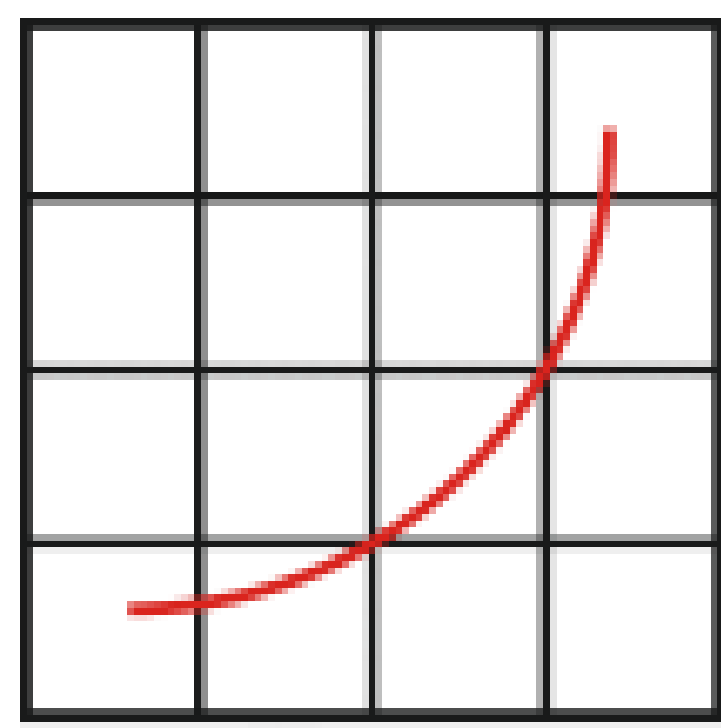


SPECjEnterprise.NEXT

Work in progress

Industry Standard Benchmark
For Java Enterprise Applications



spec®

SPECjEnterprise2010

Home Documentation Benchmark Management Trade Actions Build Actions FAQs

SPECjEnterprise2010 Performance Benchmark Overview

The SPECjEnterprise2010™ benchmark is an end-to-end benchmark which allows performance measurement and characterization of JEE 5.0 servers and supporting infrastructure such as JMS, Database, CPU, disk and servers.

The workload consists of an end-to-end web-based order processing domain, an EJB and Web Services driven manufacturing domain and a supply chain model utilizing document-based Web Services. The application is a collection of Java classes, Java Servlets, Java Server Pages, Enterprise Java Beans, Java Persistence Entities (JPA) and Message Driven Beans.



SPECjEnterprise2010 is the third generation of the SPEC organization's J2EE end-to-end industry standard benchmark application. The new SPECjEnterprise2010 benchmark has been re-designed and developed to cover the JEE 5.0 specification's significantly expanded and simplified programming model, highlighting the major features used by developers in the industry today. This provides a real-world workload driving the Application Server's implementation of the JEE specification to its maximum potential and allowing maximum stressing of the underlying hardware and software systems.

SPECjEnterprise2010's new design spans J2EE including the new EJB 3.0 and WSDL component architecture, Message Driven Beans, and features level transactions.

Additional overview information is included in the [FAQ](#).

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SPECjEnterprise2010

Home Documentation Benchmark Management Trade Actions Build Actions FAQs

Manufacturer Menu

- Home
- Schedule Work Order
- Upload Work Order
- Cancel Work Order
- Cancel Work Order
- Logout

Schedule Work Order

To schedule a work order, please select Assembly ID and enter quantity.

Assembly ID: [00001MTEMD000000001] Location: [] Quantity: [100] [Schedule]

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SPECjEnterprise2010

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Dealership Menu

- Home
- Inventory
- Logout

Dealership Home - Dauria Subaru

User Statistics

Account ID: 1
Account Creation: October 27, 2009
Session Creation: Tue Dec 29 15:58:11 CET 2009

Account Summary

Cash Balance: \$6,726.00
Vehicles in Inventory: 24
Inventory Value: \$402,425.64
Account Value (Vehicles + Cash): \$409,151.84
Credit Limit: \$21,166,347.26
Credit Rating: GC

User Navigation Summary

Login Date	Value
June 12, 1020	\$1,009.13
Sale Value	\$2,004.4
Orders Placed	12
Orders Cancelled	32
Inventory Sold	94
Pages Visited	35

