

HP Executive Scorecard

For the Windows[®] operating system

Software Version: 9.50

Performance Benchmark Document



Document Release Date: June 2014

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1 Introduction

Purpose and Scope

This document provides a benchmark that characterizes the performance of Executive Scorecard version 9.50. It provides contextual data regarding the data environment within which a specific functional workload is applied representing the benchmark workload. Test results for a benchmark run within HP Performance Labs are provided for reference purposes.

The following are described in more detail throughout this document:

- DWH performance of Executive Scorecard version 9.50
- UI performance of Executive Scorecard version 9.50

Environment Setup

The following table describes the hardware and software components used for the benchmark:

	Model	Processors	Memory	Storage	Network	Notes
BOE Server	VM	8 cores 2.67Ghz	16G	Local	1 GB	Windows 2008 R2
DWH server	VM	8 cores 2.67Ghz	16G	Local	1 GB	Windows 2008 R2
XS server	VM	8 cores 2.67Ghz	16G	local	1 GB	Windows 2008 R2
Database	ProLiant DL580	24 Cores 2.93Ghz	64G	local	1 GB	Windows 2008 R2L,

Tools

The following tools were used to produce this benchmark:

- perfmon
- Jconsole
- HP LoadRunner 11.52
- HP Site Scope 11.20

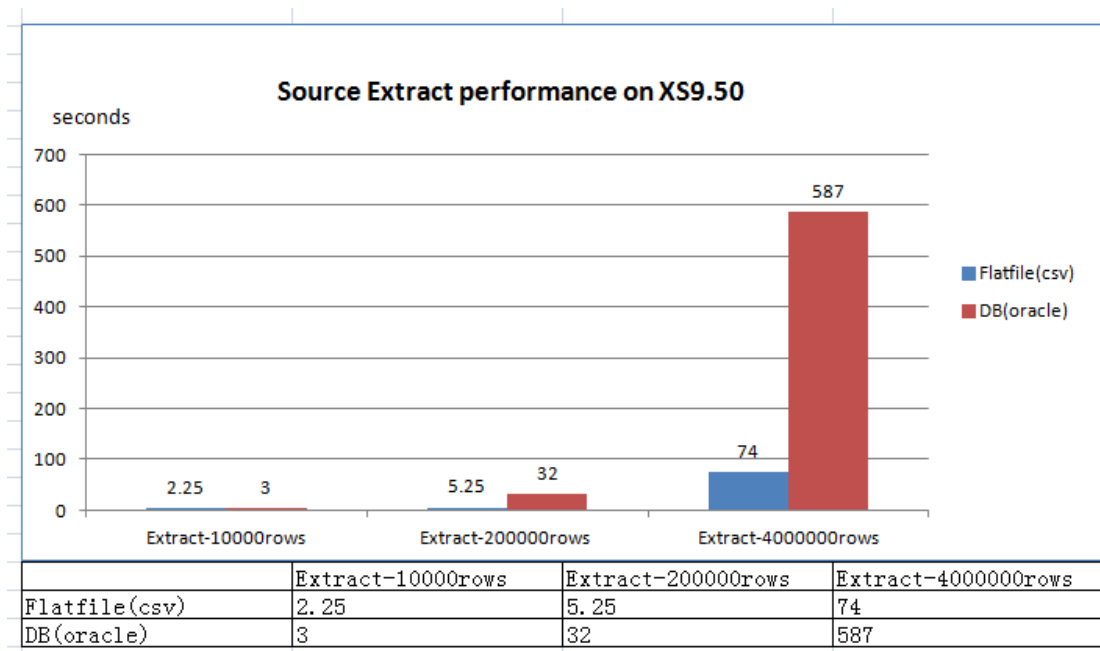
2 Scenario

DWH - extraction

XS extracts data from all kinds of data sources including Flatfile (xls, csv, ssv, psv), DB (Oracle, SQLSERVER, Mysql, Postgress) and particularly APIs.

