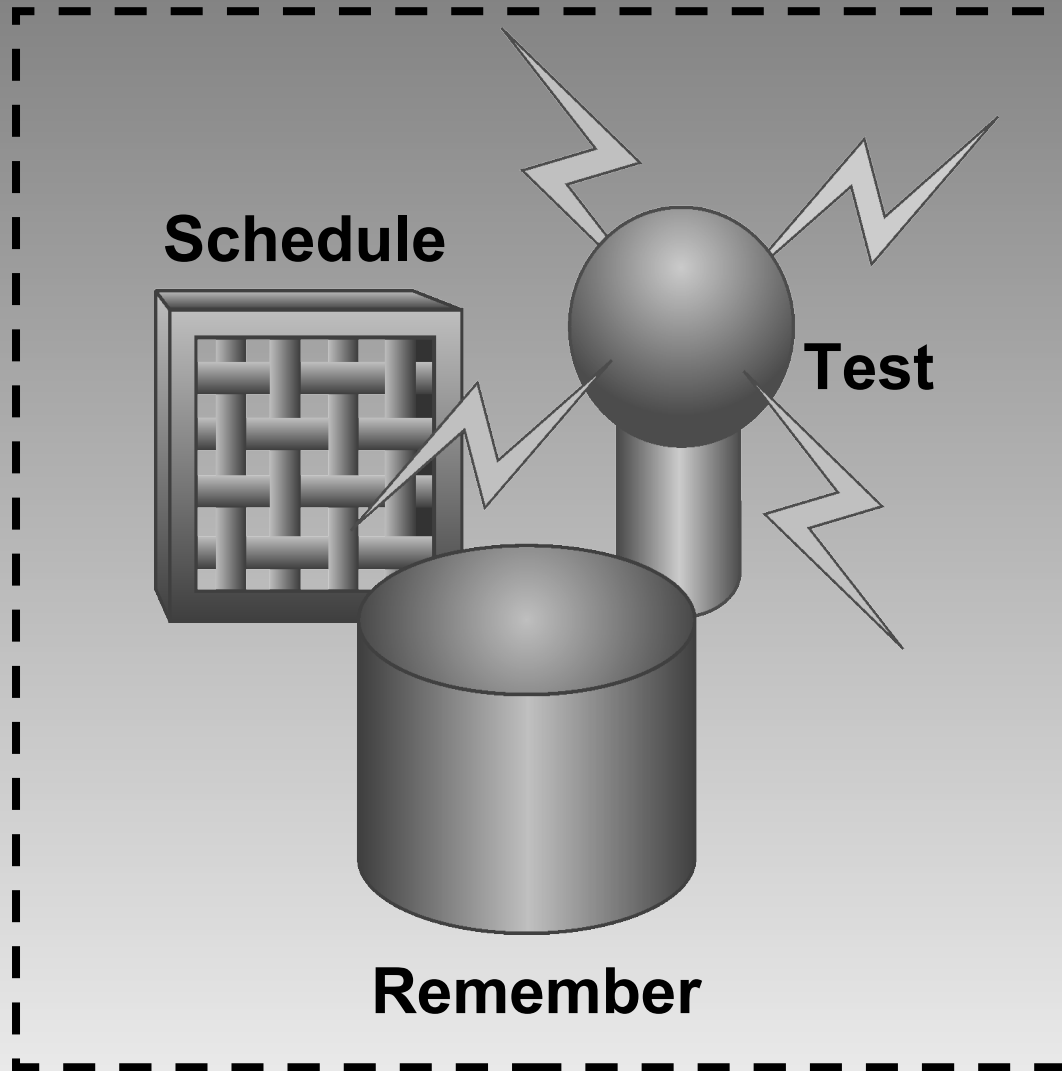


Product Guide

An Introduction to:

| | |
|--------|---|
| UTP | Universal Testing Platform |
| UTP+ | Universal Testing Platform Plus |
| UTCP | Universal Testing & Control Platform |
| UTCP+ | Universal Testing & Control Platform Plus |
| IMPACT | Integrated Monitoring, Provisioning, And Coordinated Testing |

Integrate



Remotely Test Any Networked Equipment

All T-Synergy Platforms include:

_Full Test Head Capability

- Automated Testing
- Alarm Export

_Scheduler

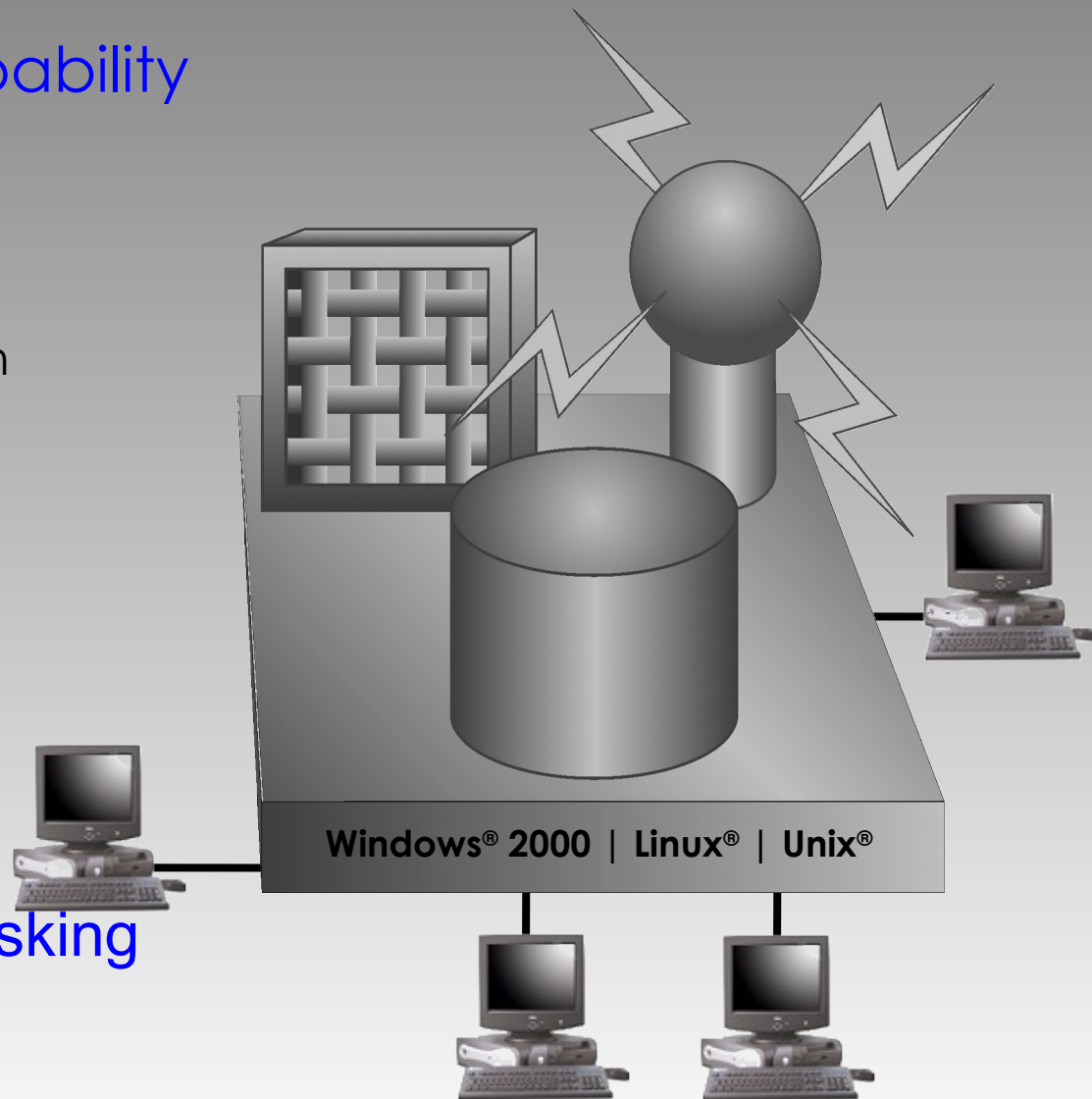
- Unattended Operation
- Once or Repeatedly

_Database:

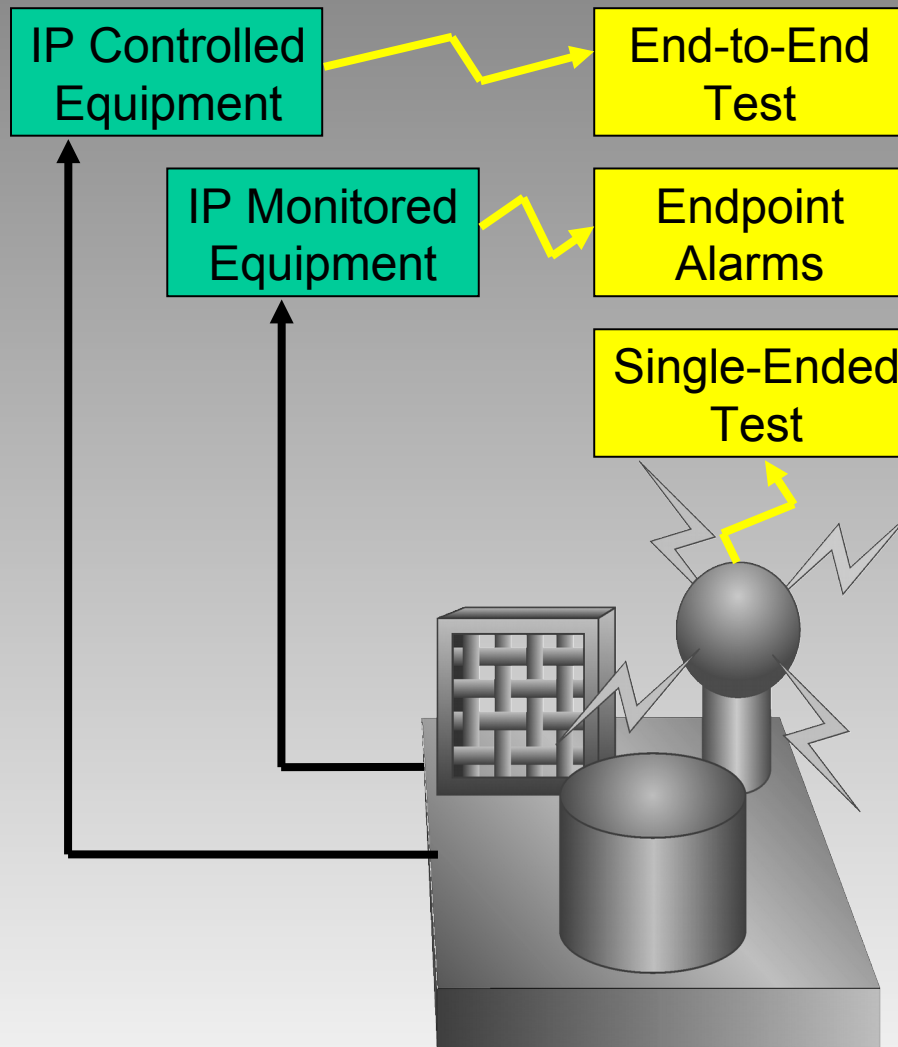
- Equipment
- Links
- Equipment History
- Test History
- Test Library