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SPECjEnterprise2010

Run Info Summary Results Detailed Results Run Configuration Run Log Statistics

RunID: specdriverharness.6G

DETAILS

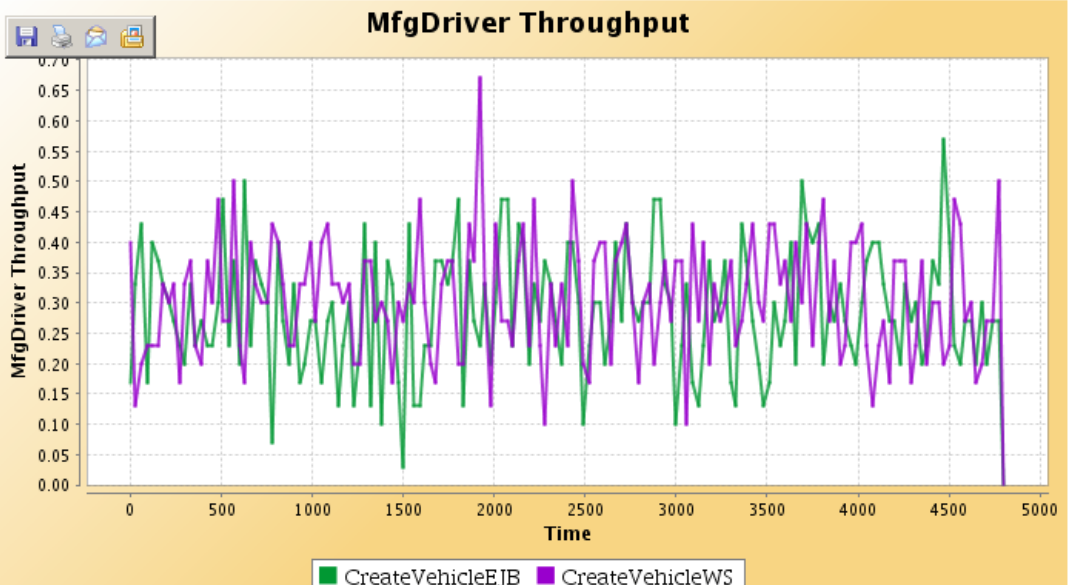
CONTENTS

- Benchmark Information
- MfgDriver Throughput
- MfgDriver Response Time (seconds)
- MfgDriver Frequency Distribution of Response Time (seconds)
- MfgDriver Frequency Distribution of Cycle/Think Time (seconds)
- MfgDriver Frequency Distribution of Targeted Cycle/Think Time (seconds)
- DealerDriver Throughput
- DealerDriver Response Time (seconds)
- DealerDriver Frequency Distribution of Response Time (seconds)
- DealerDriver Frequency Distribution of Cycle/Think Time (seconds)
- DealerDriver Frequency Distribution of Targeted Cycle/Think Time (seconds)


BENCHMARK INFORMATION

Name	Value
RunID	specdriverharness.6G
Previous	Next Top Query

MFGDRIVER THROUGHPUT



Previous | Next | Top | Query



SPECjEnterprise®2010 Result

Copyright © 2009 Standard Performance Evaluation Corporation

WebSphere Application Server V7 on IBM BladeCenter and DB2 9.7 on IBM System x3850		7,903.16 SPECjEnterprise2010 EJOPS	
Submitter: IBM Corporation		SPEC license # 11	
Test date: Dec-2009			
Software Products WebSphere Application Server V7.0 (Level 7.0.0.5) IBM J9 VM build 2.4 J2RE 1.6.0 IBM J9 2.4 J1 run.mn64-64 IBM DB2 Universal JDBC Drivers DB2 9.7 F22		Software Configurations JEE Application Server Database Software Config Database Software Config Drivers Config	
		Hardware Systems JEE Application Server HW Load Driver HW Emulation HW System Configuration Diagram Full Disclosure Archive	
Benchmark Modifications Configuration Bill of Materials Other Info General Notes			
SUT Configuration			
JEE Server Nodes:	8	DB Server Nodes:	1
JEE Server CPUs:	64 cores, 16 chips	DB Server CPUs:	24 cores, 4 chips
JEE Instances:	16	DB Instances:	1
Other SUT Components: (4) 3com 4200G 48-port switch			
Benchmark Settings			
Dealer Injection Rate:	4,968	Ramp Up Time:	1,800 seconds
DB Load Injection Rate:	5,000	Steady State Time:	3,600 seconds
# of Dealer Agents:	49,680	Ramp Down Time:	360 seconds
# of Manufacturing Agents:	14,904		
Detailed Results			
Dealer Transaction Mix	Count	Tx. Mix	Failure Count
Purchase	4,488,817	25.00%	4
Manage	4,489,177	25.00%	9
Browse	8,975,211	49.99%	0
Total # Dealer Transactions	17,953,205		
Manufacturing Transaction Mix	Count	Tx. Mix	Failure Count
CreateVehicleJB	5,247,470	49.98%	1,765
CreateVehicleWS	5,250,698	50.02%	1,741
Total # Manufacturing Transactions	10,498,168		
Response Times	Average	Standard Deviation	Maximum
Purchase	0.400	0.00	8.158
Manage	0.273	4.79	11.311
Browse	0.244	23.26	5.577
CreateVehicleJB	0.244	2.29	5.578
CreateVehicleWS	0.182	0.00	5.621
			0.350
Reproducibility Run (SPECjEnterprise2010 EJOPS)		7,903.84	

