

<embed/it>

PERFORMANCE TEST

EmbedIT
6th November 2014
Petr Strítecký, Michal Godar

Definition

- < Performance test determines how a system performs in terms of responsiveness and stability under a particular workload
- < It can also serve to investigate, measure, validate or verify other quality attributes of the system, such as scalability, reliability and resource usage

http://en.wikipedia.org/wiki/Software_performance_testing

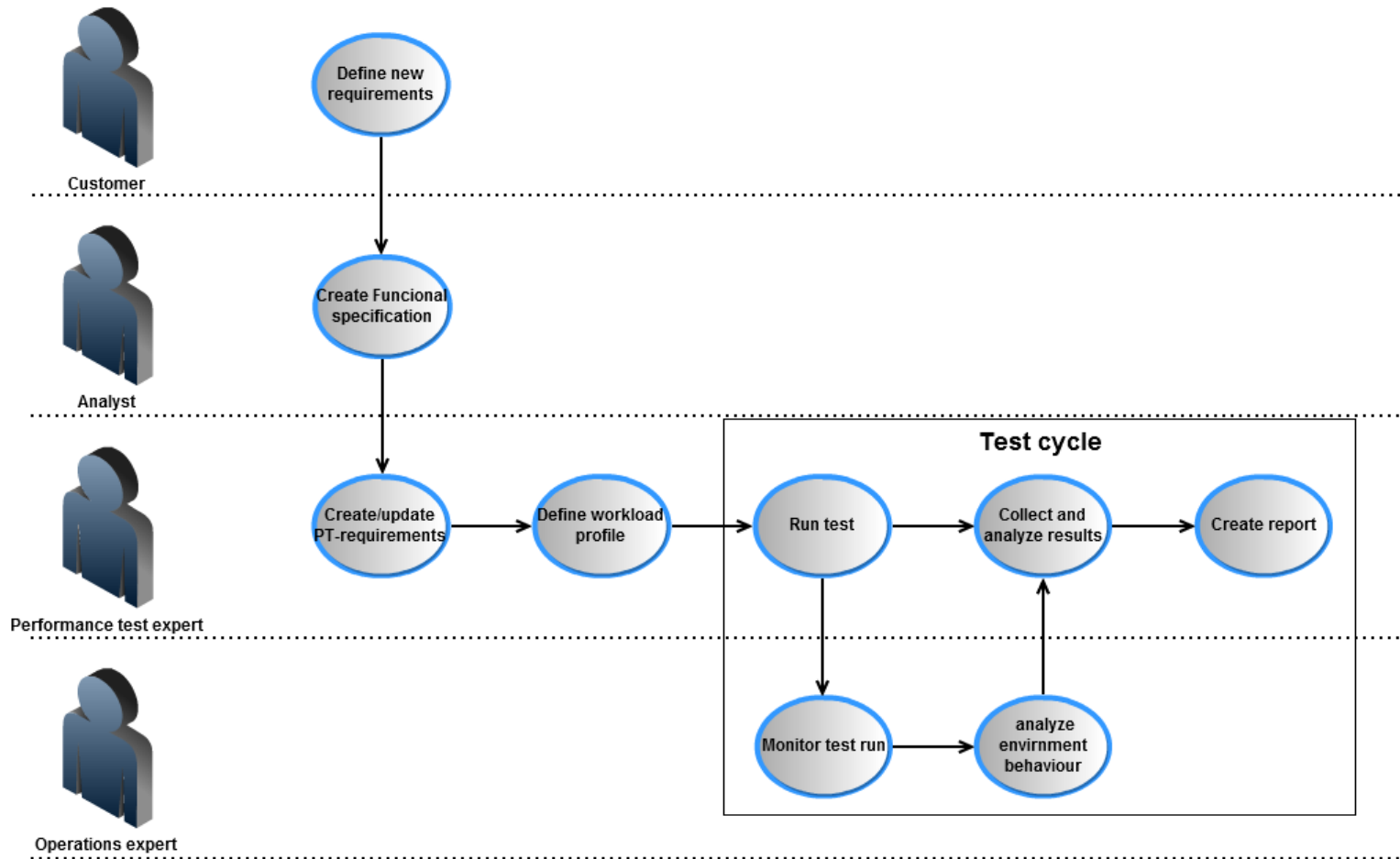


WIKIPEDIA
The Free Encyclopedia

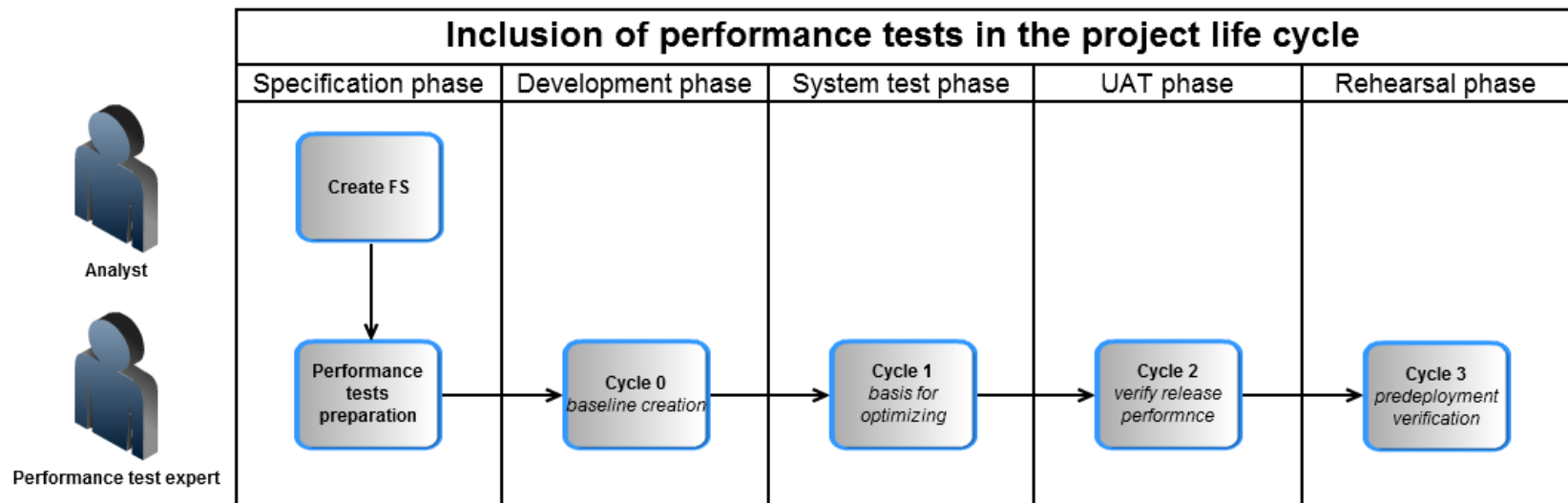
Motivation

- < Prove that the system in a new version is stable under the real workload
- < Prevent future performance issues
- < Perform tests which can't be executed manually
- < Help to increase system overall stability
- < Set the limits and find the bottlenecks of the application
- < Ensure that application will be ready for business attractive terms

