

# QualiSystems

## Extending QC and QTP beyond Software Testing

Standards of Excellence

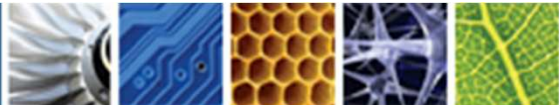
Robin Jackson UK Sales Director

Gary Wilson Field Application Engineer

# Demands of Today's Users and Consumers

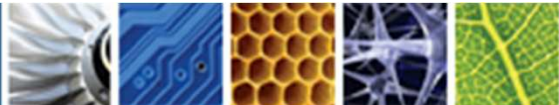
- High Availability
- 100% Reliability
- Very Responsive
- No Security Compromises

**.....in a rapidly  
changing environment**



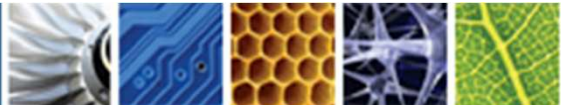
# Application Testing Today

- Tools
  - Management Platforms (Quality Center)
  - Functional test automation (Quick Test Pro)
  - Load Testing (LoadRunner)
  - 15+ years of experience and best practice
- Techniques
  - Methodologies, e.g. Agile
  - Metrics



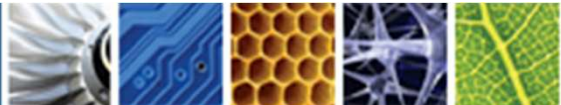
# Importance of Infrastructure

- Networks Underpin Everything We Do
  - IT Systems
  - Mobile Handsets
  - Set Top Boxes/Home Routers
- Complex Network Infrastructures
  - Switches, Routers, Hubs, Load Balancers
- Demands for Change
  - Firmware drivers
  - New Hardware
  - Capacity Requirements



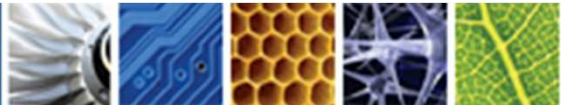
# Infrastructure Testing Today

- Infrastructure Testing Today
  - Mostly manual testing
- 10-15 Years Behind Software Test Automation
  - Products Available for only 4-5 Years
  - Early Adopters in Automation
  - Rising Take-up
- Increasing Rate of Change
  - Manual testing not fast or accurate enough
  - Test Automation is the only solution



# Infrastructure Testing – Challenges

- Wide Variety of Interfaces
  - Command Line Interface (DOS and Linux)
  - DLL's
  - Executables
  - SNMP (get/set and trap)
  - Terminal: telnet, SSH
  - ftp
  - Serial, USB, etc.
  - VISA (Virtual Instrument)
  - Scripts – TCL, Java, Python, Perl, etc.
  - GUI



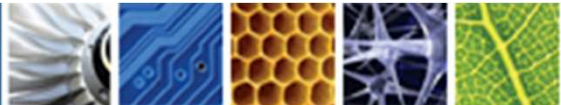
# Infrastructure Testing – More Challenges