Extraction source data from Flatfile and DB

In this scenario, we test the performance of extracting data from csv, Oracle and ALM APIs. The following graph shows the result of extraction from csv and Oracle.



Extraction source data from APIs

The extraction performance from APIs varies widely for different sources.

The following table describes the records extracted with ALM API in **5030** seconds.

EntityName	#records
ALM_CYCLE_EXT	253
ALM_DEFECT_EXT	19210
ALM_DEFECT_PLHD_EXT	19207
ALM_DEFECTHIST_EXT	98111
ALM_RELEASE_EXT	69
ALM_REQUIREMENT_EXT	16610

EntityName	#records
ALM_REQUIREMENT_PLHD_EXT	16408
ALM_REQUIREMENT_TYPE_EXT	32
ALM_REQUIREMENTHIST_EXT	42074
ALM_TEST_EXT	7050
ALM_TEST_PLHD_EXT	7053
ALM_TESTHIST_EXT	33382
ALM_TESTINSTANCE_EXT	5562
ALM_TESTINSTANCEHIST_EXT	64

DWH - ETL initial Load

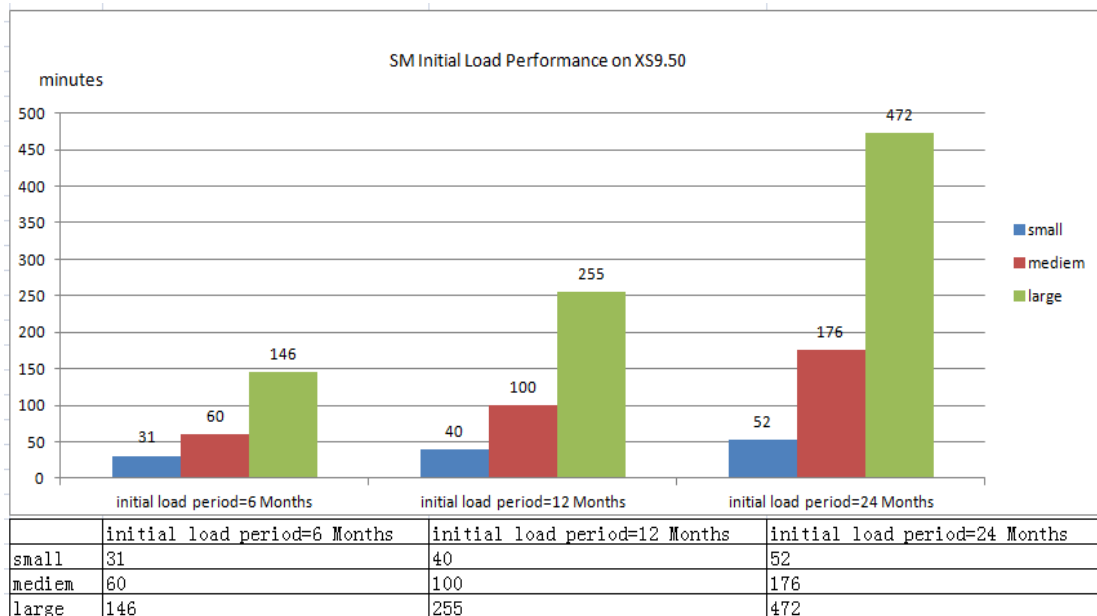
In this scenario, we ran ETL initial load against the SM source with SMALL, MEDIUM and LARGE data volumes.