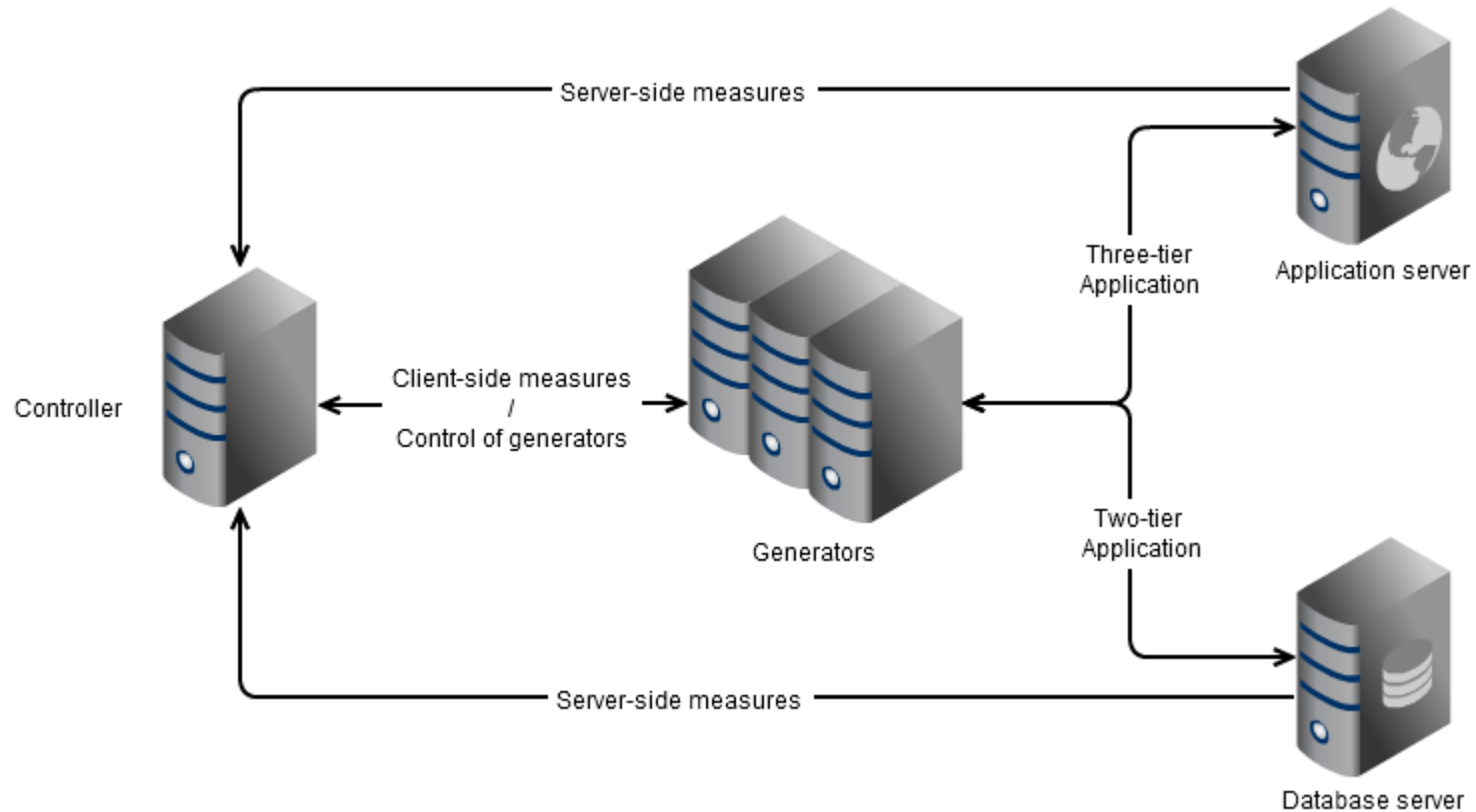
Processes architecture and technologies



Processes architecture and technologies



Processes **architecture** and technologies



Processes **architecture** and technologies

< **Performance test prerequisites**

- < non-functional requirements
- < functional specification

< **Test data preparation**

- < static data
- < random generated data
- < load required data from database

< **Issue reporting**

- < test run evaluation
- < issues are created in tracking system

Processes architecture and technologies

< Silk Performer

< Overall management of the performance test

Application recording

Code adjustments

Workload and agents configuration

Test run and monitoring

Results analysis

