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Performance and Load Testing R12 With Oracle Applications Test Suite

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Agenda

- Performance Test
- Importance of Performance Test
- OATS
- Installation, Architecture, and Use
- High Level Plan
- Case Study
- Q & A

Performance Test

- Point in time snapshot of the expected workload
- Assess performance characteristics of applications

- Measure System resources used
- Measure Transaction execution times

- Validate selected architecture
- Predict workload and capacity
- Test architecture configuration changes

Importance of Performance

- Understand affect of workload on performance
- Reduce performance risk
  - Test key on-line transactions to establish their expected performance
  - Verify that key batch transactions complete within a specified timeframe
  - Identify performance thresholds that cannot be identified in unit or system testing
  - Study the affects of system tuning across the application, database and operating system layers
- Establish the performance viability of a specific architecture
- Predict when additional system capacity may be needed
- Take corrective measures

Addressing Performance Issue

Option#1	• **Analytical Analysis**
Strength	• **Short timeline** • **Minimum resources** • **No hardware required** • **No data loading**
Weakness	• **Highly inaccurate with many transactions** • **Difficulty adjusting for environments without sufficient history**

Continued …

Addressing Performance Issue

Option#2	• Learn as you go or 'Fix it as it breaks'
Strength	• Minimal up-front work • No hardware required • No resources required
Weakness	• Users are the first to discover poor performance • Production performance problems require immediate fixes (not always possible) • Phased implementations may be delayed or halted entirely • Difficult to make architecture changes when the production system is in crisis

Continued …

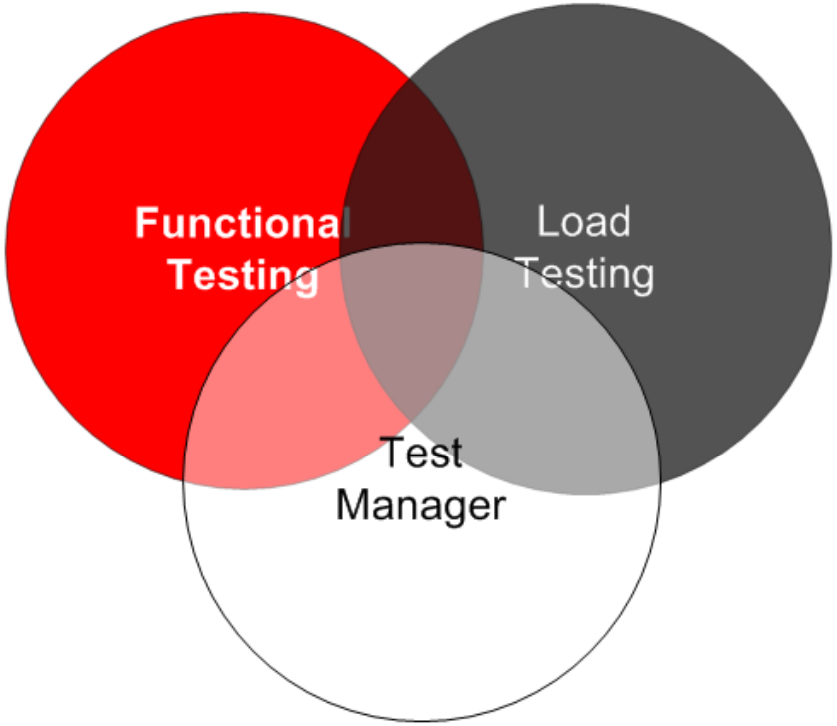
Addressing Performance Issue

Option#3	• Pre-production performance testing
Strength	• Simulates production • Greatly reduces risk • Provides roll out sizing
Weakness	• Process and technical resources required • Takes approximately 12 weeks • Requires dedicated testing environment • Results dependent upon closeness of simulation to reality

Oracle Application Testing Suite

Oracle Functional Testing

Automated functional & regression testing



Oracle Load Testing

Automated load & performance testing

Oracle Test Manager

Test process management, requirements and defect tracking

Oracle Load Testing

System Requirements

- Operating System (32 bit versions only): Windows XP, Windows Vista, Windows 2003, Windows 2000 (SP4)
- Memory: Minimum 2 GB
- System: x86 32bit processor, 1.5 GHz or faster
- Disk Space: 10 GB minimum free (at least 3GB free on the system drive)
- Browser: Internet Explorer 6.0, 7.0, 8.0, Firefox 3.0
- Database: Oracle Database 10g or 11g
- Application Server: Oracle WebLogic 11g (10.3.1.0)