The detailed data volume of the three SM data sources are listed below:

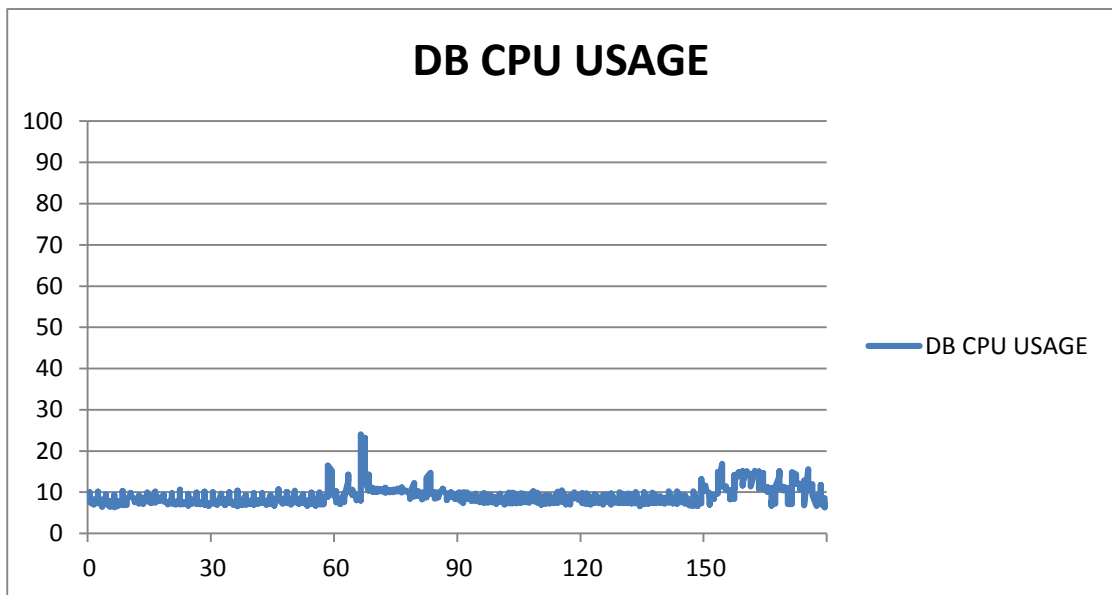
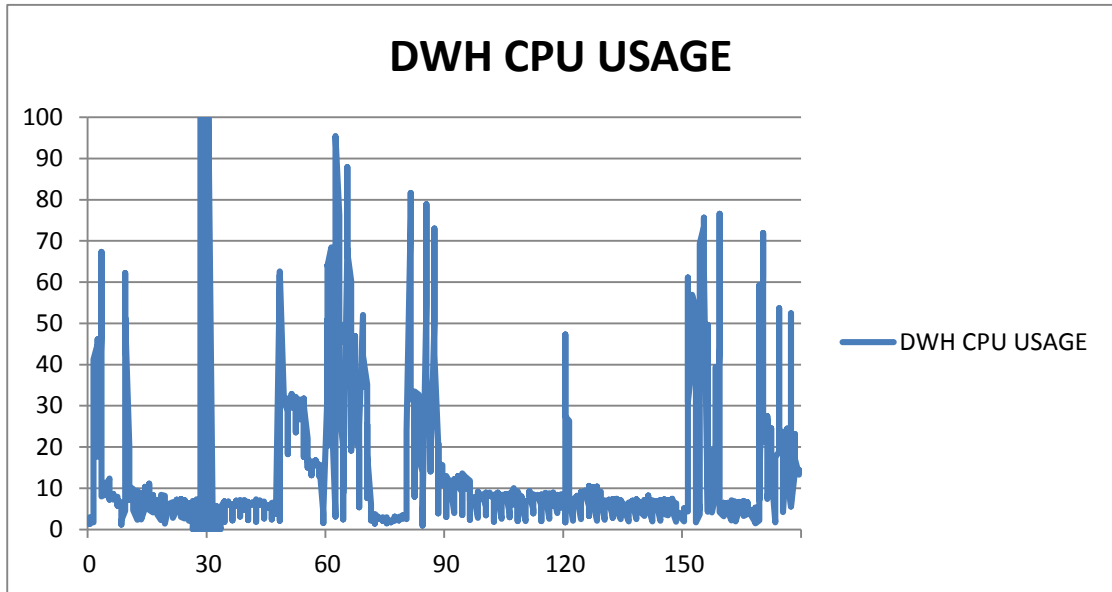
Table Name	Small	Medium	Large
ASSIGNMENTM1	3104	945	4565
BIZSERVICEM1	2114	55	274
CM3RM1	5169	23624	94044
COMPANYM1	660	3	3
CONTACTSM1	39221	313271	218377
DEPTM1	386	24278	27438
DEVICE2M1	200913	52235	264738
INCIDENTSM1	28763	1123722	3455012
LOCATIONM1	5137	7495	35316
MODELM1	5109	627	360
OPERATORM1	15460	21155	239245
PROBSUMMARYM1	29387	1154593	3325490
SLAM1	44	0	212