-Multi-User, Multi Tasking

- Resource Balancing
- Java / XML



Equipment & Link Selection

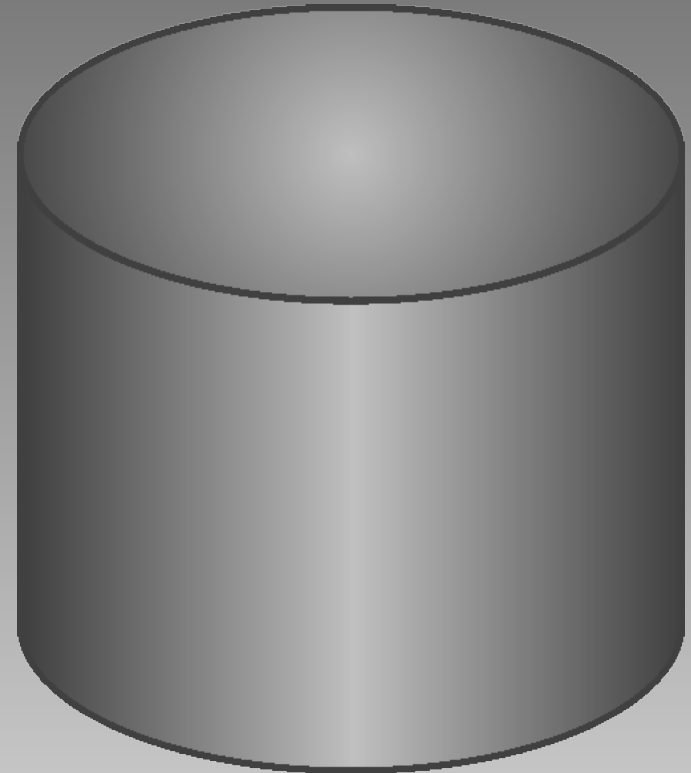
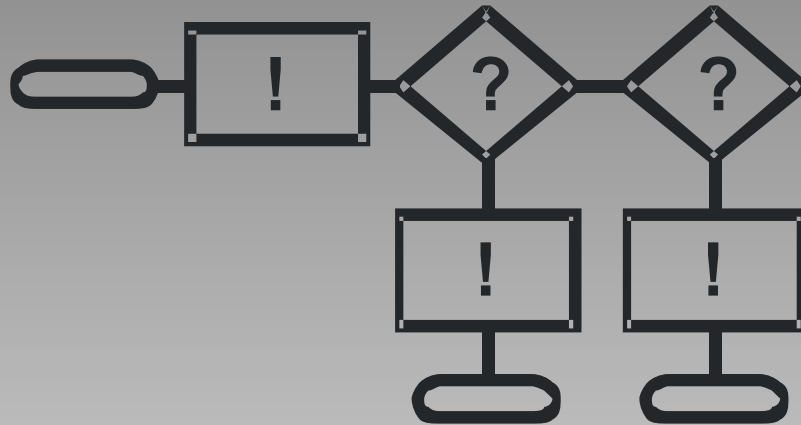


With IP controlled equipment, you can perform end-to-end tests as well as single-ended tests.

Selection:

- Specifies Equipment and/or Links to test
- Determines Networks and Protocols
- Applies appropriate test equipment type(s)

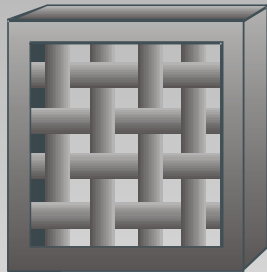
Test Scripts



- Specify which set of tests to run.
- Pre-built test scripts contain multiple tests with branch logic to automate problem diagnosis.
- At the end of a script, the UTP Analyzer will translate the results into probable causes, and suggested actions.

