Design Test Environment

By TranLeTrung – May 25, 2015

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Objective

- Introduction on design test environment
- Guide on identifying required infrastructure and tools

Table of Content

Introduction on Test Environment - Definition

- A **test environment** is anydevelopment environment that is primarily used to perform incremental and iterative system testing on an evolving application
- The typical objectives of the test environment are to provide the necessary infrastructure to enable the:
  - **Independent test team** to perform:
    - Functional Testing
    - Performance Testing
    - Load Testing
    - Stress Testing
    - Robustness Testing
    - Configuration Testing
    - Contention Testing
    - Availability Testing
    - Portability Testing (requires multiple clients and servers)
  - **Security team** to perform initial security testing.
  - **User experience team** to perform system usability testing

Introduction on Test Environment- Benefits

The typical benefits of the test environment include:

- An integrated test environment improves the efficiency of system testing.
- A separate test environment enables system testing to proceed in parallel with development, integration, and launch testing.

Introduction on Test Environment- Content

- The typical contents of the test environment are:
- Hardware Components:
  - System test team workstations
  - System testing server
  - Portability testing servers
  - Configuration management server
  - Local area network
- Software Components:
  - Test Tools
  - Documentation Tools
- Configuration Management Tools

Introduction on Test Environment- Stakeholders

The typical stakeholders of the test environment are:

- **Producers:**
  - Environments Team
- **Evaluator:**
  - Environments Inspection Team
- **Approvers:**
  - Technical Leader
  - Project Manager
  - Customer Representative
- **Maintainers:**
  - Independent Test Team
  - Environments Team
- **Users:**
  - Independent Test Team, which uses the test environment to perform functional, performance, load, stress, robustness, configuration,contention, availability, and portability testing.
  - Security Team, which uses the test environment to perform initial security testing.
  - User Experience Team, which uses the test environment to perform system usability testing.

Design Test Environment

INPUT	TOOLS	OUTPUT
1. Work product 2. Testing scope 3. Type of test applied 4. Standards, technology trends 5. Organization process assets	1. Historical data analysis 2. Breakdown/Top-down methods 3. Combinatorial method	1. Test environment specification/requirement 2. Test Environment setup Checklist 3. Organization process assets update

INPUTS

- Work product: product specification or requirement
- Testing scopes: scope of tesing for the product
- Type of test applied: what types of testing are used in the project
- Standards, technology trends: policy or standard used by the project and analysis result for trend of technology used in the project
- Organization process assets: historical data, process, regulation

TOOLS

- Historical data analysis
- Breakdown/Top-Down methods
- Combinatorial method

OUTPUTS

- Test environment specification: template attached
- Test Environment setup Checklist: template attached
- Organization assets update

In-house combination tool

- http://172.19.7.10/ct/
- Guide: http://172.19.7.10/ct/index.php/help

REFERENCE & Q/A

- Reference: http://www.opfro.org/index.html?Components/WorkProducts/EnvironmentsSet/TestEnvironment/TestEnvironment.html~Contents

Thank you !