Table Name	Small	Medium	Large
SLAMONTHLYM1	0	0	0
SLARESPONSEM1	0	0	44894
SLOAVAIL1M1	0	0	0
SLOM1	822	0	2123
VENDORM1	110	432	456

The following graph shows the SM initial load duration with different initial load periods for the three types of data volume:



The graphs below show CPU usage of DWH server and the DB server for initial Load of SM data source with Medium size and initial load period is 24 months:



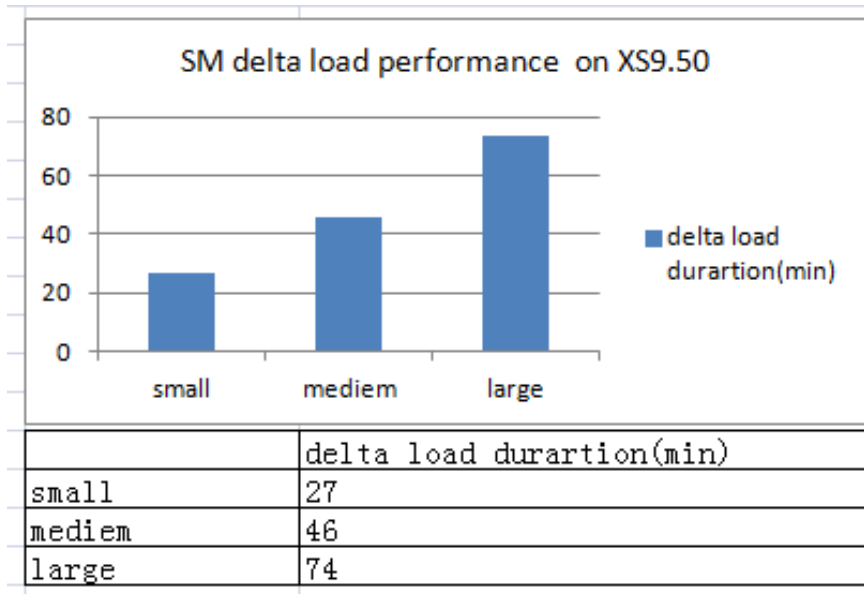
DWH - ETL Delta Load

In this scenario, we ran the ETL initial load against an SM source with SMALL, MEDIUM and LARGE data volume.

The detailed source data info for the delta load are listed below:

TableName	Small	Medium	Large
ASSIGNMENTM1	84	99	137
BIZSERVICEM1	44	0	50
COMPANYM1	0	0	0
COMPANYM1	165	799	1228
DEPTM1	101	99	312
DEVICE2M1	501	100	1134
INCIDENTSM1	116	9950	20000
MODELM1	0	0	0
PROBSUMMARYM1	300	12280	30000
SLAM1	0	0	0
SLARESPONSEM1	0	0	0
CM3RM1	94	199	335
LOCATIONM1	91	100	549
SMSLAOUTAGE	0	0	0
VENDORM1	0	0	0

The following graph shows the SM ETL delta load performance for the three types of data volume:



UI – View Pages and Explorer

In this scenario, we captured the performance benchmark of Executive Scorecard view pages and Explorer.

