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Siemens PLM Software

Teamcenter load test workshop

Facilitating top-notch system performance

Benefits

- Project testing team achieves the best automated scalability test concepts
- Understand all steps needed in planning and executing an automated scalability test program
- Gain lessons learned from Siemens PLM Software internal test activities
- Receive sample test scripts based on IBM Rational Performance Tester and Apache JMeter test tools
- Bring together relevant stakeholders needed to plan an automated scalability test program
- Develop an initial draft test plan that takes into consideration performance requirements and end user acceptance

Summary

System performance is one of the most critical factors for measuring the success of a Teamcenter® software implementation. To ensure success, the Teamcenter system must be able to handle the expected number of users. The Teamcenter load test workshop (TLTW), which is an Advanced Technical Services (ATS) offering, provides critical knowledge transfer, practice sharing and guidance to the testing team, and employs the same methods and tools that are used at Siemens PLM Software in product scalability tests of up to 10,000 users.

The goals of TLTW are to introduce the Teamcenter load test, share experience and techniques used in the test, provide recommendations in preparing the test, and prepare a customer project team in order to plan and execute the test according to the established Siemens PLM Software methods and practices. It is recommended that customers with medium to large scale Teamcenter deployments put a load test phase into their implementation project plan in order to understand the scalability and performance behavior, and to rectify any issues prior to the system going into production, especially when customizations are made. Load testing consists of technically complex, specialized and challenging tasks that can be time consuming and costly if they are not planned and executed properly, resulting in serious project delays and budget overruns. Customers are strongly encouraged to engage Siemens PLM Software Advanced Technical Services experts to conduct a TLTW to prepare and plan their implementation project.

Overview

The objective of the load test phase in a project is to test the scalability, performance and stability of Teamcenter with the end users' operations by generating the desired level of automated loading using the test tool, which is ideally suited for reproducing the end user usage volume and routine use cases operations. It is performed in Teamcenter, possibly with customization, in a production-like architecture and infrastructure, enabling the customer to achieve a high level of

confidence in the future deployment, performance and stability of the Teamcenter production system.

How should the load test phase be prepared and planned?

TLTW is designed to cover the load testing methodologies for Teamcenter 4-tier clients with a focus on rich client automated load testing using IBM Rational Performance Tester, which is the Siemens PLM Software standard load test generation and analysis tool. TLTW is split into two parts. Part one is a standard three man-days onsite workshop for a customer, partner or Siemens PLM Software project team testing team so they can learn how to conduct automated scalability testing. Part two is an optional extension of part one in which a Siemens PLM Software expert helps develop an initial draft test plan that when finalized will provide a road map for the customer's automated scalability test project.

Scope

Part one

Introduction of Teamcenter load test for scalability, stability and performance:

- *Goals:* define load test in relation to scalability, stability and performance
- *Plan:* provide knowledge in the areas of technical skills, human resources, hardware/software resources, test project plan, test tool license and end user acceptance criteria
- *Tools:* introduce tools for testing, monitoring, data loading, analysis and reporting and demonstration of the use of IBM Rational Performance Tester to capture, enhance and run automated load test scripts
- *Capture and playback:* deliver Teamcenter web and file management system (FMS) hypertext transfer protocol (HTTP) traffic configuration, parameterization, correlation, think time and timer setting, diagnostics messages, etc.
- *Scenarios:* assemble captured actions into virtual workflows that will be executed during the test runs
- *Test execution:* perform test environment validation and individual test runs
- *Environment refresh:* test environment initial configuration and refresh process advisory and guidance
- *Analysis and reporting:* determine what performance metrics to measure, and what kind of test results analysis and reporting are needed
- *Test plan:* define test plan, and what are the constructs and what contents should be inside

- *IBM Rational Performance Tester:* demonstrate the test capture, edit, execution and reporting process using IBM Rational Performance Tester

Part two

An optional extension of part one that provides a guided working session based on customer implementation specifics that will lead to the creation of an initial draft test plan, including:

- Load test goals and acceptance criteria
- Discovery of implementation characteristics
- Discussion of the test plan, including objectives, software versions, testing system architecture and infrastructure, data preparation and loading
- Identification of test scenarios, test cases and workflows
- Discussion and planning for necessary human resources
- Discussion and planning of detail tasks scheduling
- Discussion and definition of the use cases and test scenarios
- Discussion and planning of the test execution requirement details
- Performance metric collection and reporting

Prerequisites

Part one and two of TLTW requires:

- Conference room or classroom for the workshop
- Customer to provide office and classroom facility with internet access
- Customer allows Siemens PLM Software expert to carry a laptop computer and connect to the internet for the delivery of the workshop
- Customer to provide the necessary information requested by the Siemens PLM Software expert prior to the start of the onsite services
- Customer assigns qualified personnel to attend workshop and working sessions

Part two of TLTW requires:

- Customer to provide comprehensive answers to the TLTW questionnaire approximately one week prior to part two
- Customer to provide the Teamcenter production environment deployment architecture and infrastructure detail design document
- Customer to provide their intended load test environment, if any, including architecture and infrastructure specifications
- Customer to provide the name and version of their intended tools for the load test
- Make the database administrator (DBA), network administrator, Teamcenter system and application administrator and project manager available to provide information

Duration

- Part one requires three days onsite in a week
- Part two requires one to two weeks, including:
  - One day of offsite preparation
  - Two days onsite in a week that may contiguously follow part one
  - One week to provide the deliverables

Deliverables

Teamcenter load test workshop has the following deliverables:

- *Part one:* Teamcenter automated load testing classroom presentation and demonstration featuring both generic test concepts and specific test details
- *Part two only:* working sessions designed to capture information needed for a draft test plan
- *Part two only:* a draft test plan document

For more information please contact ATS.plm@siemens.com or the services manager in your country.

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