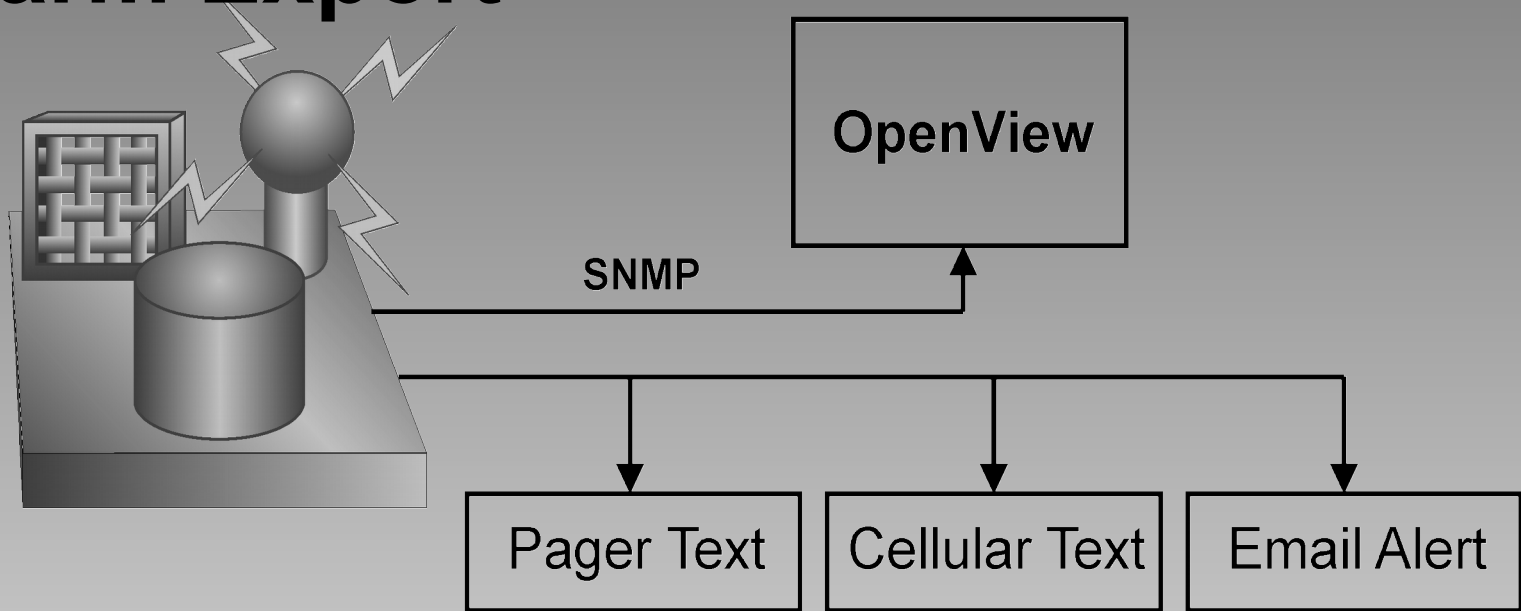
Scheduling

- Run Now, interactively
- Run Once
- Run Hourly
- Run Daily
- Run Weekly
- Run Monthly
- Soak

A screenshot of the 'Set Schedule' dialog box. The dialog has a blue title bar with the text 'Set Schedule' and a close button. It contains several input fields and sections. At the top, there are fields for 'Domain:', 'Next Run:', 'Event Type:', 'Event Name:', and 'Device:'. Below these are two main sections: 'Select Schedule' and 'Data Period'. The 'Select Schedule' section has radio buttons for 'Once', 'Hourly', 'Daily', 'Weekly', 'Monthly', and 'Soak'. The 'Daily' option is selected, and its sub-section shows checkboxes for days of the week: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday. The 'Weekly' option is also visible with a dropdown for 'Monday'. The 'Soak' option has an 'every' field set to '05' minutes and 'from' and 'until' date-time fields. The 'Data Period' section has 'From' and 'To' date-time fields and two radio buttons: 'Increment for cyclic reports' and 'Increment for cumulative reports'. Below this is a 'Resource Failure' section with radio buttons for 'Queue for resources', 'Inquire', 'Cancel', and 'Reschedule, delay' (set to '07' minutes). At the bottom of the dialog are two buttons: 'Set Schedule' and 'Cancel Event'.

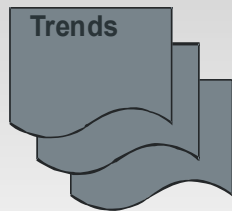
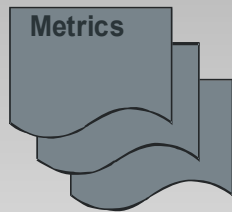
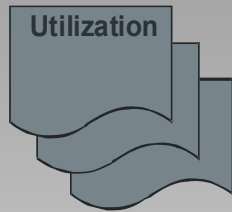
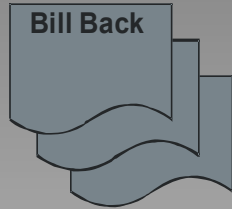
Schedule assurance tests before using components to insure equipment and link availability