The following table provides the detailed transaction in the workflow:

No	Transaction Name	Simulated step
1	TX_OpenNormalPage	Open a page including four components: 1) Scorecard 2) KPI View (including 5 KPIs) 3) Historical View (including 1 KPI) 4) KPI Rolodex (including 6KPIs)
2	TX_OpenMoreEnitiesPage	Open a page including four components: 1) Scorecard 2) KPI View(including 8 KPIs) 3) Historical View (including 3 KPIs) 4) KPI Rolodex (including 15KPIs)
3	TX_OpenMoreCompPage	Open a page including eight components: 1) Scorecard 2) KPI View (including 4 KPIs) 3) Historical View (including 3 KPIs) 4) KPI Rolodex (including 8KPIs) 5) KPI List (including 7 KPIs), 6) Historical Metric View (including 1 metric), 7) Pie Chart View (including two KPIs)

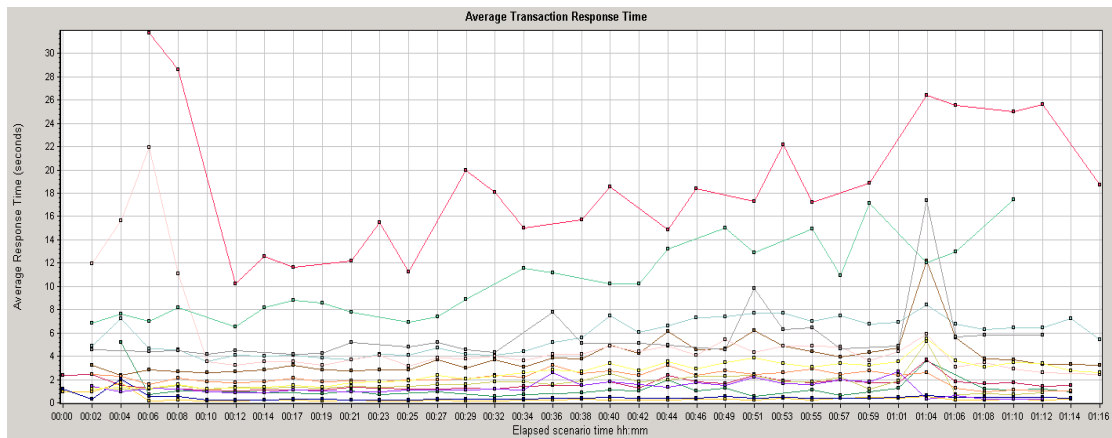
No	Transaction Name	Simulated step
		8) KPI View (including 7 KPIs)
4	TX_OpenReportPage	Open a page including five components: 1) Scorecard 2) KPI View (including 4 KPIs) 3) Historical View (including 2 KPI) 4) KPI Rolodex (including 8KPIs), 5) Web Intelligence report
5	TX_openExplorer	Click the shortcut link of a KPI in a page to open Explorer
6	TX_clickGoalMap	Click the Goal Map button in Explorer
7	TX_clickDataset	Click the Data Set button in Explorer
8	TX_clickPredision	Click the Forecast button in Explorer
9	TX_addAnnotation	Add an annotation while viewing the KPI details in the Dashboard Page
10	TX_refreshPage	Click the Refresh button on the page
11	TX_viewLink	Simulate the user action that views the information while putting the cursor on the shortcut of a KPI or Objective
12	TX_XS_LoginwithNoOpenedPages	Simulate the action that logs on XS with no pages opened by default
13	TX_XS_Loginwith2OpenedPages	Simulate the action that logs on XS with 2 pages opened by default
14	TX_XS_Loginwith4OpenedPages	Simulate the action that logs on XS with 4 pages opened by default

The table below characterizes the designed benchmark scenario.

