4 19:	44:03 2024	
Average	e packet size		:	453 bytes			
Average	e send time		:	8 microsecond	3		
Since exp	port started						
Transm	ission rate		:	19 KB/sec			
Highest	t tr <mark>ansmissi</mark> on ra	ate	:	27 KB/sec Fri	Oct 4 19:	44:03 2024	
Average	e packet size		:	453 bytes			
Average	e send time		:	8 microsecond	3		
Largest	t deviation from	average	:	355 microseco	nds		
Send t:	imes deviating by	y more than 50	0%:	24.9%			
During th	he las t 15 secon	is:					
Transm	issi on rate		:	26 KB/sec			
Average	e packet size		:	454 bytes			
Number	of packets		:	908			
Average	e send time		:	7 microsecond	3		





Monitor Your Replication: Post

- To monitor the Post process, *show post* and *qstatus* are often used to verify if there are backlogs.
- You can also get information on the sessions and the SQL statements executed with the *show post sessions* and *show sql* commands.
- All three commands accept the *queue <qname>* option to show a specific queue information.



sp_ctrl (ptysup17:61927)> show post detail queue pst-comon

Operations

Posted Since

11526 04-Oct-24 18:40:33

Total

Backlog

0

9

Host : ptysup17 Source : o.PDB19 Queue : pst-comon

SQL cache hit count

onitor Your Replication:	Target	Status
	o.PDB19	Running
	Last	operation posted Redo log: 5299 UPDATE of "SP101"
	Last	transaction posts Redo log: 5299 SCN: 658048998
	Post Activ Numbe	state vation Id er of messages rea
	Numbe	er of threads er of Oracle conne

Μ

Log offset: 67350144 "INVENTORIES" at 10/04/24 19:45:43 ed: Log offset: 67379416 Source time: 10/04/24 19:45:43 : Waiting : 181 ad released : 0 : 11 ections : 12 Concurrency (Active sessions) : 0 Peak number of sessions : 11 Operations posted : 11526 Transactions posted : 3147 Full rollbacks : 366 Full rollback operations posted : 0 Rollback operations skipped : 2 Transactions <= 2 : 483 Transactions > 10000 : 0 Largest transaction : 17 Insert operations : 5187 Update operations : 6337 Delete operations : 0 Insert batch operations / average : 0 / 0 rows Update batch operations / average : 638 / 2 rows Delete batch operations / average : 0 / 0 rows Other operations : 2 Lob changes : 0 Key cache hit count : 0

: 99 %



Monitor Your Replication: Post

<pre>sp_ctrl (ptysup17:61927)> show post sessions detail queue pst-order</pre>							
Session Number	Session Status	Pending Messages	Operations Done	Number of Transactions	RB Ops Skipped	SID/InstID	Thread ID
2	 Waiting	0	2	883	0	38/1	3
4	Waiting	0	4	866	0	29/1	8
5	Waiting	0	5	885	0	289/1	5
8	Waiting	0	5	880	0	57/1	4
9	Waiting	0	8	212	0	274/1	9
10	Waiting	0	3	69	0	285/1	11
3	Committe	0	0	877	0	284/1	7
6	Committe	0	0	887	0	303/1	2
7	Committe	0	0	866	0	268/1	10
11	Committe	0	0	16	0	58/1	6
12	Committe	0	0	4	0	298/1	0





