



# TESTSENTINEL™

Putting the Power of Knowledge in Your Hands

**TestSentinel** is a capture/replay system that highly automates equivalence testing for both batch and on-line programs. The basic methodology is to capture all of the input and output data to and from a program prior to migration. The captured input data are then replayed into the migrated program and the output data from the replay execution is automatically compared to the output data from the pre-migrated program. If there are differences, a report is produced to assist a programmer in quickly identifying the problem.

TestSentinel is based on a source code instrumentation engine that inserts logically neutral code into programs to automatically perform the testing functions without any requirement for human intervention. This dramatically reduces the load on personnel, system and storage devices.

*Dramatically  
reducing your  
testing time  
can be the key  
to a successful  
project*

## The TestSentinel Process

The “pre-migrated” source code (the input to the conversion process) is instrumented for capture. This is accomplished by inserting logically neutral code into the source that will cause the program during execution to create a baseline capture file that will contain all of the input and output

data as mentioned above. The instrumented code is then compiled and the resulting program is executed to create a baseline capture file.

The “migrated” program (the output of the conversion process) is instrumented on a PC and replay is run and test coverage reports produced. During replay, the program obtains its input data from the baseline capture file instead of normal sources and normal output operations are suppressed. Instead, the output data are automatically compared to the output data in the baseline capture file.

## Code Coverage Analysis

During replay, TestSentinel will compile a branch and path analysis coverage report that shows what parts of the program logic have and have not been executed. If it is then determined that the code coverage was insufficient, additional or alternative test data can be prepared and

another capture/replay executed to ensure sufficient code coverage.

## Replay Analysis

After program migration, TestSentinel replays all of the inputs from the baseline file into the migrated program and compares the outputs to the originals in the baseline and produces a report showing the results

fact sheet



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of the comparison. If there are no differences in output, no problems have been introduced during the migration process. If there are differences, the program is fixed based on the detail in the reports and the test run again.

### Testing Mainframe Programs on a PC

During replay, the only requirements for the regression test are the ability to execute the program code and the baseline capture file. There is no need to replicate test or production databases or the normal operating environment for the program. In many cases, there is a PC version of the compiler, so replay can be performed on a PC simply by downloading the source code and the baseline capture file.



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## Forecross Software Solutions

### Redeployment Solutions:

#### Languages:

From: ADS/O, PL/I, COBOL, CSP,  
IMSADF II

To: COBOL, C# .NET, VB .NET, IBM  
EGL (Java), .NET COBOL

#### User Interfaces:

From: IDMS-DC, IMS-DC

To: CICS including mainframe CICS,  
the TXSeries for AIX, Windows,  
Solaris, HP-UX, other transaction  
servers (UNIKIX, MicroFocus CICS  
Option)

#### Database Platforms:

From: IDMS, IMS, VSAM

To: DB2, Oracle, SQL Server

### Solution Enhancement Tools:

I/O Navigator

Data Evaluator

DBAdvisor

TestSentinel

### XML Solutions:

L2X SmartXML Series