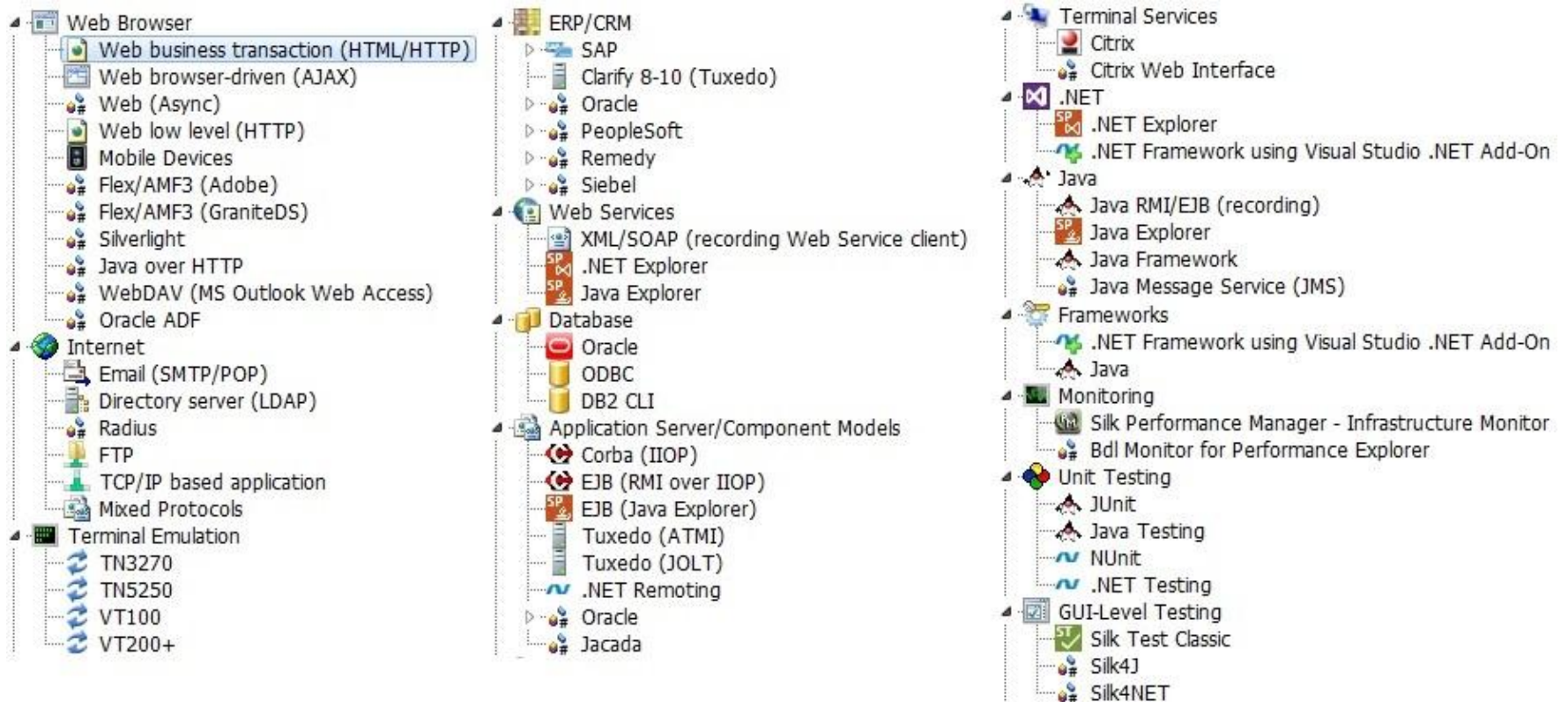
< Structural programming language

< Wide protocol support

< Front-end diagnostics from the end user perspective - TrueLog

Processes architecture and technologies

< Other supported protocols



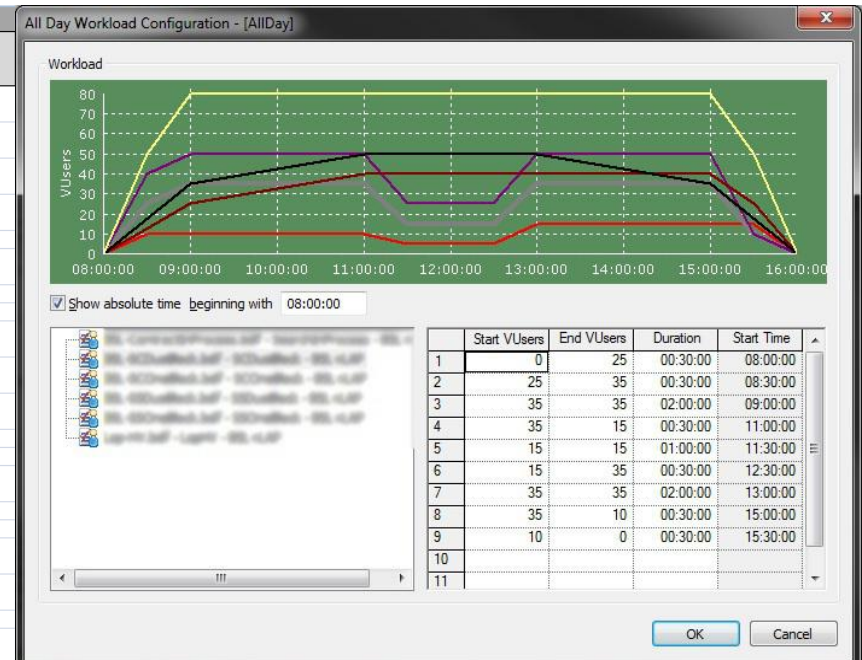
Baseline test Requirements

< Expected scenarios

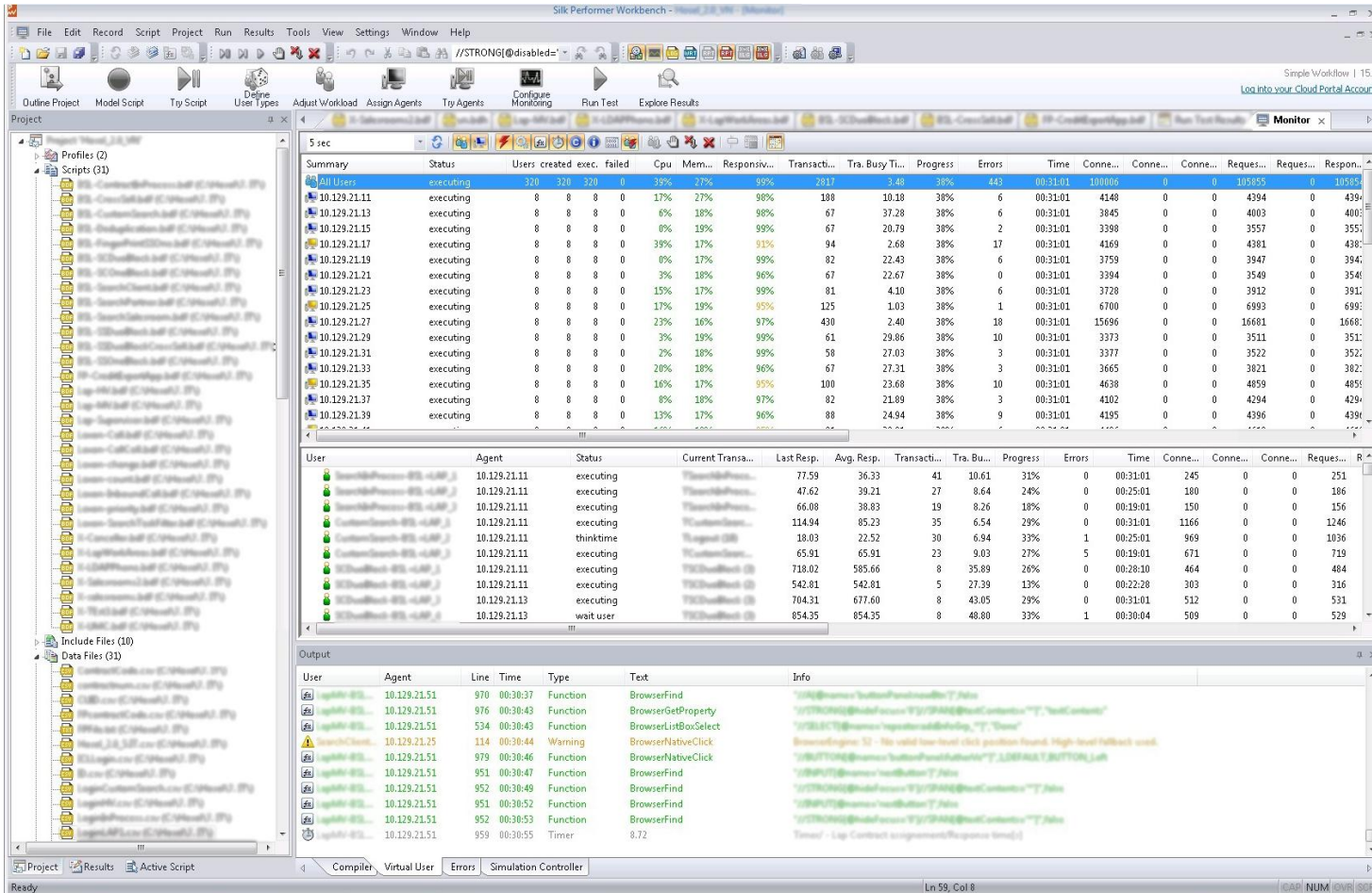
< Workload

< Non-functional requirements

Business transactions					
Business transaction	Number of transactions [in one hour]	Time - 90 percentil [s]	Note	Source of information	Updated by
System1 : Script1	2800	3	Time needed to perform action	Function specification	John Doe
System1 : Script2	1600	3	Time needed to generating report	Function specification	Jane Doe