Workload Scenario

- Modeled after end-to-end real world business case
- Automobile manufacturer whose main customers are automobile dealers
- Incorporating CRM, manufacturing and supply chain management
- New Insurance module consisting of brokers and providers

Metric

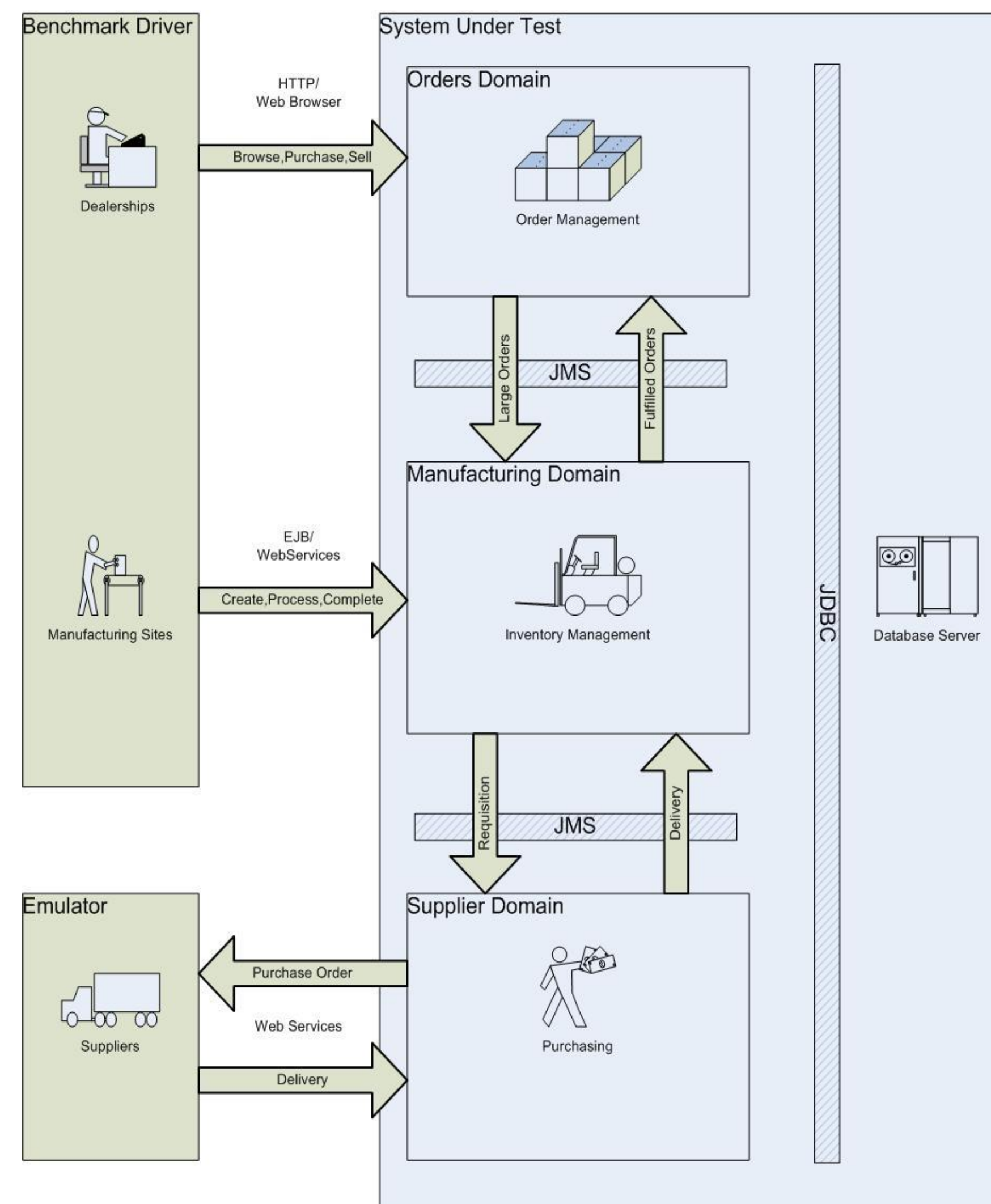
EJOPs : JEnterprise Operations Per Second