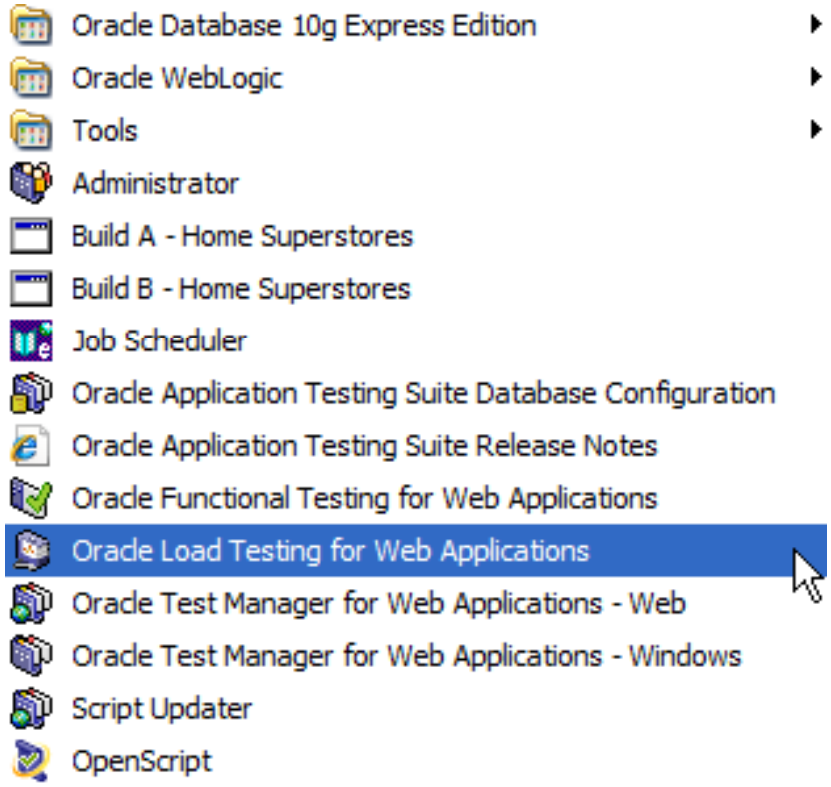
Installation

ATS 9.01.0157 install zip (1.55 GB) includes:

- OATS901.exe: 495 MB
  - main installer for OTM, OLT & legacy OFT
- OpenScript901.exe: 253 MB
  - separate installer for OFT OpenScript
- docs: 51 MB
- oxe: 206 MB
- wls:601 MB
- WebLogic & Oracle XE installers –
  - automatically installed & configured by OATS900.exe installer