System1 : Script3	100	2	Time needed for aquire set of information	Analyst	John Doe
System1 : Script4	100	5	Time needed to display screen with fully loaded data	Developer	Jane Doe
System1 : Script5	100	8	Time needed to perform action	Analyst	John Doe
System1 : Script6	100	8	Time needed to evaluate a statemant	Function specification	Jane Doe
System1 : Script7	700	8	Time needed to generating report	Developer	John Doe
System1 : Script8	200	8	Time needed to perform action	Analyst	Jane Doe
System2 : Script1	160	8	Time needed for aquire set of information	Function specification	John Doe
System2 : Script2	560	8	Time needed to display screen with fully loaded data	Developer	Jane Doe
System2 : Script3	420	3	Time needed to evaluate a statemant	Function specification	John Doe
System2 : Script4	250	3	Time needed to perform action	Analyst	Jane Doe
System2 : Script5	590	3	Time needed to generating report	Developer	John Doe
System2 : Script6	1500	3	Time needed for aquire set of information	Function specification	Jane Doe
System3 : Script1	250	5	Time needed to generating report	Analyst	John Doe
System3 : Script2	350	5	Time needed to perform action	Analyst	John Doe
System3 : Script3	400	3	Time needed to generating report	Function specification	John Doe
System3 : Script4	120	7	Time needed to display screen with fully loaded data	Developer	John Doe
System3 : Script5	740	1	Time needed to generating report	Analyst	John Doe
System3 : Script6	100	2	Time needed for aquire set of information	Function specification	John Doe