Alarm Export



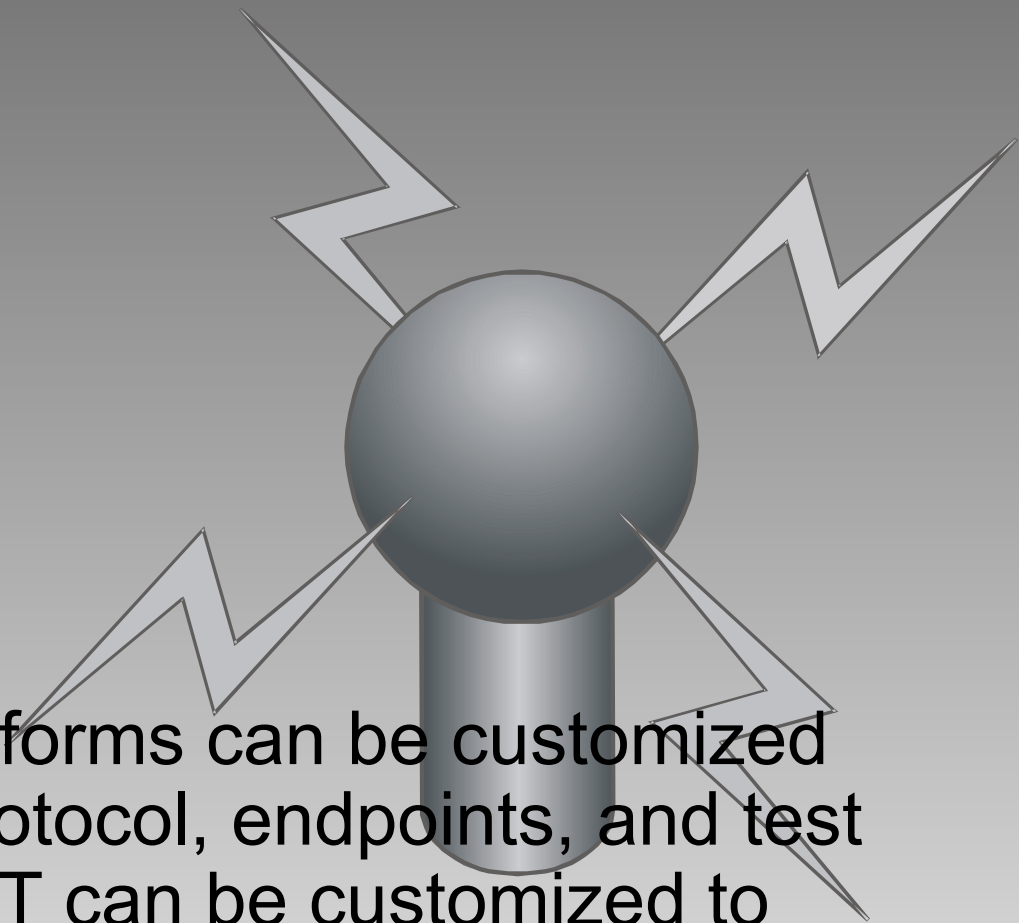
- **SNMP Out**
 - We'll **tell** HP OpenView when we find something wrong during a test
- **Text Out**
 - We'll even send pager text, cell phone text, or email wherever it needs to go for rapid response and repair

Reporting



- Billing & Bill Back Data
 - Time & Materials
 - Incident Peg Counts
- Test Head & Link Utilization
- Metrics
 - Mean Time Between Failures
 - Mean Time to Repair
 - User Error Analysis
- Trend Analysis
 - Proactive Testing
 - Preventive Maintenance

Customization



T-Synergy test platforms can be customized for any network, protocol, endpoints, and test equipment. IMPACT can be customized to match existing troubleshooting and repair procedures or for operation inside existing systems.

Product Line

Product Line

UTP

The **Universal Test Platform (UTP)** is intended for a single-vendor (OEM), single-product system. The UTP provides the following abilities:

- Database holds a single domain of registered endpoints
- Test any registered endpoint device
- Multiple simultaneous users with shared resources and load balancing
- Multiple test heads of a single type
- Automated test scripting
- Pass on an alarm to an outside monitoring program such as OpenView when a test indicates device failure
- System raw data and reports.

Product Line

UTP+

The **Universal Test Platform Plus (UTP+)** is intended for embedment of automated testing in the customer's system. UTP+ provides all UTP functions, "Plus" the following abilities:

- Receive an external request to test a specific device, run tests automatically, and report the results of the tests back to the requestor.

Product Line

UTCP

The **Universal Test & Control Platform (UTCP)** is intended for multiple vendor (Enterprise) and multiple customer (VAR) systems. The UTCP provides the following additional abilities:

- Multiple domains, completely separated
- Multiple types of test equipment by multiple manufacturers
- Monitor one or more domains for one or more customers (or resellers) based on status and alarms received from an external source.
- Control devices that have an open API and network connectivity.
- Control monitoring devices associated with network devices.
- Graphic representation of devices for status and selection by geographic map (GeoMap), organizational chart (OrgChart), network diagram (NetDiag), Status Grid, Tabular Alarms List, and Tabular Calls List in addition to the Selection Tree.
- Restriction of individual users to specific spans-of-control.
- UTCP Test console can appear inside another application.
- Larger capacities.

Product Line

UTCP+

The **Universal Test & Control Platform Plus (UTCP+)** is intended for professionally managed systems that include tracking tickets. UTCP+ provides all UTCP functions, “Plus” the following abilities:

- Exposure of the Tracking Ticket Interface Application Programming Interface for integration with existing tracking or ticketing systems.

