



# INTROSPECT

Integrated Data  
Test Automation



## DATA QUALITY:

Accuracy  
Completeness  
Consistency

### Overview

Introspect Data Testing tool is MG Harney's complete suite of testing tools and utilities used by our professional staff. These exclusive tools based on an open and reusable .Net architecture empower our teams to develop repeatable and cost effective data tests suitable for any environment.

With Introspect, teams perform a range of data analysis, integration tests and live monitoring for ongoing data integrity verification. Introspect is also an invaluable tool for testing and troubleshooting non-data integration applications that have complex data structures.

### Summary Features:

- Model based test designs
- Full test data management
- Cross platform queries
- ETL integration
- Full library of data checks
- Extendable functions
- Open architecture
- Query Designer
- Complete script editor
- Integrates with most test managers on the market

Test databases, triggers, stored procedures, schedulers, error processing, ETL and custom data integration applications

**MGHarney**  
Data Integration Testing ■ Tools & Services

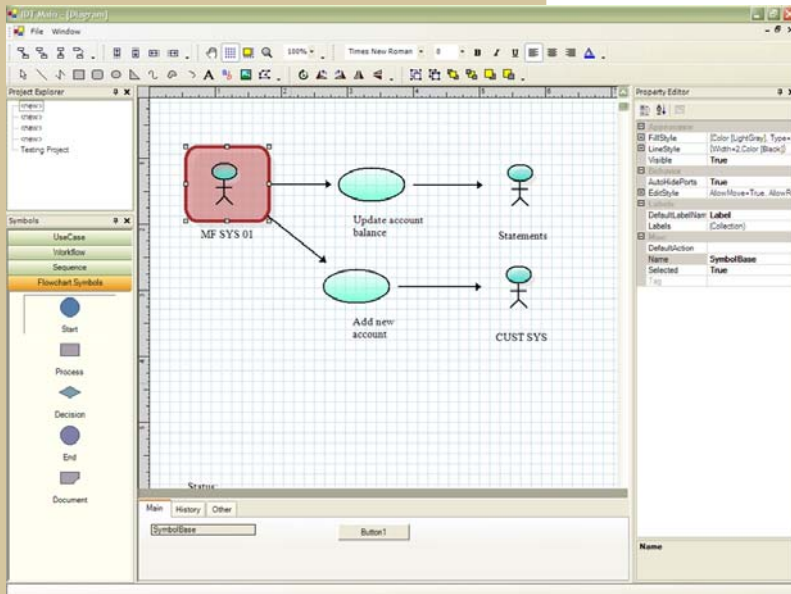




## Test Development Kit

### Suite of Utilities:

- Modeler and node designer
- Data check library
- Query developer
- Test data manager
- Full VSA script editor
- Test execution manager
- Results reporting manager



Nodes can perform data checks, execute control processes, run scripts, or even abstract more complex models creating drilldown.

## Model Based Testing Designs

What might be difficult to see in ambiguous text is readily visible in models. Often the highest integration risks are missed when testers work with ambiguities. Introspect uses modeling as a systematic approach for test designs, ensuring more comprehensive coverage at all integration and transformation levels. In this way, testers focus on the highest risks first, ensuring defect discovery earlier in the lifecycle.

## Data Flow Models:

The model designer allows test architects and engineers to create models that represent everything from the data and systems to the transformation maps and process sequences. Introspect leverages this information to create test models that reduce design efforts, saving time and money.

Each node process (connecting lines) in the model can be embedded with actions that perform a complete range of test activities and analysis based on any number of scenarios that can be developed.

## Work Flow Models:

In addition to modeling the data infrastructure and processes under test, Introspect's model designer is a flexible workflow designer that captures and communicates test team activities. With models, the test team defines their design ideas in a clear and unambiguous way that helps the project achieve its quality goals.

## Custom Node

## Symbol:

Introspect supports a range of model types with a library of symbols including a complete set of UML and flowcharts symbols. Additionally, Introspect includes a symbol designer that allows the test team to develop custom nodes that are meaningful to their organization.





## No Script Code Testing

Introspect does not require for developing tests. The model designer, test manager, views and data quality checks come together to provide complete test capabilities without coding.

The no code testing abilities make it easy to get initial tests designed and executed quickly. This allows the test team to support upfront checking in the initial iterations while more detailed test designs are created in conjunction with development designs.

## Data Quality and Fault Analysis

Introspect comes with a library of data checks and analysis capabilities. These checks give Introspect the ability to examine data before and after transformations or integration looking for data failures or deviations from quality standards.

