SAP Automated Testing Excellence
Using HP Quality Center Test Tools

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• SAP End-2-End Test Management
• What’s new in Solution Manager 7.1
• Business Process Change Analyzer
• Test Automation Framework with HP QTP 11
• Test Automation with HP QC 11 & SAP TAO
• HP QC 11 (QC / QTP / BPT) Features
E2E Test Management
Test Process embedded in the SAP Application Lifecycle

Type of Change
- New SAP Solution
  - Implementation of new SAP Solution

SAP Solution Update
- SAP Support Packages
- SAP Legal Change Packages
- SAP Enhancement Packages
- Customizing changes
- Custom Code
- Interface changes

Test Scope Identification
- Business Blueprint
  - Business Blueprint Design
  - Solution Configuration

Change Impact Analysis
- Business Blueprint Update
- Identification of Business Processes affected by SAP Solution Updates
- Recommendation of business processes for regression tests

Test Planning System Setup
- Development of Test Cases
- Test Plan setup
- Compilation of Test Packages
- Assignment of Testers
- Setup of Test System
- Creation of Test Data

Test Execution
- Manual tests
- Automated tests
- Integration Validation
- Incident Management
- Performance tests
- Test status and progress reporting
- Test sign-off

Deploy changes to Production
- Deployment of changes through transports from Test to Production system
- SAP Support packages, Legal Change Packages, Enhancement Packages
# New in Solution Manager 7.1

<table>
<thead>
<tr>
<th>Area</th>
<th>Improvement</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use</td>
<td>Guidance for manual testers</td>
<td>Improve the efficiency of testers by guiding them through all test activities, including access to test cases, test systems, status setting and incident management.</td>
</tr>
<tr>
<td>Openness</td>
<td>Test Automation Framework</td>
<td>Automatic regression tests of the entire customer solution, including SAP and non-SAP solutions, by integration of HP QTP and other 3rd party test automation tools.</td>
</tr>
<tr>
<td>Analysis</td>
<td>Test Scope Optimization with Business Process Change Analyzer (BPCA)</td>
<td>Minimize the risk of untested changes by optimizing test scope based on test effort and business process priority.</td>
</tr>
</tbody>
</table>
HP Automated Testing Alternatives

Test Options for functional testing of SAP-centric business processes

Type of Change
- New SAP Solution
- SAP Solution Update

Test Scope Identification
- Business Blueprint
- Change Impact Analysis

Test Options for functional testing of SAP-centric business processes

Test Option 1
- SAP Solution Manager 7.0
- SAP Solution Manager 7.1
- Test Workbench
- Work Center TM
- Test Automation Framework
- HP QTP and other 3rd party tools

Test Option 2
- SAP Quality Center by HP
- SAP TAO

SAP Solution Manager 7.0
SAP Solution Manager 7.1
Test Workbench
Work Center TM
Test Automation Framework
HP QTP and other 3rd party tools
BPCA Use Case 4: SP / EhP Deployment and Test Scope Optimization

Example: Deployment of EhP 4 for SAP ERP

SAP Support Package / Enhancement Package Deployment

DEV → SP / EhP → TST → PRD

Change Impact Analysis

Identification of impacted business processes

Test Recommendation

Generation of Test Plan with risk-based test scope
Business Process Change Analyzer

Test Scope Optimization for SAP Support Packages and EhPs

Key Message

- Optimization, i.e. identification of test cases based on # changed SAP objects and test effort
- Approach: changed SAP objects should be tested at least once
- Not all affected process steps have to be included in the regression test

100% Test coverage reached

96% Test coverage selected by Change Manager

Ranking of impacted Process Steps
New SAP Offering for Test Automation

**Goal**
Support SAP customers to move from manual to automated regression tests in a convenient, reliable, and cost efficient fashion for SAP and non-SAP applications.