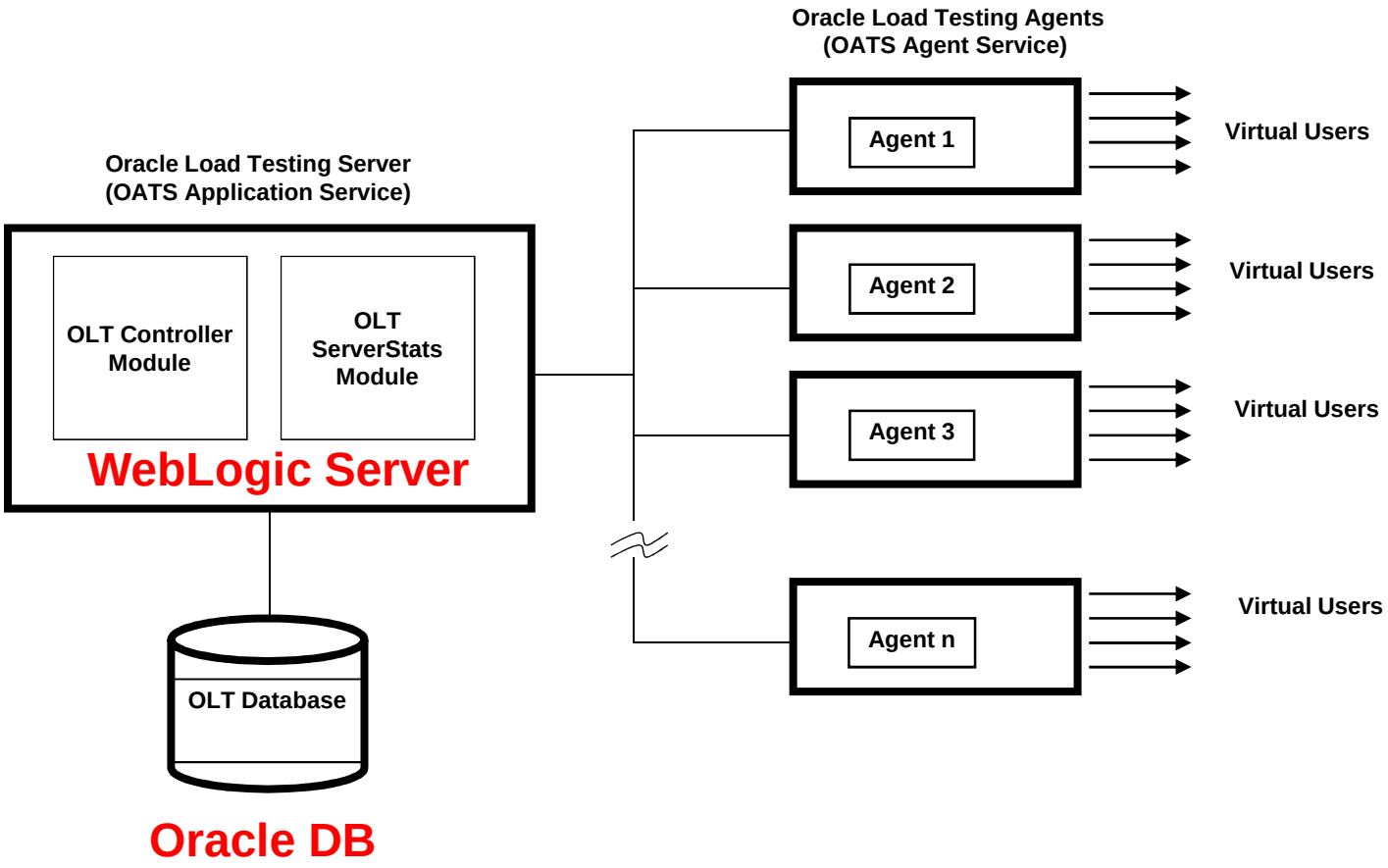
Installation

- 3.46 GB
- 42,117 Files
- 5,340 Folders
  - Start >
  - Oracle Application Testing Suite:



Oracle Load Testing

Architecture



Oracle Load Testing

Components

OLT Server/Controller:

- Main interface for configuring load test
- “OATS Application Service” is used to run the OLT Server/Controller
- Typically one Server/Controller component per deployment
- WebLogic 11gR1
- Web-based user interface accessible through IE or Firefox

- **OLT VU/Agents:**
- Agent is used to run Virtual Users
- “OATS Agent Service” in is used to run the OLT VU/Agent
- Controller will start Virtual Users on configured Agent systems at run time
- One or more Agent systems required depending on size of load test
- Can typically run up from 500 – 1000 VUs per Agent system depending on its specifications
- Not recommended to run VU/Agent and Controller/Server on same system