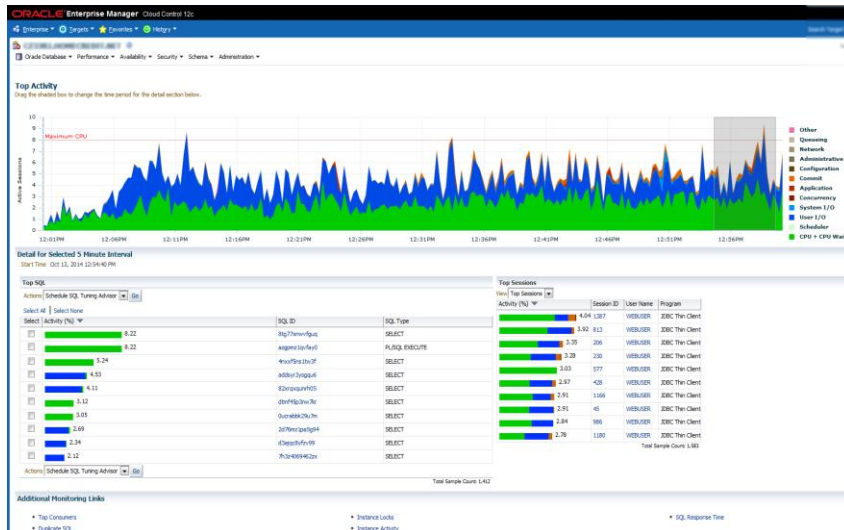
Baseline test Run



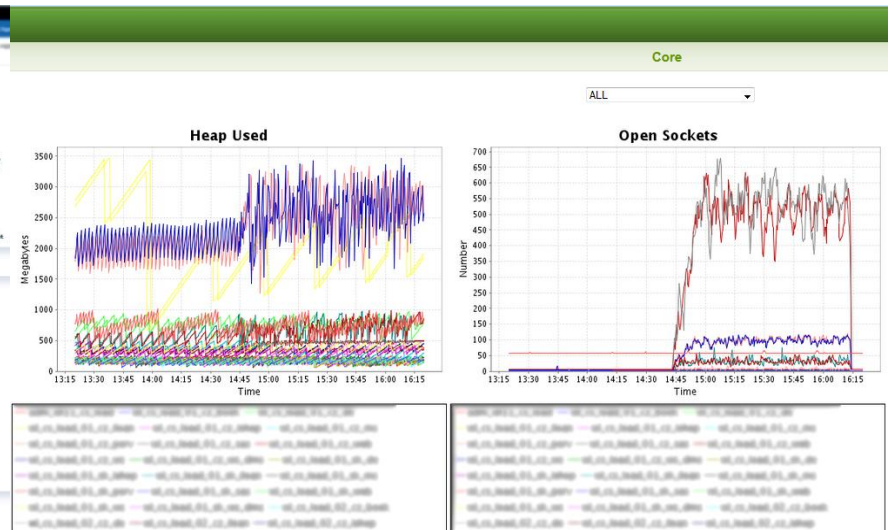
Baseline test HW Monitoring

< Database

< Application server



< Oracle Enterprise Manager
< AWR Report
< ASH Report
< Nagios

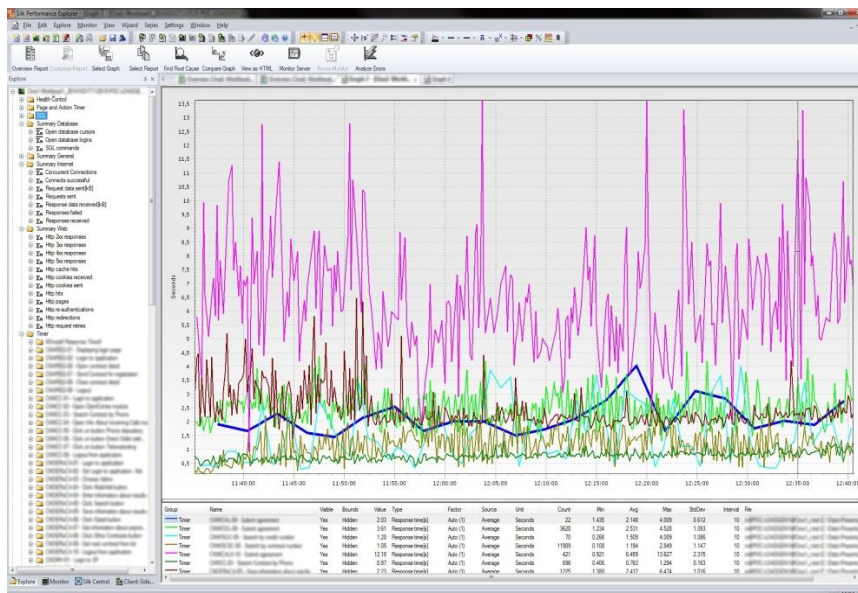


< WebLogic DomainHealth
< Application logs
< Oracle JRockit
< Nagios

Baseline test Results

< Analyze client site data

< Report



Script1.bdf											
Name	Minimum (s)	Average (s)	Maximum (s)	Std. Deviation (s)	Count (-)	Percentile 90 (s)	Percentile 95 (s)	SLA bound 1 (s)	under SLA1 (%)	SLA bound 2 (s)	under SLA2 (%)
Script1 - Transaction1	0,61	1,20	2,25	0,41	40,00	1,78	2,06	3,00	100,00	4,00	100,00
Script1 - Transaction2	0,31	0,59	3,31	0,42	80,00	0,95	1,11	3,00	98,75	4,00	100,00
Script1 - Transaction3	0,58	0,97	1,81	0,35	40,00	1,47	1,67	3,00	100,00	4,00	100,00
Script1 - Transaction4	1,06	1,68	3,99	0,61	41,00	2,59	2,65	4,00	100,00	5,00	100,00
Script1 - Transaction5	0,19	0,36	1,31	0,26	41,00	0,65	0,87	3,00	100,00	4,00	100,00
Script1 - Transaction6	0,19	0,41	1,64	0,25	41,00	0,64	0,73	3,00	100,00	4,00	100,00
Script1 - Transaction7	0,53	0,64	2,08	0,26	40,00	0,72	1,08	3,00	100,00	4,00	100,00
Script1 - Transaction8	0,48	0,70	2,09	0,25	40,00	0,95	1,14	3,00	100,00	4,00	100,00
Script1 - Transaction9	1,00	1,54	3,28	0,51	40,00	2,17	2,34	3,00	97,50	4,00	100,00
Script2.bdf											
Name	Minimum (s)	Average (s)	Maximum (s)	Std. Deviation (s)	Count (-)	Percentile 90 (s)	Percentile 95 (s)	SLA bound 1 (s)	under SLA1 (%)	SLA bound 2 (s)	under SLA2 (%)
Script1 - Transaction1	0,52	0,69	4,29	0,20	623,00	0,86	1,03	3,00	99,84	4,00	99,84
Script1 - Transaction2	0,37	0,67	1,92	0,23	621,00	0,97	1,14	3,00	100,00	4,00	100,00
Script3.bdf											
Name	Minimum (s)	Average (s)	Maximum (s)	Std. Deviation (s)	Count (-)	Percentile 90 (s)	Percentile 95 (s)	SLA bound 1 (s)	under SLA1 (%)	SLA bound 2 (s)	under SLA2 (%)