<table>
<thead>
<tr>
<th>Offering</th>
<th>What’s new?</th>
</tr>
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<tbody>
<tr>
<td>SAP Solution Manager 7.1</td>
<td>Test Automation Framework to manage and integrate automated test scripts like HP QTP test data, system under test, etc.</td>
</tr>
<tr>
<td>HP Quick Test Professional 11</td>
<td>HP QTP with extended functionality for test data and test system handling for automated tests of SAP and non-SAP applications</td>
</tr>
<tr>
<td>2 Licenses of HP QTP</td>
<td>2 licenses of HP QTP for all SAP customers with SAP Enterprise Support, PSLE or Max Attention contract</td>
</tr>
</tbody>
</table>

Access: https://service.sap.com/testing
FUNCTIONALITY

1. Integration of design time of HP QTP test tool through certified interface, test data planning and assignment of System under Test
2. Scheduling of execution of unattended automated tests – also for remote locations
3. Integration of status and progress reporting between SAP Solution Manager and HP
4. Change Impact Analysis and Workflow to trigger repair activities for damaged test cases
Test Automation Framework
Definition of automated Tests and assignment to Processes

- Seamless creation of automated test cases from SAP Solution Manager business process hierarchy with HP QTP application.
- SAP Solution Manager provides Test Data and System Landscape to auto Test Case
- SAP provides interfaces to link SAP Solution Manager (Test Management) and HP QTP Automation applications.

Test Configuration

**Test Script**
- eCATT
- QTP

**Test Data**

<table>
<thead>
<tr>
<th>Doc Type</th>
<th>Customer</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR</td>
<td>C 1000</td>
<td>P-100</td>
</tr>
<tr>
<td>OR</td>
<td>C 3500</td>
<td>X-500</td>
</tr>
</tbody>
</table>

**System Data**

- SAP ERP
- SAP PI
- SAP SOA

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Test Automation Framework

Fast Test Script Creation

Direct access from SAP Solution Manager ➔ HP QTP Editor ➔ SAP Test System
Test Automation Framework

Parameterization of test scripts and SAP Test Data Container

1. New test script
2. (Automatic) Replacement of static value (customer „C1000“) with parameter (L_SOLD_TO_PARTY)
3. Test Data variant generated by script parameters
4. Wizard to map test data from TDC to Test Configuration

SAP Test Configuration

Test Script

Test Data

Test Data Container (TDC)

<table>
<thead>
<tr>
<th>Order Type</th>
<th>Customer</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR</td>
<td>C1000</td>
<td>P-100</td>
</tr>
<tr>
<td>OR</td>
<td>C2000</td>
<td>P-200</td>
</tr>
</tbody>
</table>
UI Technologies used in SAP-centric Business Processes

Goal
Provide test automation for all typical business processes used by SAP customers including SAP and non-SAP applications.

<table>
<thead>
<tr>
<th>SAP vs. non-SAP Business Process</th>
<th>Example</th>
<th>UI Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 % SAP</td>
<td>SAP CRM, SAP ERP, SAP Portal</td>
<td>SAPGui, Web-Dynpro ABAP, BSP, ...</td>
</tr>
<tr>
<td>SAP-centric</td>
<td>SAP CRM, SAP ERP + partner product for price determination</td>
<td>SAPGui, Web-Dynpro ABAP, BSP, html, .Net, JavaScript, ...</td>
</tr>
<tr>
<td>Non-SAP</td>
<td>Partner application or non-SAP application for HR processes</td>
<td>Html, .Net, JavaScript, ...</td>
</tr>
</tbody>
</table>

(*) see HP website for a complete list of supported UI technologies
Test Execution

SAP Solution Manager
Work Center „Test Management“

User starts Test Package

Test Automation Framework
Test Configuration
Test Script Test Data Test Systems

Read test data

Test Data Container (TDC)

Test Script
HP QTP

launch
Test Data Test Systems
	n run

Test System
SAP and non-SAP

Test Data Container

SAP Solution Manager
Work Center „Test Management“

User starts Test Package

Test Automation Framework
Test Configuration
Test Script Test Data Test Systems

Read test data

Test Data Container (TDC)

Test Script
HP QTP

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Test System
SAP and non-SAP

Test Data Container
Demo

..\..\tmp\01_TAF_Part1_with_QTP11.exe