Oracle Load Testing

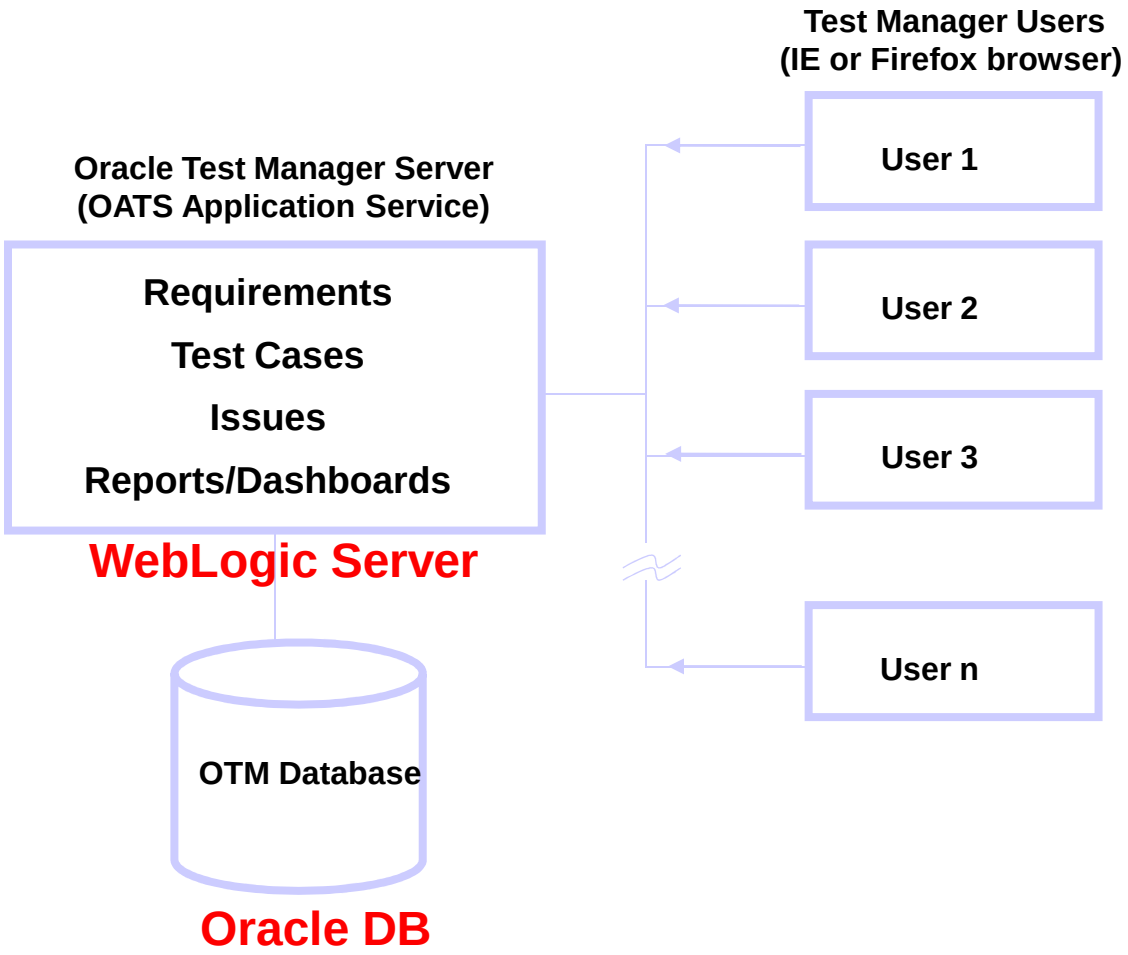
Components

OLT Database:

- OLT Database is used to store load test results for real-time and post-run reporting.
- Oracle 11g and 10g are supported
- 11g EE restricted use license included with OLT
- Oracle XE is included with installer for out-of-box demo functionality
- Production systems should use a full Oracle database instance

Oracle Test Manager

Architecture



Oracle Test Manager

Components

OTM Server:

- “OATS Application Service” is used to run the OTM Server
- Typically one OTM Server per deployment
- WebLogic 11gR1
- Web-based user interface accessible through IE or Firefox