Total Run Duration	Around 1hours
Ramp Up Duration	415s (3user/15seconds)
Ramp Down Duration	415s(3user/15seconds)
Load Generators	Load Runner controller
Xs user	100

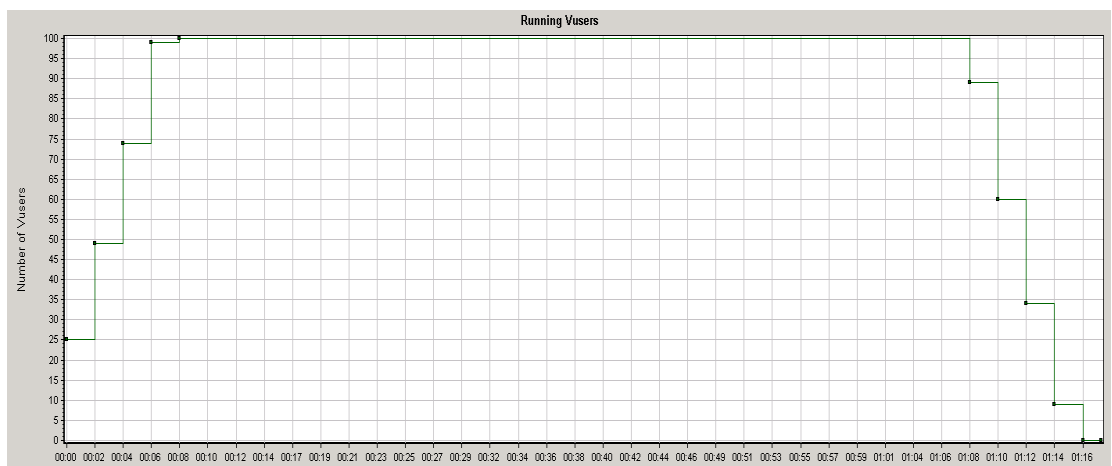
The following section provides results from a benchmark in HP PPM Performance Labs

Average Transaction Response Time



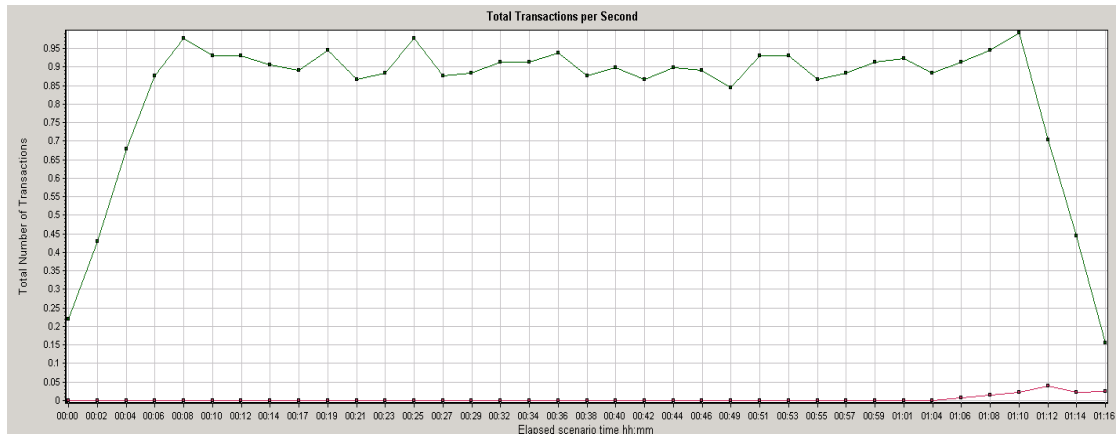
Col	Scale	Measurement	Graph's Mini	Graph's Ave	Graph's Max	Graph's Mec	Graph's Std.
<input checked="" type="checkbox"/>	1	TX_addAnnotation	0.565	1.261	5.168	1.060	0.975
<input checked="" type="checkbox"/>	1	TX_clickDataSet	1.010	1.633	3.708	1.547	0.525
<input checked="" type="checkbox"/>	1	TX_clickGoalMap	0.179	0.364	1.759	0.268	0.293
<input checked="" type="checkbox"/>	1	TX_clickPrediction	0.263	0.474	2.095	0.426	0.315
<input checked="" type="checkbox"/>	1	TX_openExplorer	3.530	5.743	8.419	6.097	1.449
<input checked="" type="checkbox"/>	1	TX_openMoreCompPage	2.413	3.980	12.207	3.712	1.695
<input checked="" type="checkbox"/>	1	TX_openMoreEntitiesPage	0.960	2.149	3.269	2.240	0.585
<input checked="" type="checkbox"/>	1	TX_openNormalPage	0.696	1.675	5.255	1.609	0.778
<input checked="" type="checkbox"/>	1	TX_openReportPage	2.468	5.248	21.920	4.105	3.907
<input checked="" type="checkbox"/>	1	TX_refreshPage	0.332	1.282	2.668	1.180	0.572
<input checked="" type="checkbox"/>	1	TX_viewLink	1.232	2.602	5.530	2.743	0.985
<input checked="" type="checkbox"/>	1	TX_XS_Loginwith2OpenedPages	6.544	10.499	17.454	10.200	3.193
<input checked="" type="checkbox"/>	1	TX_XS_Loginwith4OpenedPages	10.221	18.795	31.736	18.419	5.714
<input checked="" type="checkbox"/>	1	TX_XS_LoginwithNoOpenedPages	4.193	5.742	17.356	4.951	2.629

