Astadia™ THE MAINFRAME TO CLOUD EXPERTS

TESTMATCH:
AUTOMATED TESTING

AT A GLANCE

Astadia's TestMatch provides automated testing of mainframe OLTP (terminal based Online Transaction Processing applications). It can be used to facilitate the migration of such legacy applications to open systems, or it can provide an automated regression test suite for a legacy application.

PRODUCT HIGHLIGHTS

Centralized test scenario recording
All user interactions can be recorded centrally on an IBM or Siemens mainframe using standard tools (no client-side or server-side installation of Astadia tools). Since the recording is done at the network level, it works regardless of the development technology (IDMS, BMS, DMS, Natural). Many protocols are supported: 3270 (IBM), 9750 (Siemens), Entire/X, MQ, TCP/IP.

Visualization
TestMatch visualizes test scenarios and sessions: this includes the terminal contents as well as all attributes that are typical for terminal-based applications: protected/editable, MDT bit, reverse-video, colors.
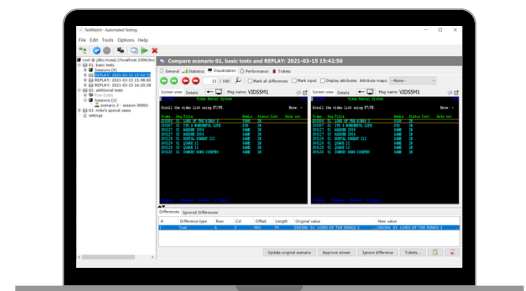
Replay
TestMatch can replay the recorded scenarios, either against the migrated application (as a migration testing tool) or against the original application (as a regression testing tool). Normal replay can either include or leave out user think time. Stress-testing replay can launch many scenarios in parallel.
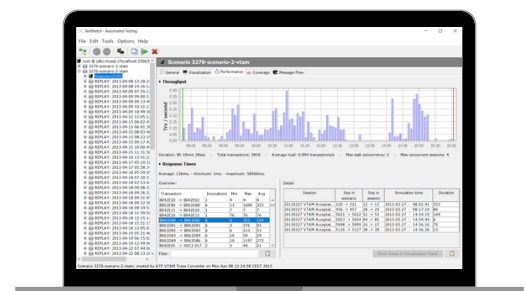
Comparison
The integrated diff tool shows a side-by-side comparison of a recorded scenario and its replayed counterpart.
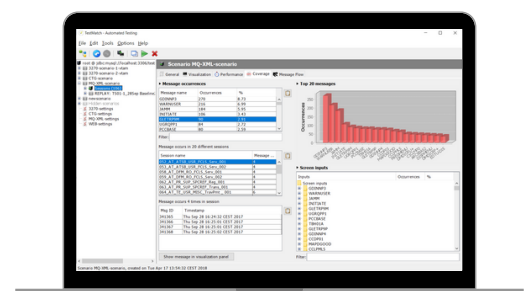
Test analysis
TestMatch provides detailed analysis of response times and throughput, and also contains helpful utilities to detect performance problems. It calculates elaborate test scenario coverage statistics and the pass rate of replayed tests.