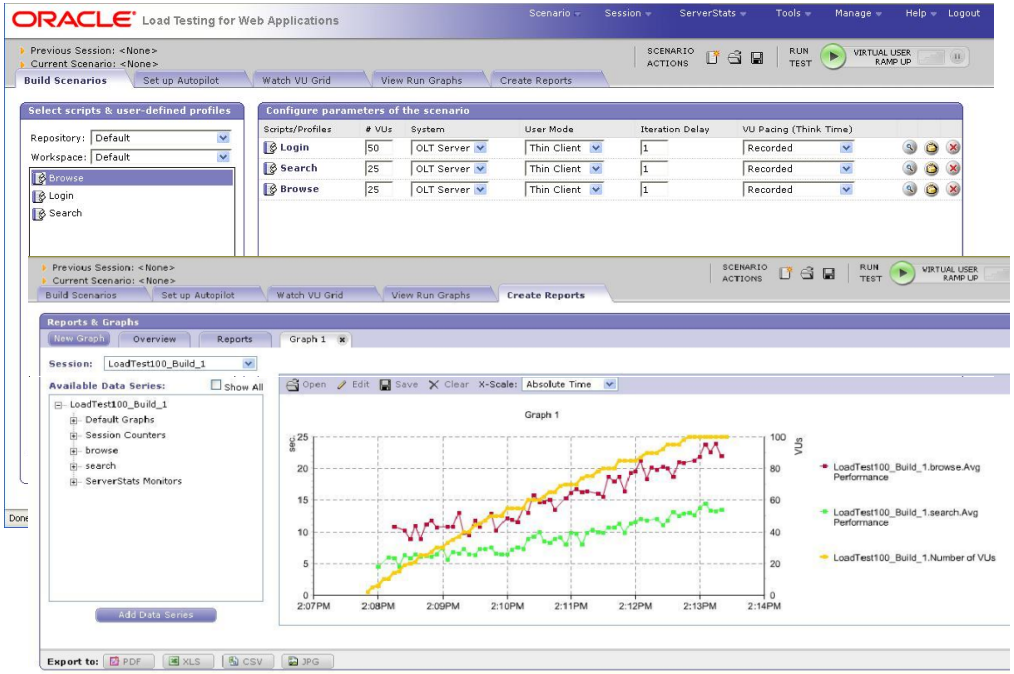
OTM Database:

- OTM Database is used to store all assets managed by OTM
- Oracle 11g and 10g are supported
- 11g EE restricted use license included with OTM
- Oracle XE is included with installer for out-of-box demo functionality
- Production systems should use a full Oracle database instance

Oracle Load Testing

Load and Performance Testing and Tuning

- Realistic load & performance testing for Web, SOA and packaged applications
- Scale to thousands of concurrent users to simulate peak production loads
- Delivers better accuracy by performing functional content validation under load
- Intuitive Web console promotes collaborative testing
- Integrated server monitors help identify & resolve performance bottlenecks
- Custom accelerators for EBS, Siebel and Web Services for efficient, optimized testing



Oracle Load Testing Advantages

Powerful scripting capabilities

- Leverages integrated scripting platform in Oracle Functional Testing to simplify load scripting
- Provides custom load testing accelerators for Oracle applications
- Built-in content validation and automated script correlation improves accuracy and reduces scripting time

Collaborative Web-based interface

- Web-based load controller interface enables remote access and multi-user collaboration during load test execution