## Library of Data Checks

The fully extendable library includes data quality checks that provide multi-faceted analysis of the data transformations. The checks range from simple static compares to more critical analysis of data associations, flow and tolerance boundaries. The check library also includes functions that monitor and validate data stability for state changes over time.

## Multi-Step Analysis

### Processing:

Data analysis can be complex, requiring many data grooming steps before analysis. Introspect makes it easy to create multi-step data processing with built-in analysis workflow and functions that perform complex data analysis.

## Full Reporting:

Introspect provides both detailed diagnostic reports and management summaries. Diagnostic reports help testers pinpoint issues and failure while summary reports provide a snapshot for testing status and data quality levels.

## Available Analysis Checks:

- Static data compares
- Missing/duplicate records
- Record counts
- Summary analysis
- Numerical tolerances
- Data tracing
- Record matching
- Segregate key validations
- Rule boundaries
- Data harmonics/ghosting
- Transaction sequencing
- Stability over time

Custom developed checks and helpers can be added through scripting or .Net.

**SETTLEMENT PROCESS: 001**  
**Unmatched Account Balances**

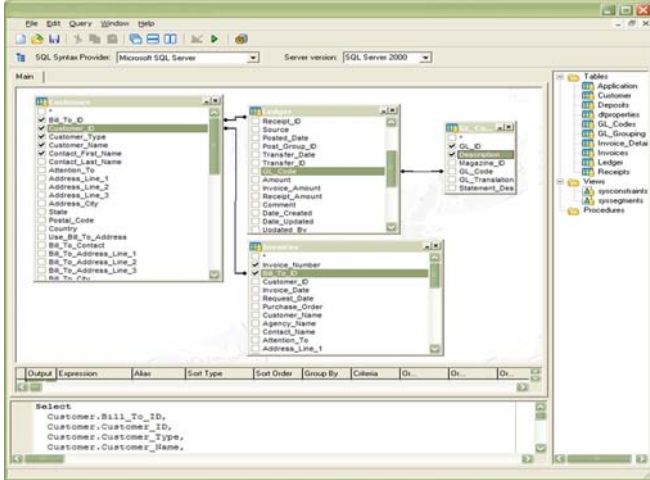
SP_NUM	CUSTOMER	CUSTOMER_NAME	CUSTOMER_AID	CHG_NUMBER	ISSUE_DATE	PAID_DATE	MSL_NUM	MSL_YEAR	MSL_MONTH	BLIND_AMOUNT	CURRENT_AMOUNT	DIFFERENCE
10	1111	WABCO-ONE INTERNATIONAL	CHEN	896210	10/20/11	10/20/2011	10	2011	8	1113.29	108.15	1005.14
10	8080	CARIBBEAN COAST TV	WESTFORS	COUL	CHEN	896210	10/10/08	10/10/2010	7	2008	2	939.21
10	8080	CARIBBEAN COAST TV	WESTFORS	COUL	CHEN	896210	10/10/08	10/10/2010	8	2008	2	841.68
10	8080	CARIBBEAN COAST TV	WESTFORS	COUL	CHEN	896210	10/10/08	10/10/2010	9	2008	2	810.83
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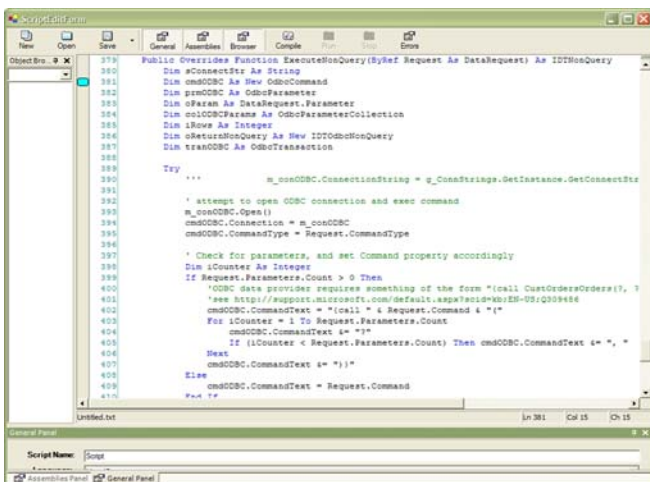


## Test Data Management

Introspect provides a comprehensive test data manager that facilitates creating a large reusable library of test data. The library can be designed and filled with test data from a variety of sources including the original source systems and third party tools. It includes full test data editing and organizational features.