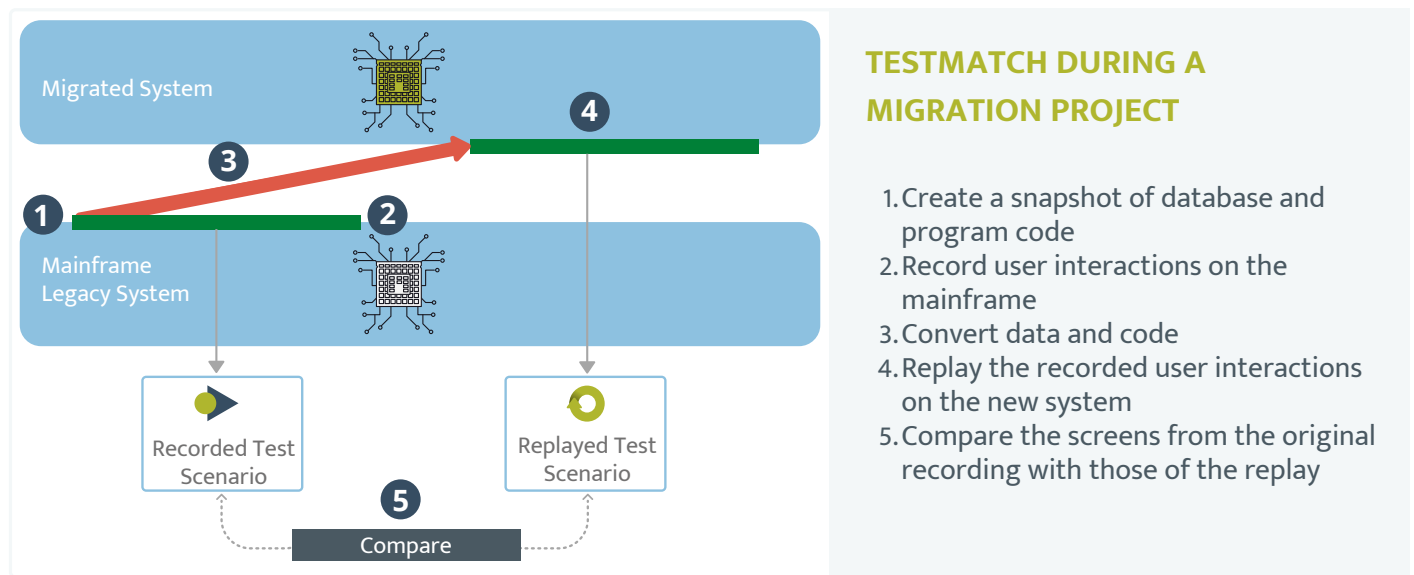
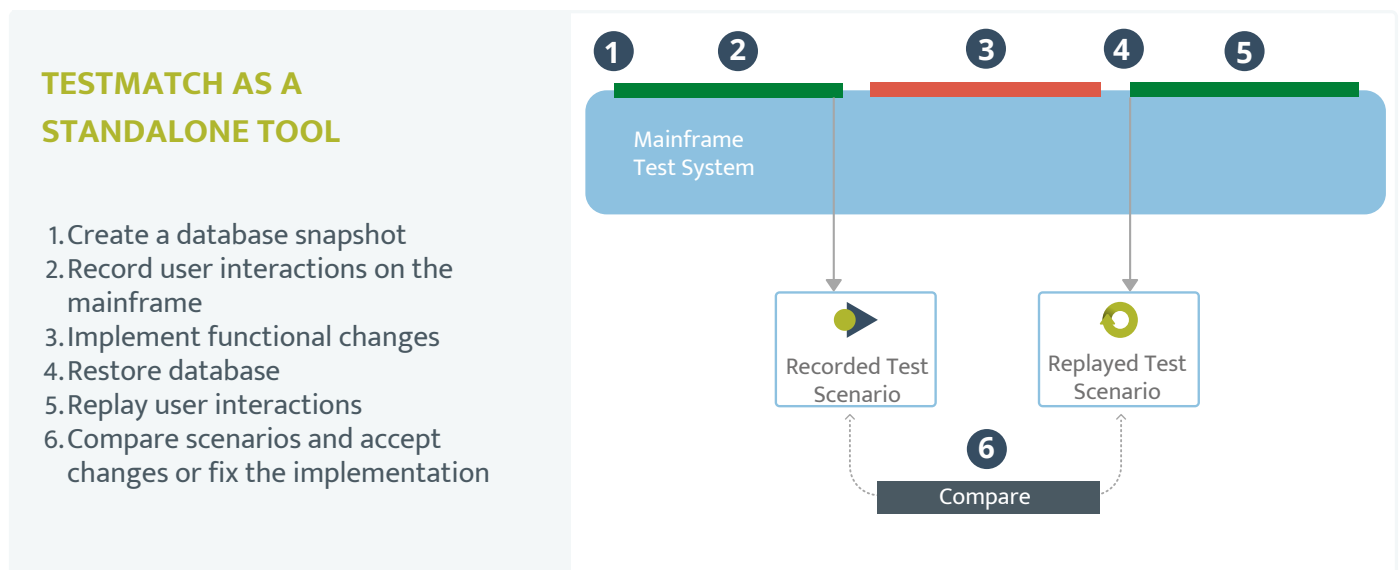
Side-by-Side Comparison

Performance Analysis

Coverage Analysis

TESTMATCH IN ACTION

TESTMATCH DURING A MIGRATION PROJECT

1. Create a snapshot of database and program code
2. Record user interactions on the mainframe
3. Convert data and code
4. Replay the recorded user interactions on the new system
5. Compare the screens from the original recording with those of the replay

During a migration project, TestMatch is used to ensure the 1-to-1 functional equivalence between the original application and its migrated counterpart. For software migrations, Astadia uses the FastTrack project management methodology, which applies a migration/testing cycle as depicted above in consecutive, always shortening cycles.

TESTMATCH AS A STANDALONE TOOL

1. Create a database snapshot
2. Record user interactions on the mainframe
3. Implement functional changes
4. Restore database
5. Replay user interactions
6. Compare scenarios and accept changes or fix the implementation

Outside of a migration context, TestMatch is used as a regression testing tool on the legacy test system. Initially, a baseline regression test suite is established (step 1 and 2).

After the implementation of a functional change, the test suite is run to verify that only the desired changes took place and any undesired side-effects of these changes are fixed in the implementation. The desired changes can then be accepted into the regression test suite too, so that this test suite evolves together with the application and at any point reflects the current functionality of the system.