= \sum successfully completed workflows

- Dealer Domain Business Transactions: Browse, Purchase, Manage
- Manufacturing Domain Business Transactions: 50% EJB, 50% web services
- Insurance Transactions completed
- during measurement interval
- average normalized per second

SPECjEnterprise.NEXT =

- Full SPECjEnterprise2010 functionality implemented as micro services
- + Java EE 7 + Security +New Insurance module



New Features

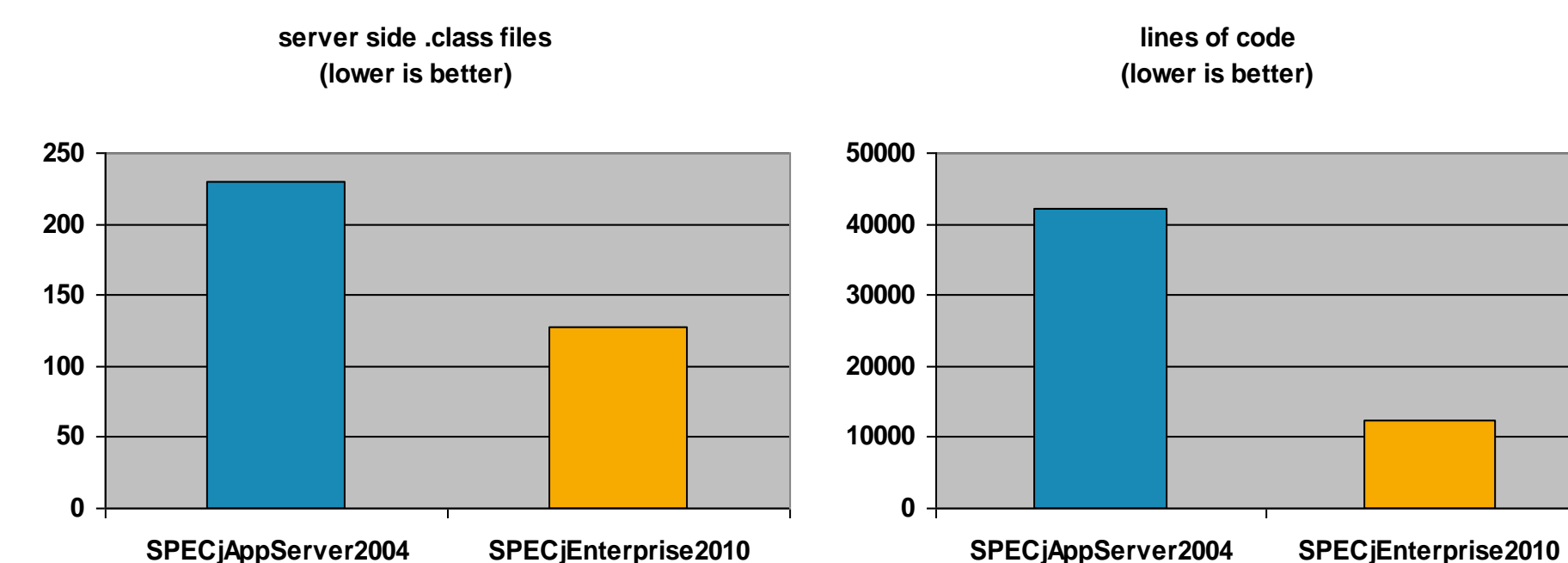
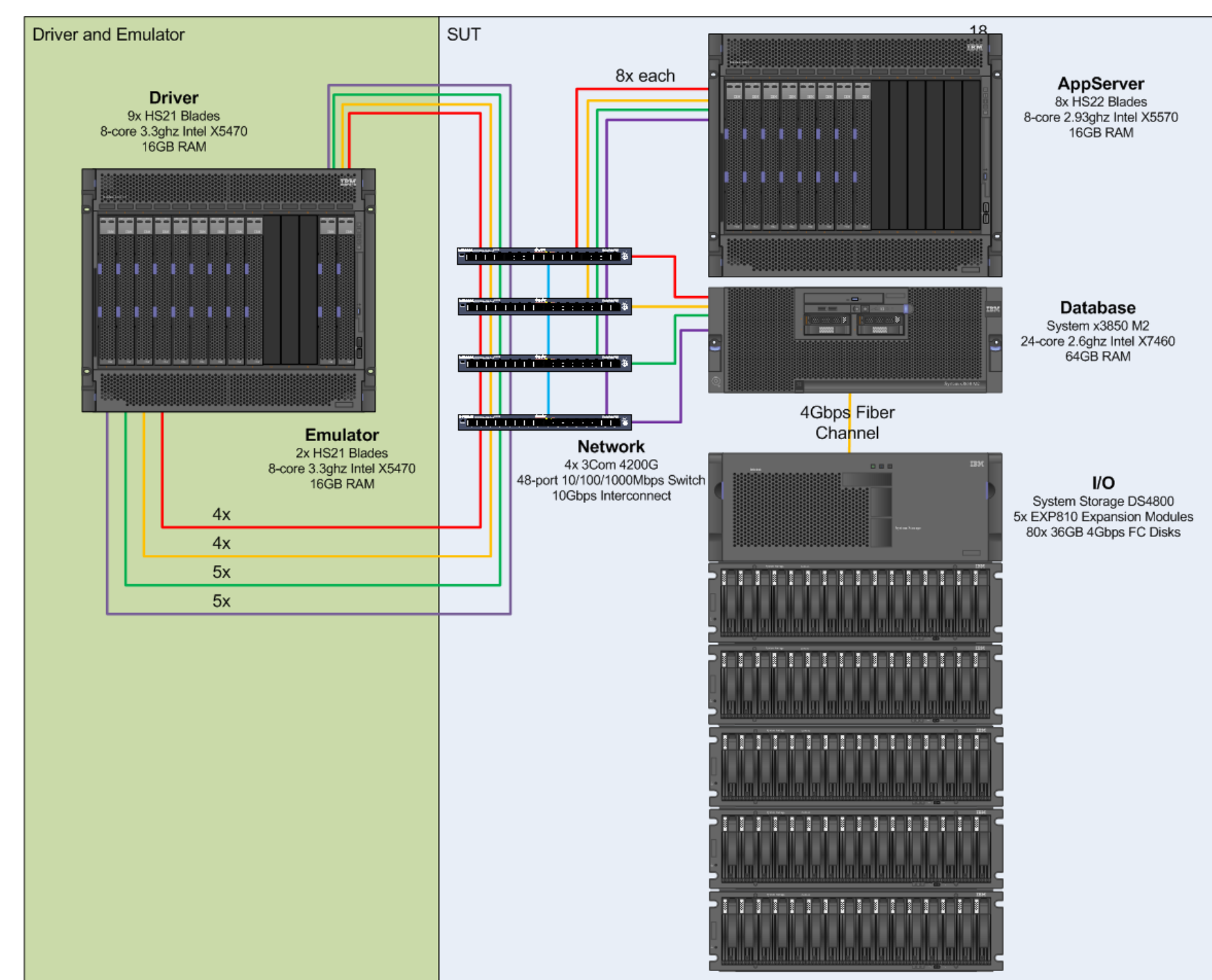


- Java EE 7 Technologies
- HTML 5
- REST Services
- Micro Services
- Insurance module with Web Profile technologies

