AUTOMATED COVERAGE TESTER FOR THE ORACLE ARCHIVER OF WINCC OA



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Introduction

Archiving is a critical component

- Online control system debugging.
 Conditions data for off-line physics
- analysis.
- Post-mortem investigation of failures.

Challenges

- Cope with different versions of components (e.g. Oracle,
- OS, Win CC OA).
- Cover systematically all supported data types.
 Test of all query features of WinCC OA (e.g. API, trend, alarm history).Check alarm life-cycle.
- Deal with a large number of archiver parameters.

Approach

- Generic and adaptive tester.
 Generation based on templates.
- Parallel execution.
- Global reporting.



Test generation

- Over 300 scripts produced from 8 templates.

- On the fly generation.
 Fast integration of new test cases.
 Full coverage of relevant test cases.



- Test triggering (single and all).
- Execution monitoring.
- Reporting.

Test suite progression

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list_191:RDB_ValueTest	Reset tests Ex	ecute all tests	dist_191:RDB_ValueTest.pool Kill all Clean pool	
Load test list Add a test Export	test list Clear the list	HTML report		
est name	dpQuery *GetPe	riod	Man. num Script path Status	
/pe=char ; Test=min-Offline	.ctl Run	.ctl Run	15 Kill Kill	
/pe=char ; Test=max-Offline	.ctl Run	.ctl Run	16 Kill Kill Kill	
/pe=uint ; Test=min-Offline	.ctl Run	.ctl Run		
/pe=uint ; Test=max-Offline	.ctl Run	.ctl Run _		
ype=int ; Test=min-Offline	.ctl Run	.ctl Run		
/pe=int ; Test=max-Offline	.ctl Run	.ctl Run		ript pooler
/pe=float ; Test=min-Offline	.ctl Run	.ctl Run		ipe poolei
ype=float ; Test=max-Offline	.ctl Run	.ctl Run	Script queue	nitoring
ype=bool ; Test=min-Offline	.ctl Run	.ctl Run		muunny
ype=bool ; Test=max-Offline	.ctl Run	.ctl Run		_
ype=bit32 ; Test=min-Offline	.ctl Run	.ctl Run		
ype=bit32 ; Test=max-Offline	.ctl Run	.ctl Run		
ype=string ; Test=empty-Offline	.ctl Run	.ctl Run		
/pe=string ; Test=equal-Offline	.ctl Run	.ctl Run		
/pe=time ; Test=min-Offline	.ctl Run	.ctl Run		
/pe=time ; Test=zero-Offline	.ctl Run	.ctl Run		
/pe=time ; Test=max-Offline	.ctl Run	.ctl Run	RDB Status	
ype=char ; Test=min-Online	.ctl Run	.ctl Run		
/pe=char ; Test=max-Online	.ctl Run	.ctl Run	Connection status: Connected Flush buffer	
ype=uint ; Test=min-Online	.ctl Run	.ctl Run	DB Host: COPVSS10	
/pe=uint ; Test=max-Online	.ctl Run	.ctl Run 🔻	DB User: SAVRDBAPI_85 Stop write to DB	
Test details			Last DP writen: dist_191:RDBTesterDP_dyn_string_3707.	
Name: Type=int ; Test=max-Offline			At time: 2010.10.21 12:12:24.563	
Variables:			Value:	
TYPE = "int"				
CONFIG_ATTRIBUTE = "".:_offlinevalue""			Current blocks: 0 Buffer to disk: Inactive	
TESTED_VALUE = "maxINT()"			Max blocks: 10 Max entries: 500	
			Flush interval: 3000 DB write delay: 2000	
-				
dpQuery result: Passed Flush time: 2.962		-	Retention period: 3600	

Results

An issue in flushing mechanism.

- Scalar: 7 issues detected, reported and fixed.
- Array: 9 issues detected.
- Status bits and alarms: No issue.

Conclusion

- 2009 run made smoother. Built-up our confidence in the archiver.
- This automatic coverage tester deemed to be the right approach for the problem.
 Components of this tester are reusable for
- other testing purpose.

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