Scalable enterprise architecture

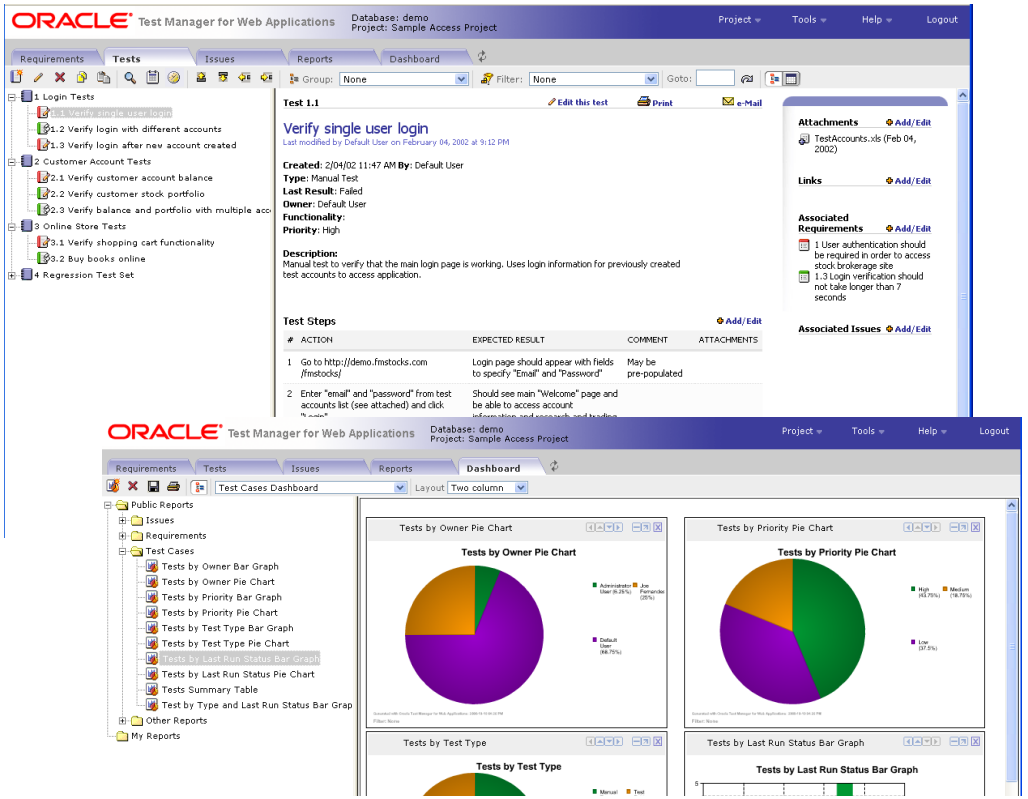
- Load Testing platform leverages WebLogic Server and Oracle DB for enhanced performance and scalability

Integrated performance diagnostics

- Leverage built-in server monitors or combine with Oracle Enterprise Manager to isolate & resolve performance bottlenecks

Oracle Test Manager

- Manage test process from a centralized Web console
- Comprehensive traceability from test requirements, to test cases, to issues
- Document both manual & automated test cases and execute from your test plan
- Create reports to provide visibility into the test process
- Fully customizable to fit your test methodology
- Scalable enterprise architecture, yet easy to deploy & manage



Oracle Test Manager

Advantages

Intuitive

- Simple, Web-based interface to manage your test process
- Easy to access for your entire testing team

Comprehensive

- Manage test cases, test requirements, issues and test execution from one central location

Easy to deploy and manage

- Quick to install and configure
- Fully customizable fields and reports to fit your test process

Scalable enterprise architecture

- Test Manager platform leverages WebLogic Server and Oracle DB for enhanced performance and scalability

Testing Accelerators in ATS

- Enables automated functional testing and load testing for Oracle E-Business Suite applications
- Supports both Web & Oracle Forms application interfaces
- Supports Oracle EBS R12 (Forms 10g) and 11i (Forms 6i) versions

EBS/Forms Accelerator Support

- EBS R12 (Forms 10g) running on Sun JRE, and
  EBS 11i (Forms 6i) running on Jinitiator
- JRE versions supported: 1.3, 1.4, 1.5, 1.6
- Jinitiator 1.3 only
- Both Forms servlet and socket communication modes

Recording EBS/Forms Scripts

- Prior to recording an EBS/Forms script for the first time, log into the application at least once to make sure the necessary client-side components have been downloaded.

High Level Tasks

- Define scope & strategy
- Define test scenarios
- Define steps in scenarios
- Create test scripts
- Determine test data needed
- Create and load test data
- Create test database
- Create test environment
- Execute test
- Produce report

Required resources

- Project manager
- Performance test team lead
- Technical analyst
- Database administrator
- Application administrator
- System administrator
- Network administrator
- Business analyst
- User representative
- User emulation scripting resource

Critical Success Factors

- A limited and well defined test scope
- Clearly defined success criteria for the test
- Validating that the workload being tested accurately reflects the work to be executed against the production system
- Ensuring that a test environment exists which is similar in architecture as well as data volume and contents to the production system
- Creating a performance test team which has functional and business process expertise on it as well as technical expertise
- Access to performance testing expertise and tools

Case Study

Business Challenges	• Scalability • Sizing • Capacity planning
Solution	• Company-wide effort to standardize on Oracle Load Testing for all load testing projects
Business Results	• Scalable environment • Production Sizing • Future capacity planning

Summary

- Reduce performance risk
- Establish the performance viability of a specific architecture
- Predict when additional system capacity may be needed

Reference

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Q&A

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