- Test Lab Management
  - Large number of devices and test equipment
  - Huge range of versions
  - Heavy demand for equipment
  - Set up and Tear Down Time
- Validation

```
PS C:\> ping 127.0.0.1

Pinging 127.0.0.1 with 32 bytes of data:
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 127.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

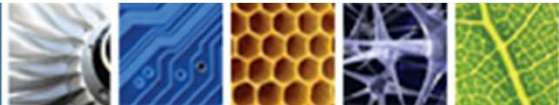


# Infrastructure Automation with TestShell

- Testers directly create automation
  - Simple graphical flowchart
  - Automated response validation
  - Intuitive parallelism
  - Building block approach

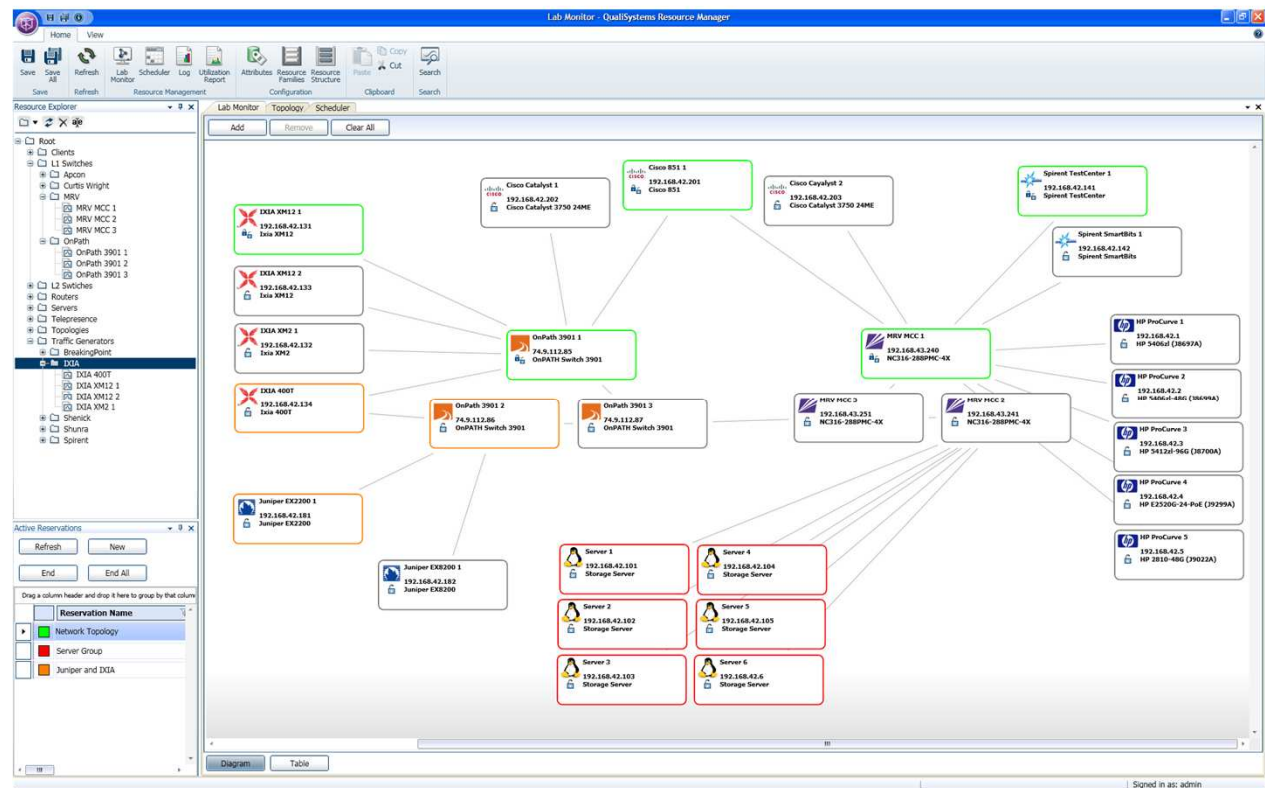
- Interface Support

- Control interfaces *Telnet, SSH, Web Services, Serial...*
- GUI *Windows, Java, Web...*
- Scripts *TCL, Perl, Python...*
- Leading testing vendors *Ixia, Spirent, Shenick, MRV, OnPath...*
- Custom drivers *NET, Exe, LabVIEW, ActiveX...*
- Management apps *QC, SVN...*













# Lab Management with TestShell

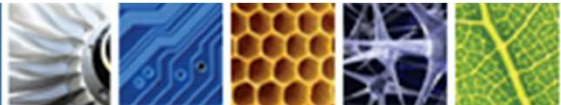