Script1 - Transaction1	0,53	1,13	4,87	0,45	247,00	1,64	2,15	3,00	99,60	4,00	99,60
Script1 - Transaction2	0,53	1,24	7,32	0,54	533,00	1,64	2,12	3,00	97,94	4,00	99,81
Script1 - Transaction3	0,00	0,63	1,98	0,33	128,00	1,11	1,56	3,00	100,00	4,00	100,00
Script1 - Transaction4	0,00	1,90	5,27	0,57	124,00	2,54	2,86	3,00	95,97	4,00	98,39
Script1 - Transaction5	6,79	7,63	10,53	0,64	117,00	8,51	9,01	8,00	80,34	12,00	100,00
Script1 - Transaction6	0,34	0,60	2,26	0,32	331,00	1,01	1,34	3,00	100,00	4,00	100,00
Script1 - Transaction7	0,00	1,49	3,49	0,49	128,00	2,11	2,90	4,00	100,00	5,00	100,00
Script1 - Transaction8	0,00	0,33	1,28	0,19	128,00	0,59	0,78	3,00	100,00	4,00	100,00
Script1 - Transaction9	0,19	0,72	10,45	1,04	129,00	1,15	1,40	3,00	98,45	4,00	98,45
Script1 - Transaction10	0,02	0,49	6,62	0,97	247,00	2,11	2,55	3,00	96,36	4,00	99,60
Script1 - Transaction11	0,02	0,05	0,95	0,05	250,00	0,06	0,14	3,00	100,00	4,00	100,00
Script1 - Transaction12	1,05	1,53	8,88	0,67	371,00	2,09	2,20	3,00	98,92	4,00	99,46
Script1 - Transaction13	0,45	0,76	2,36	0,32	228,00	1,19	1,44	3,00	100,00	4,00	100,00
Script1 - Transaction14	1,14	1,63	2,20	0,19	112,00	1,84	2,09	3,00	100,00	4,00	100,00
Script1 - Transaction15	0,28	1,25	10,72	1,05	117,00	1,86	2,39	3,00	97,44	4,00	98,29
Script1 - Transaction16	0,00	0,78	3,65	0,45	125,00	1,18	1,58	3,00	98,40	4,00	100,00
Script1 - Transaction17	0,02	0,03	0,66	0,05	246,00	0,05	0,06	3,00	100,00	4,00	100,00

Other test

< **Stress test**

- < Finding application limits and bottlenecks

< **Module test**

- < Detailed, focused on internal module performance

< **What-if test**

- < Simulate unusual state and check if the system is able to handle it

< **Comparative HW test**

- < Same application is tested on different HW platform

Conclusion

Questions?