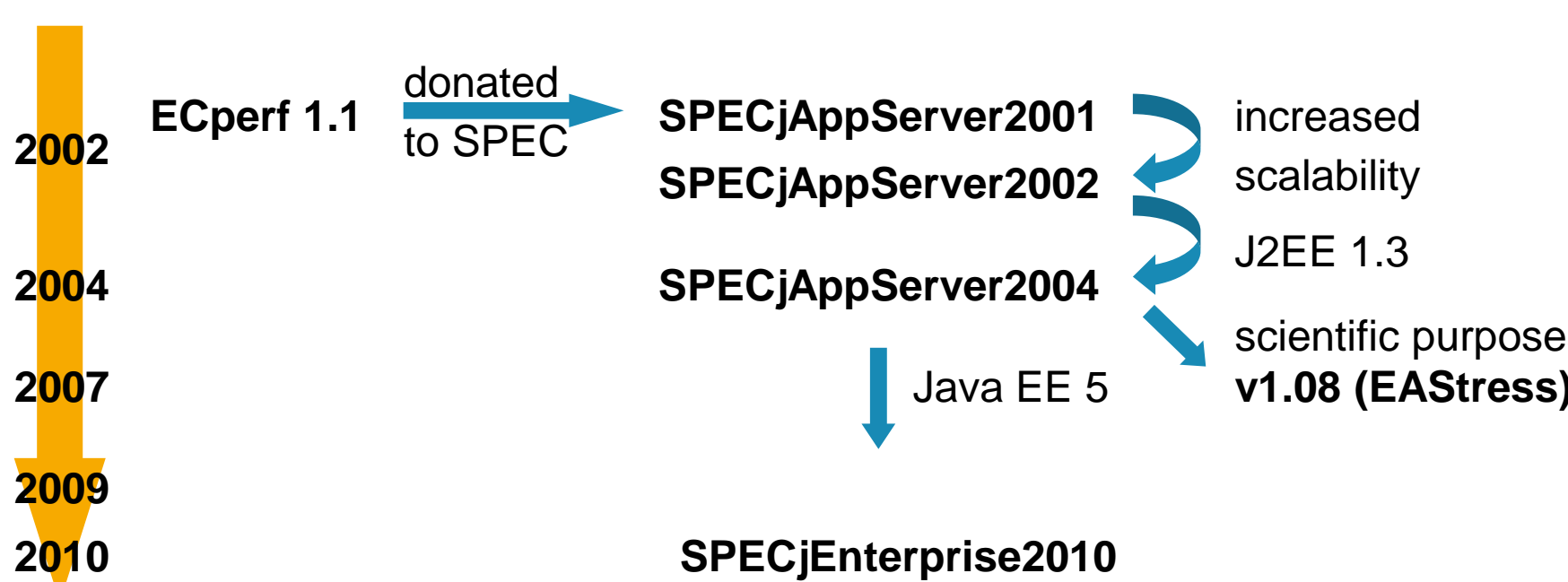
Enterprise Scale Workload
Micro Services Simplicity
Cloud Readiness

Key Java EE 7 Technologies

- CDI 1.1
- EJB 3.2
- JAX-RS 2.0
- JPA 2.1
- JMS 2.0
- WebSocket 1.0



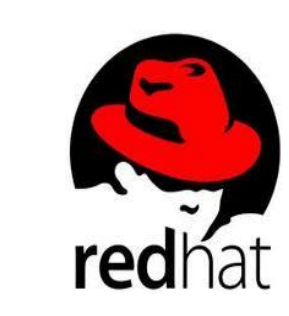
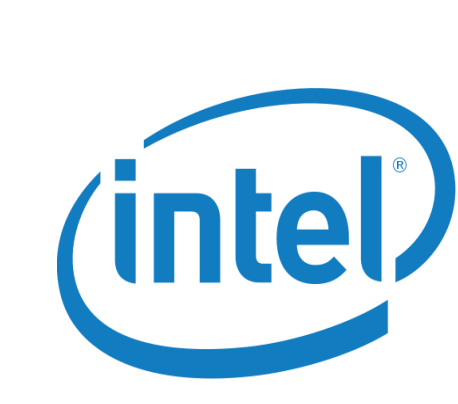
History



SPECjEnterprise2010 Working Group

<http://spec.org/jEnterprise2010/>

in the OSG Java subcommittee of SPEC with participation of



What is measured?

Full-system performance for
Java Enterprise Edition (Java EE 7) application servers
and supporting infrastructure including

Software

- JVM
- Database
- Operating System

Hardware

- Processors
- Network
- Storage