- Define Environments
- L1 Switch Management
- Resource Management
  - Scheduling
  - Allocation
  - Utilization
  - Monitoring
- Audit Trails
- Link with Automation



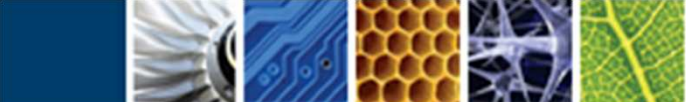
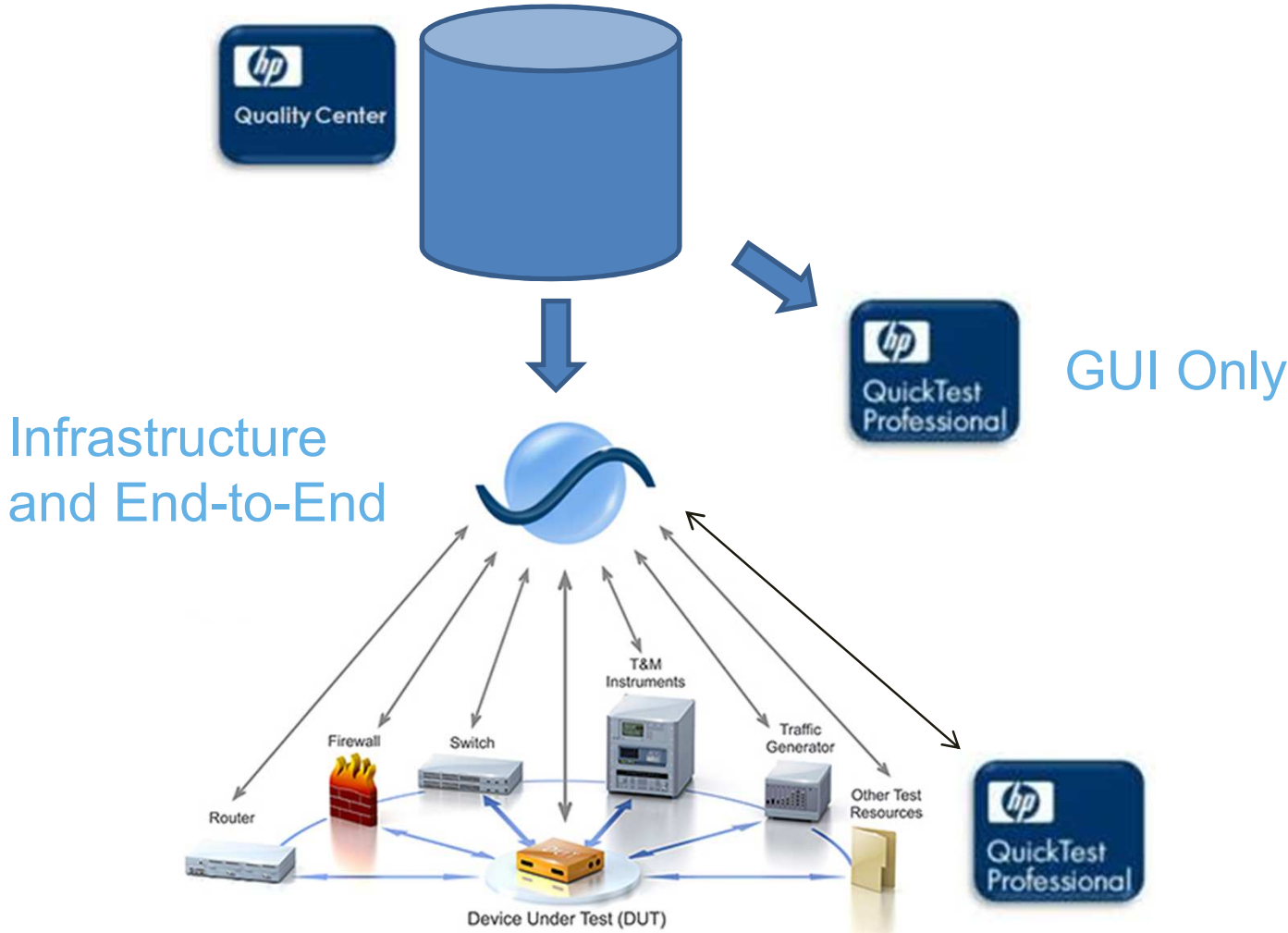
# Infrastructure Testing – Using Best of Breed

- Wide Variety of Interfaces

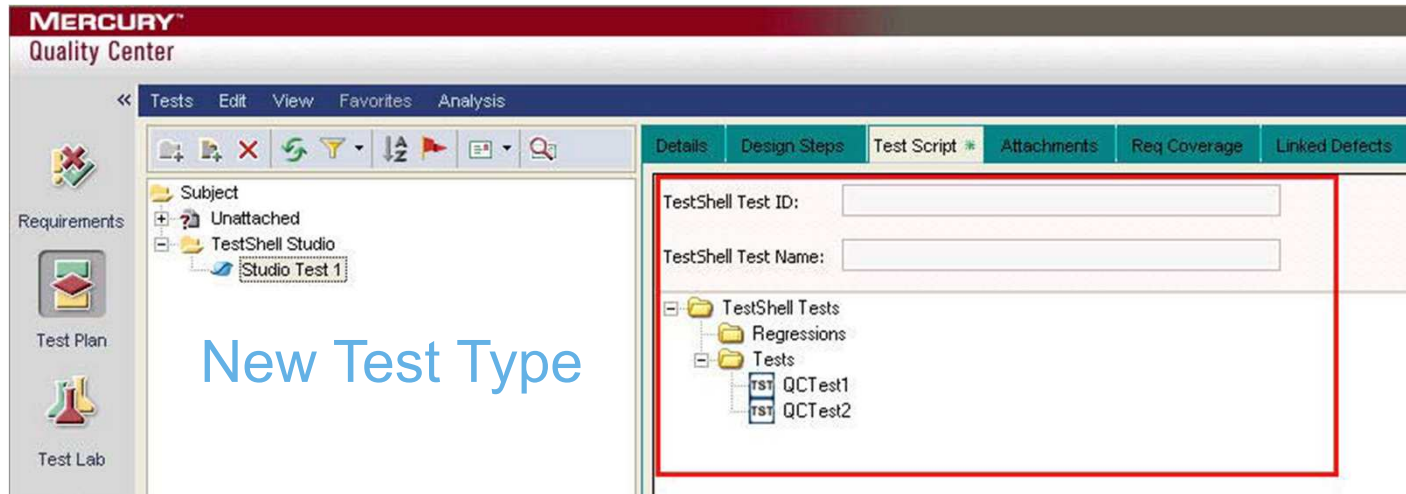
- Command Line Interface (DOS and Linux)  TestShell
- DLL's  TestShell
- Executables  TestShell
- SNMP (get/set and trap)  TestShell
- Terminal: telnet, SSH  TestShell
- ftp  TestShell
- Serial, USB, etc.  TestShell
- VISA (Virtual Instrument)  TestShell
- Scripts – TCL, Java, Python, Perl, etc.  TestShell
- GUI 



# Managed by Quality Center



# Integration of Quality Center and TestShell



The screenshot shows the Mercury Quality Center interface. On the left, there is a sidebar with icons for Requirements, Test Plan, and Test Lab. The main area displays a tree view under 'Subject' with 'Unattached' and 'TestShell Studio' folders. 