Monitor Your Replication: Post

sp_ctrl (ptysup17:61927}> show sql queue pst-order Last SQL statement of queue pst-order and instance o.PDB19-o.PDB19 on ptysup17	
Thread Session	
/ Thread is initializing : No SQL available yet.	
Thread Session	
3 2	
/ insert into "SP101"."ORDER_ITEMS" ("ORDER_ID","LINE_ITEM_ID","PRODUCT_ID","UNIT_PRICE","QUANTITY","GIFT_WRAP","CONDITION", "ESTIMATED_DELIVERY") values (:V001,:V002,:V003,:V004,:V005,:V006,:V007,:V008) RETURNING ROWID INTO :RID	
Thread Session	
7 3	
/ insert into "SP101"."ORDER_ITEMS" ("ORDER_ID","LINE_ITEM_ID","PRODUCT_ID","UNIT_PRICE","QUANTITY","GIFT_WRAP","CONDITION", "ESTIMATED_DELIVERY") values (:V001,:V002,:V003,:V004,:V005,:V006,:V007,:V008) RETURNING ROWID INTO :RID	
Thread Session	
 8 4	
/ insert into "SP101"."ORDER_ITEMS" ("ORDER_ID","LINE_ITEM_ID","PRODUCT_ID","UNIT_PRICE","QUANTITY","GIFT_WRAP","CONDITION", "ESTIMATED_DELIVERY") values (:V001,:V002,:V003,:V004,:V005,:V006,:V007,:V008) RETURNING ROWID INTO :RID	
Thread Session	
 5 5	
/ insert into "SP101"."ORDER_ITEMS" ("ORDER_ID","LINE_ITEM_ID","PRODUCT_ID","UNIT_PRICE","QUANTITY","GIFT_WRAP","CONDITION", "ESTIMATED_DELIVERY") values (:V001,:V002,:V003,:V004,:V005,:V006,:V007,:V008) RETURNING ROWID INTO :RID	
Thread Session	
2 6	
/ update "SP101"."ORDERS" t set "ORDER_STATUS"=: V001 where rownum = 1 and "ORDER_ID"=: V002 and "ORDER_STATUS"=: V003	
Thread Session	
, insert into "SP101"."ORDER_ITEMS" ("ORDER_ID","LINE_ITEM_ID","PRODUCT_ID","UNIT_PRICE","QUANTITY","GIFT_WRAP","CONDITION", "ESTIMATED_DELIVERY") values (:V001,:V002,:V003,:V004,:V005,:V006,:V007,:V008) RETURNING ROWID INTO :RID	
Thread Session	
4 8	
/ insert into "SP101"."ORDER_ITEMS" ("ORDER_ID", "LINE_ITEM_ID", "PRODUCT_ID", "UNIT_PRICE", "QUANTITY", "GIFT_WRAP", "CONDITION", "ESTIMATED_DELIVERY") values (:V001,:V002,:V003,:V004,:V005,:V006,:V007,:V008) RETURNING ROWID INTO :RID	<u>'lex</u>
by	Quest

SharePlex Parameters

 Each SharePlex process is highly configurable with the use of parameters.

> You can review the most common parameters with the command *list param.* Using the *modified* option will provide the output for the parameters that are not in their default value

sp_ctrl (ptysup16:61927)> list param modified

Control Process parameters:

Parameter Name		Actual Value	Units	Set At
SP_COP_TPORT Default Value:	2100	61927		Restart Cop
SP_COP_UPORT Default Value:	2100	61927		Restart Cop
Compare/Repair paramete	IS:			
Parameter Name		Actual Value	Units	Set At
SP_DEQ_COPY_CHECK_ROWS Default Value:	200000	2147483640		Live
Oracle Capture paramete	IS:			
Parameter Name		Actual Value	Units	Set At
SP_OCT_OLOG_QUEUE_SIZE Default Value:	16384	32768	# Queue	Restart Process
SP_OCT_OPS_QUEUE_SIZE Default Value:	8192	16384		Restart Process
Support Library paramet	ers:			
Parameter Name		Actual Value	Units	Set At
SP_OSP_DEBUG Default Value:	0x00000	0xfffffff 000	bitflag	Live
System parameters:				
Parameter Name		Actual Value	Units	Set At
SP_SYS_LIC_32634 SP_SYS_LIC_44862 SP_SYS_NETWORK_SECURITY DefaultValue:		E1BMVCRA6JXH267AQVM6HA4WKKKDM2TKWM:Q DGTQXR0MXFYAPT643B0ZQNMG4S3TYY4UJ1:Q OLD		Install Install Restart Cop
SP_SYS_SPM_UNIX_TIME Default Value:	0	1	boolean	Restart Process
sp ctrl (ptysup16:61927	1 >			



SharePlex Parameters

To modify a parameter, you will use the set param <parameter> <value> command.

set param SP_OPO_COMMIT_REDUCE_MSGS queue pst-common 10000

- On Post parameters, you can specify the Post queue name so it only applies to that particular Post queue.
- Some parameters can be modified live, while others will require to restart the process or SharePlex to take effect. The output of the list param command shows which





SharePlex Parameters

This are the most common modified parameters for performance. It is highly
recommended to review the reference guide for more information or to open a support
case for advice on how to implement them

Capture

- SP_OCT_ASM_MULTI_OCI
- SP_OCT_CHECKPOINT_FREQ
- SP_OCT_OLOG_QUEUE_SIZE
- SP_OCT_OPS_QUEUE_SIZE

Post

- SP_OPO_DEPENDENCY_CHECK
- SP_OPO_COMMIT_REDUCE_MSGS
- SP_OPX_COMMIT_REDUCE_MSGS

Queue

- SP_QUE_POST_SHMSIZE
- SP_QUE_Q_SHMSIZE





Thank You

For North America



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SharePlex Skills 101: Episode 4

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