Total Running Users



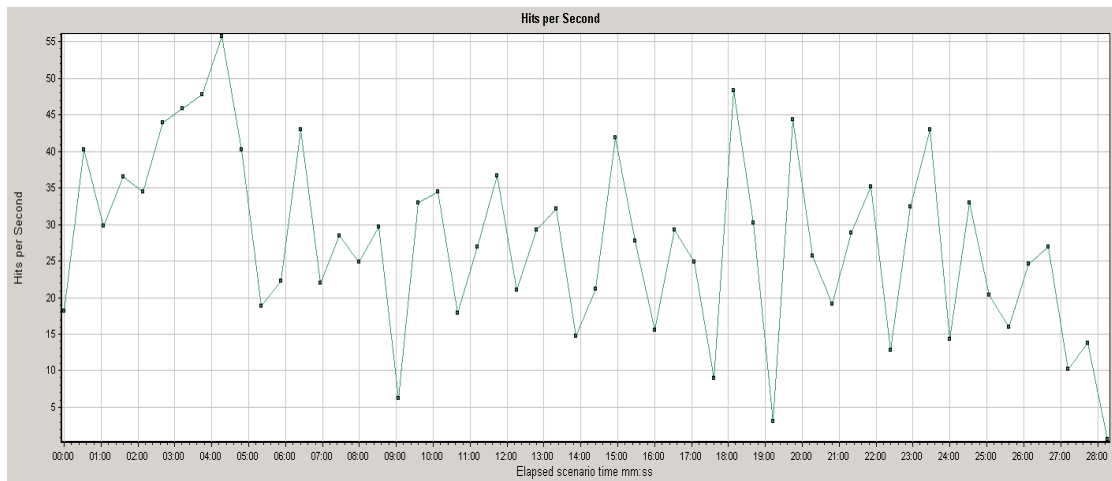
Col	Scale	Measurement	Graph Minimum	Graph Average	Graph Maximum	Graph Median	Graph Std. Deviator
<input checked="" type="checkbox"/>	1	Run	0.000	49.000	100.000	49.000	36.494