## Data Cases:

Testers design a portfolio of private and sharable data scenarios from the data library. Data cases can be derived as subsets from any combination of data housed in the library. Updates and additions to the library propagate across all the tests automatically. Or, protection locks ensure that test data is not unintentionally changed affecting test outcomes and ensuring test consistency.



## Data Views

A primary challenge for any data testing is to quickly and easily create reusable views of the source and target systems, implemented in a way free of human errors. Introspect comes with a complete query developer that easily creates error-free SQL based views for any connected data source. Introspect's Query Developer eliminates tedious and error prone SQL development without the need to master complex joins and aggregate functions.

## Saved Views:

During testing, Introspect's views create a snapshot of the data and save it to the test database. Using the Query Developer, testers create views that automatically refresh its data during testing, capturing it for detailed analysis later in the test sequence or archiving it for history.

## Cross Platform Support:

With Introspect, a view created in the Query Developer can query other views without regard to the original source of the data. This ability creates a unique cross platform analysis support that is important for data testing.

## Advanced Scripting

Though Introspect does not require scripts to develop tests, it uses Microsoft's VSA (Visual Scripting for Applications) to offer more flexible control over the entire testing process. Testers can attach VSA scripts at each test point, model node or connection line. VSA scripts are useful for tailoring test set up and ETL/integration execution. VSA enables testers to extend existing data tests or create completely new data checkers for unusual situations.

## Scripting:

- Range of management and analysis functions
- Can control all testing and reporting functions
- Create extendable and reusable functions
- Attachable to models, nodes and process lines
- Easy to use VB scripting language
- Powerful .Net features
- Full featured editor with IntelliSense





## Introspect's IDT Open Architecture

Introspect comes ready to use for most data testing needs. To deal with more challenging environments, Introspect is available with access to its open data testing architecture through a development kit called Integrated Data Testing Framework or IDT for short. With the open architecture, testing teams never outgrow Introspect.

## Integrated .Net Environment

IDT's open architecture of Introspect is integrated with the .Net development environment. Using Microsoft's Visual Studio 2005, Introspect can be easily adapted to your integration and data testing needs.

## Reusable Components:

Introspect's built-in components include the design modeler, scripting engine, data manager and query developer. These are independent utilities that can be expanded or customized, adding new capabilities. You can even incorporate these utilities into completely new testing applications.

## Accessible Test Objects:

All the test objects for setup, execution and analysis are accessible through the open architecture. Test developers can access data cases, workflow/command executions, data checks and reporting objects. This makes it possible to control every step in the testing process.

## Test Harness or Test Application?

Do you need to test additional functionality? Do you need to support a new source of data? Is it helpful to have integration applications with test hooks or harnesses? Do you want integration applications that test their own data?

With access to Introspect's open architecture, simple test harnesses or completely new testing abilities can be created to support any data testing and monitoring need.

### Source and Target Systems:

Introspect supports most sources of data and database management systems. The open architecture allows custom sources of data to be added.

## System Requirements

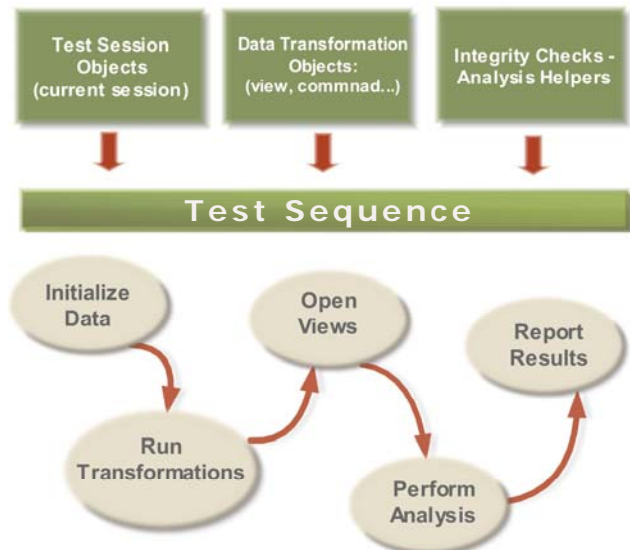
### Clients

Introspect requires Windows XP/2000, 512 mb RAM (1 gb recommend) and 1.6 GHz processor (2.8 or better recommended) with 2 gb of free disk space.

### Server

Introspect requires a database system such as SQL Server, Oracle or DB2 to maintain test and data. The amount of disk space required is dependent on the size of the data library and tests developed.

Visual Studio 2005 is required to use the Open Architecture SDK





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