'Studio Test 1' is selected under 'TestShell Studio'. The right pane shows the 'TestShell Test ID' and 'TestShell Test Name' fields, and a tree view of 'TestShell Tests' containing 'Regressions' and 'Tests' folders, with 'QCTest1' and 'QCTest2' under 'Tests'. A red box highlights the right pane. The text 'New Test Type' is overlaid in blue.

New Test Type



The screenshot shows the Mercury Quality Center Execution Grid. The top tabs are 'Execution Grid', 'Execution Flow', 'Test Set Properties', and 'Linked Defects'. The grid shows a row for '[1]Studio Test 1' with a 'TESTSHELL' test type and a 'No Run' status. A red box highlights the row. A blue callout box with an arrow pointing to the row contains the text 'Double click on Test to configure the run'. The text 'Run from Test Sets' is overlaid in blue.

Run from Test Sets

Double click on Test to configure the run

# Integration of Quality Center and TestShell

The screenshot displays the Mercury Quality Center interface. A 'Test Instance Properties' dialog box is open, showing details for '1Studio Test 1' (Test Type: TESTSHELL). The 'View Runs' section contains a table with the following data:

Run ID	Status	QC ID	Count	Date	Time
Run_5-9_11-56	Passed	qc1	25	5/9/2010	11:57:17 AM

Below the table, a red box highlights a 'View Test Report...' button. A blue arrow points from this button to a 'Preview' window on the right. The 'Preview' window shows a 'Document Map' with 'TestResultUnifiedReport' expanded, displaying the following report details:

Name: QCTest2  
Path: TestShell\Tests\Shared\QC-Test2  
Start Time: 5/9/2010 11:57:09 AM  
End Time: 5/9/2010 11:57:16 AM  
Duration: 00:00:07.166  
Station: QC1  
User: QualiSystems

The 'Executive Summary' section contains a table:

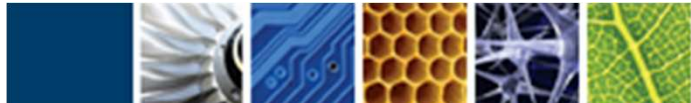
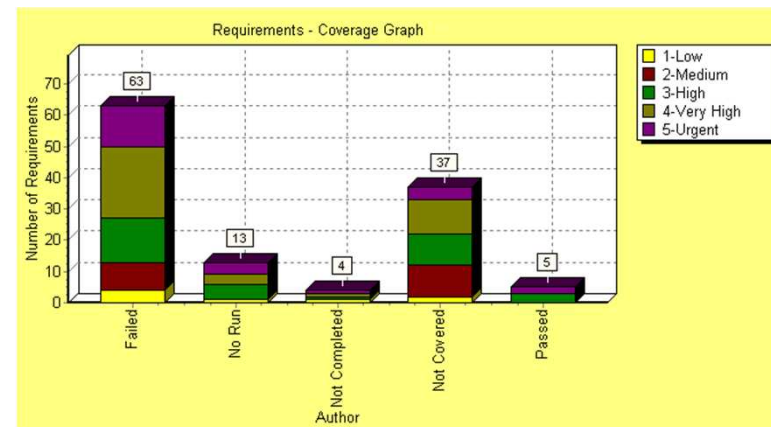
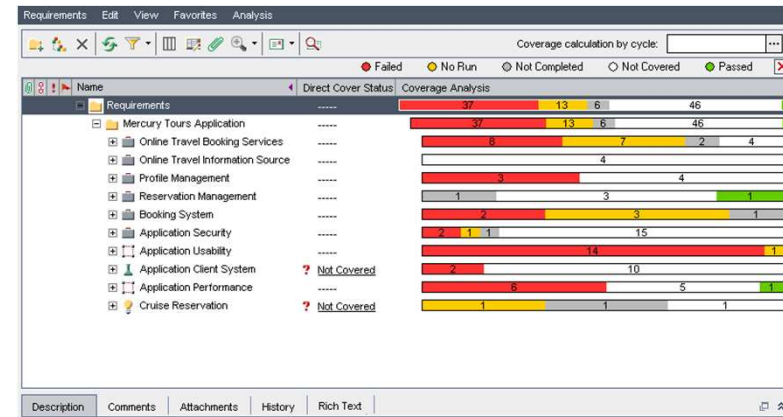
#	Step ID	Name
1	1	<a href="#">Pass1</a>