Total Transaction per Second



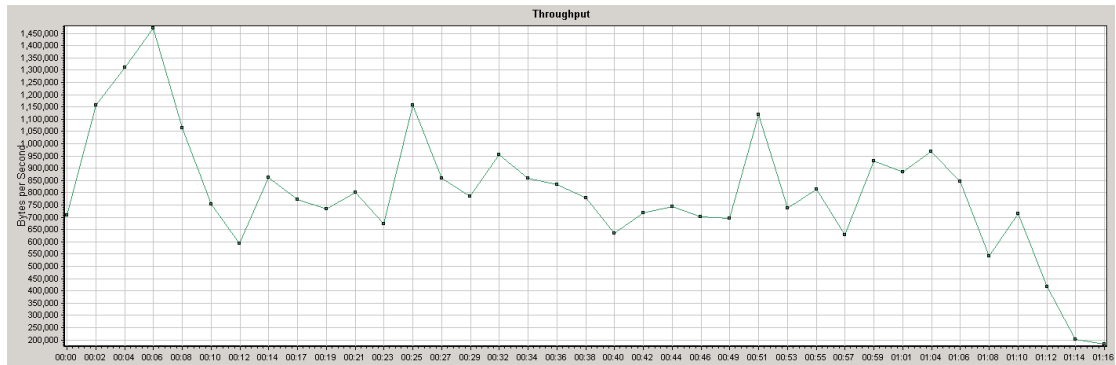
Col	Scn	Measurement	Graph Minimum	Average	Graph Maximum	Graph Median	Graph Std. Deviator
<input checked="" type="checkbox"/>	1	Pass	0.156	0.971	1.969	1.000	0.387

Hits per second



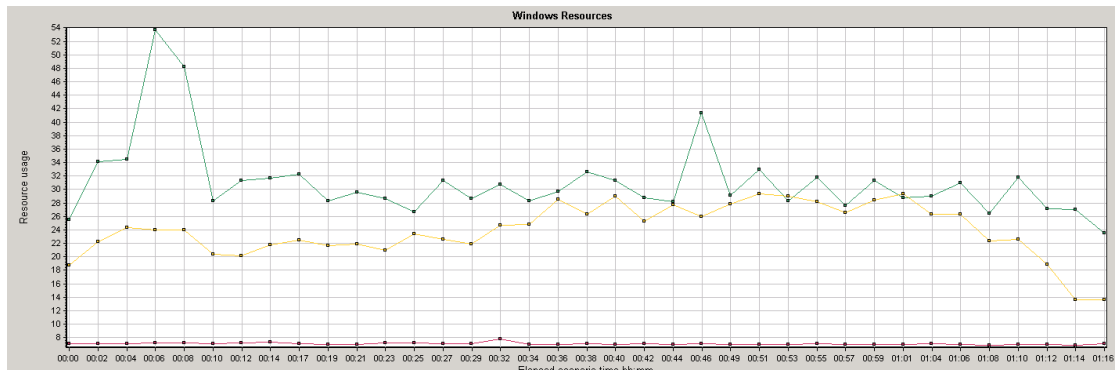
Col	Scn	Measurement	Graph Minimum	Average	Graph Maximum	Graph Median	Graph Std. Deviator
<input checked="" type="checkbox"/>	1	Fail	0.000	0.003	0.039	0.000	0.009
<input checked="" type="checkbox"/>	1	Pass	0.157	0.839	0.992	0.891	0.195

Network throughput



Col	Scale	Measurement	Graph Minimum	Average	Graph Maximum	Graph Median	Graph Std. Deviation
<input checked="" type="checkbox"/>	1	Throughput	182,920.289	805,962.323	1,471,054.164	778,234.234	252,119.252

Servers CPU Usage



Col	Scale	Measurement	Minimum	Average	Maximum	Std. Deviation
<input checked="" type="checkbox"/>	1	% Processor Time (Processor_Total):boe-dis	0.362	31.145	99.867	11.571
<input checked="" type="checkbox"/>	1	% Processor Time (Processor_Total):db	5.507	7.082	12.071	0.870
<input checked="" type="checkbox"/>	1	% Processor Time (Processor_Total):xs-dis	3.724	24.029	67.655	9.143

Application Servers JVM Heap Usage