The 'Errors' section is empty. The 'Test Measurements (1 level drill down)' section is also empty. The status bar at the bottom indicates 'Current Page: 1', 'Total Pages: 2', and 'Zoom Factor: 100%'.

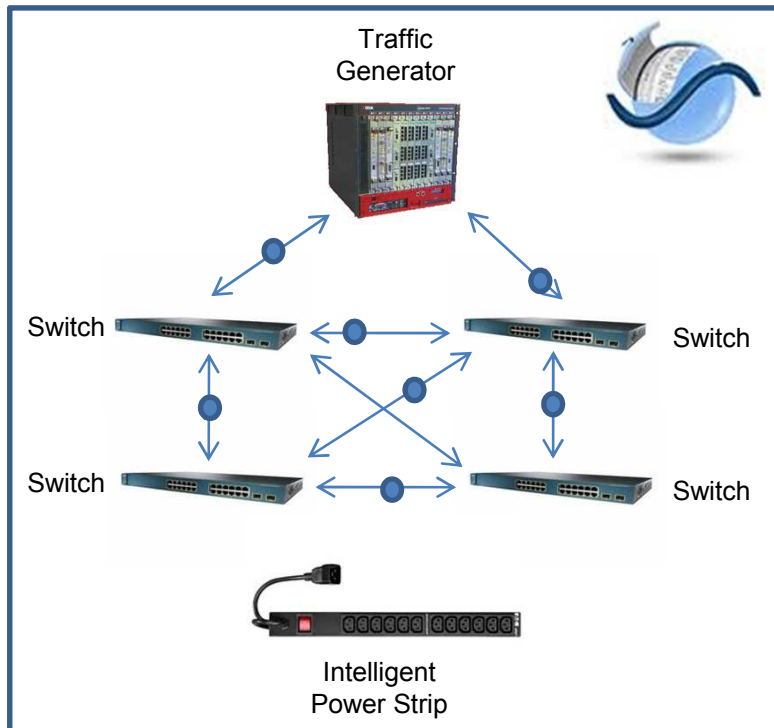
View Results and Reports

# Full System Requirements Traceability

- Requirements Management
  - Software Requirements
  - Infrastructure Requirements
  - System Requirements
- Test Automation
  - Automated GUI Tests
  - Infrastructure Tests
  - End-to-End System Tests

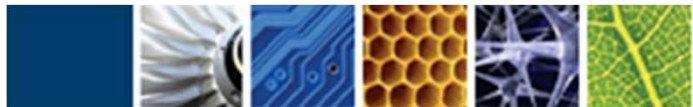
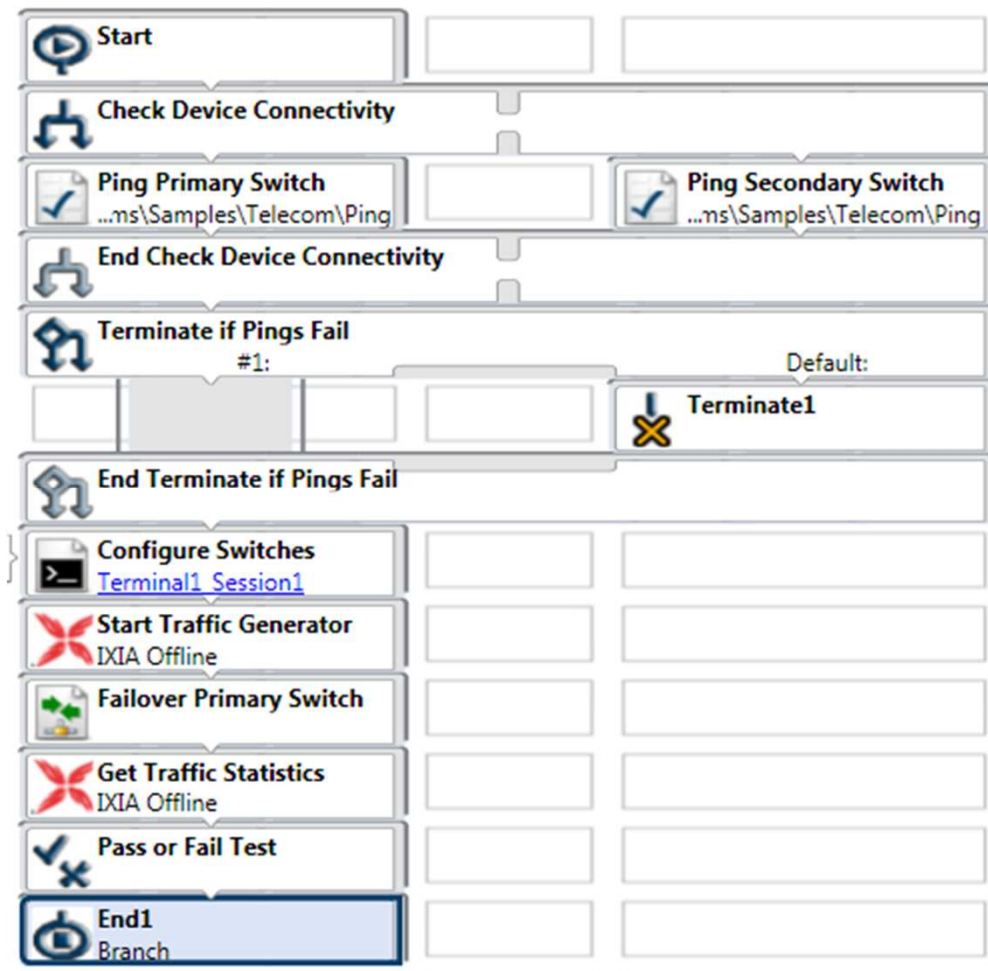


# Example 1 – Network Infrastructure Testing

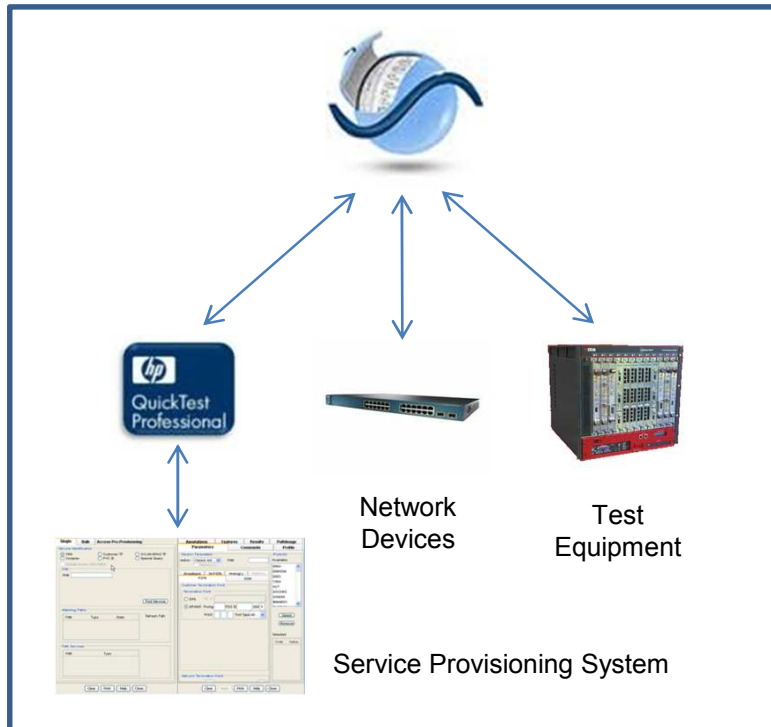


## Scenario

- Failover Switch
- Measure Traffic Loss

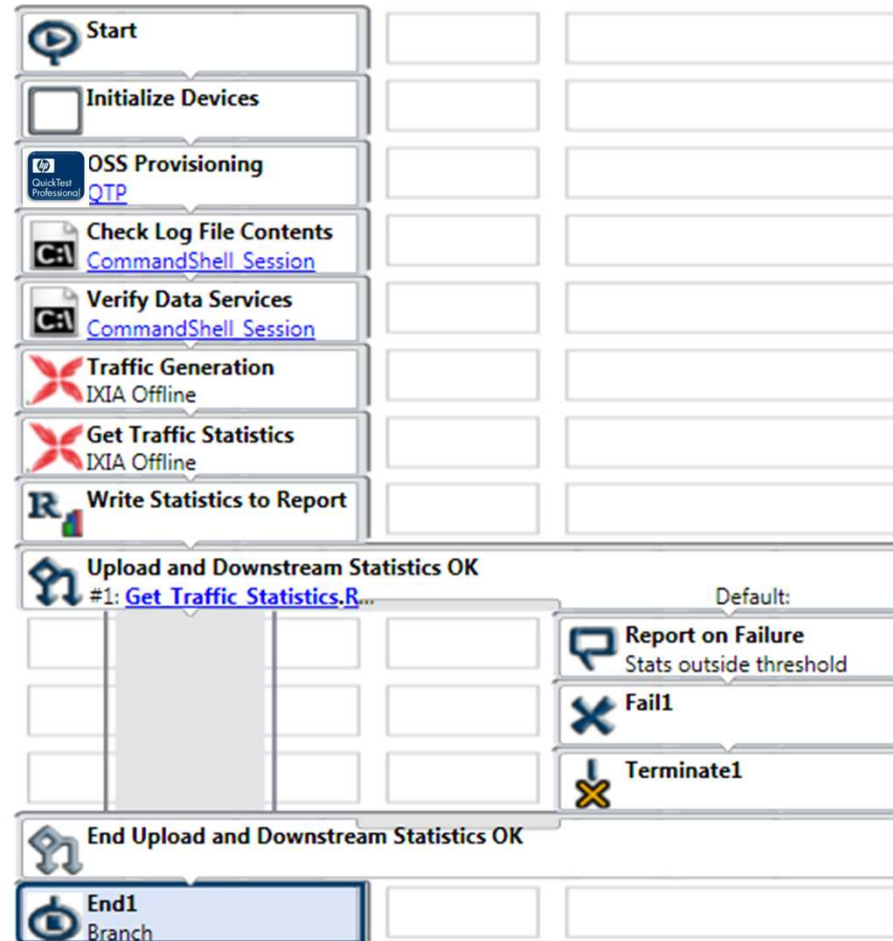


# Example 2 – End to End System Testing



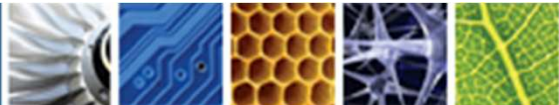
## Scenario

- Telecomms
- Service Provisioning



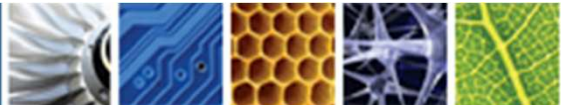
# Proven ROI Examples

- Increase in Equipment Utilization
  - Traffic generator **usage increase** X 3, NEM (Data Center)
  - Multi-site **time zone sharing** of DUTs usage increase X 2, NEM (Switch)
- Increase in Lab Performance
  - Topology **setup duration** reduced from 3 days → 20 minutes, SP
  - Test bed **validation duration** reduced from 4 hours → 10 min, NEM (Telepresence)
- Significant Test performance Increase
  - **Full regression** cycle 16 days → 1 night, NEM (Video)
  - Single **test cycle** 2 Months → 2 days, Electronics (SSD)
  - **Engineering Students** creating all automation, NEM (LTE)



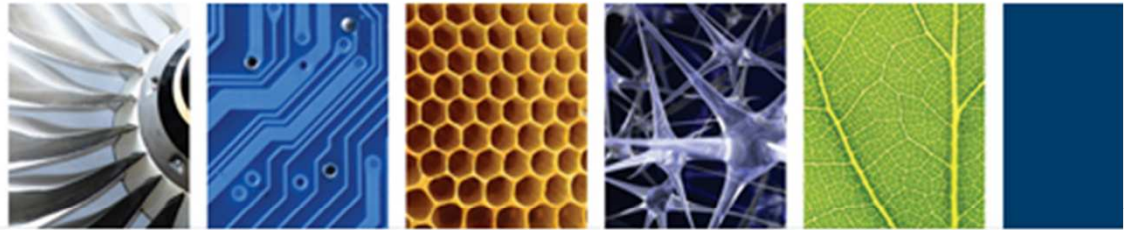
# Summary

- IT Systems and Devices Today
  - Users are more demanding than ever
  - Applications and devices are totally dependent on infrastructure
- Infrastructure Testing
  - Mostly Manual
  - 10-15 years behind Application Testing
  - Technically challenging
- QC + QTP + TestShell = Complete Integrated Solution
  - Best of breed tools
  - Drives GUI and many forms of non-GUI interfaces
  - Infrastructure and End-to-End System Testing
  - Integrated Test Lab and Environment Management



# QualiSystems

Thank you



Visit our website:  
[www.qualisystems.com/demo](http://www.qualisystems.com/demo)

# QualiSystems – Company Overview

- International Software Company (2004)
  - Santa Clara, USA
  - London, UK
  - Munich, Germany
  - Tel-Aviv, Israel
  - Shanghai, China
  - Singapore, Singapore
  - Channels: Japan, Taiwan, Australia, Korea, India



- Customer First Culture

- Aryeh Finegold President

- Former President and Founder of Mercury (now HP)



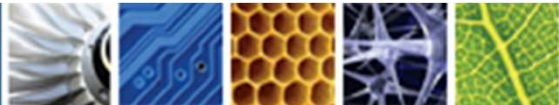
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- TestShell

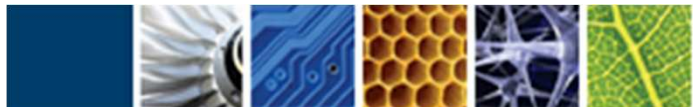
- Lab Management, Device Provisioning & Test Automation Software



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# A few of our customers



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