Product Line

IMPACT

IMPACT is intended for **carrier-grade** network management and diagnostic systems for Service Providers (SP). IMPACT provides the following abilities:

- Customized engineering, logic, interface, API's, and embedment to meet provisioning, testing and monitoring needs.
- Ultra large capacities.

Product Line

Features by Product

| Feature | UTP | UTP+ | UTCP | UTCP+ | IMPACT |
|---|-------|-------|-------|-------|--------|
| Multi-user | Yes | Yes | Yes | Yes | Yes |
| Multiple test heads | | | | | |
| of single type | yes | yes | Yes | Yes | Yes |
| of several types | | | Yes | Yes | Yes |
| Scripted testing | Yes | Yes | Yes | Yes | Yes |
| Outbound alarms | Yes | Yes | Yes | Yes | Custom |
| Segregated multiple domains | | | Yes | Yes | Custom |
| Raw data & reports | Yes | Yes | Yes | Yes | Yes |
| by domain | | | Yes | Yes | Custom |
| across multiple domains | | | Opt | Opt | Custom |
| ad hoc reporting | | | | | |
| by GeoMap, OrgChart, NetDiag, Tabular, Grid | | Yes | Yes | Yes | Custom |
| by Calls | | | | Yes | Custom |
| Exposed testing API (no screens) | | | | | |
| Exposed tracking ticket API | | | Yes | Yes | Custom |
| Control network devices | | | Yes | Yes | Custom |
| Control end-point monitoring devices | | | | | |
| Graphic status and device selection | | | Yes | Yes | Custom |
| Span-of-Control for users | | | | | |
| Scalability | | | Opt | Opt | Custom |
| | | | Yes | Yes | Custom |
| | Small | Small | Large | Large | Huge |

Product Line

Permission Groups by Product

| Permission Group | | UTP | UTP+ | UTCP | UTCP+ | IMPACT |
|---|---|-----|------|------|-------|--------|
| Monitoring (status) | by GeoMap, OrgChart, NetDiag, Tabular, Grid | | | Yes | Yes | Custom |
| | by Calls | | | Opt | Opt | Custom |
| Testing (including scripted tests) | | Yes | Yes | Yes | Yes | Custom |
| Configuration | Images & Maps | | | Yes | Yes | Custom |
| | Devices & Links | Yes | Yes | Yes | Yes | Custom |
| Test script administration (including script editing) | | | | Yes | Yes | Custom |
| System Administration | import status | | | Yes | Yes | Custom |
| | ad hoc reporting | | | Opt | Opt | Custom |
| | export alarms & service state, system reporting, data & report offloading, database import & export, device auto-detect | Yes | Yes | Yes | Yes | Custom |
| Observation & Training | | | | | | Custom |
| Supervision | | | | | | Custom |
| Service Provisioning | | | | | | Custom |
| User Administration | | Yes | Yes | Yes | Yes | Custom |

Introduction

Introduction

Permission Groups

Each user is granted permission to use one or more groups of features. Permission for different groups of features defines user jobs and restricts each user to those screens necessary to perform his or her job. Each separate group of interface screens is called a permission group. The available features groups, and the screens within some groups, depend on the specific product line variation.

1. Monitoring & Testing (General Users)
 - User can Monitor device status (UTCP, IMPACT) and Test devices (all) for a part of the network.
1. Configuring
 - User controls mapping (UTCP, IMPACT), directories, devices, and links (all) for part of the network.
1. Test Administration
 - User controls test scripting (UTCP, IMPACT) and default scripts (all) by equipment type for part of the network.

Introduction

Permission Groups

1. System Administration
 - User controls status import (UTCP, IMPACT), system reporting, data & report off-loading, alarm export, service state export, data import & export, and device auto-detect (all) for a part of the network.
1. Observer/Trainer (IMPACT only)
 - User can Monitor other users.
1. Supervisor (IMPACT only)
 - User can monitor other users, take over scheduled tests, and override some actions.
1. Service Provisioning (IMPACT only)
 - User can perform all administrative service provisioning tasks.
1. User Administration
 - User adds/changes/deletes users and sets each user's permissions and each user's base directory for all or part of the network. The user's base directory controls what parts of the network the user can access (span-of-control).

Each user can be assigned one or more permission groups and the features will be active simultaneously.

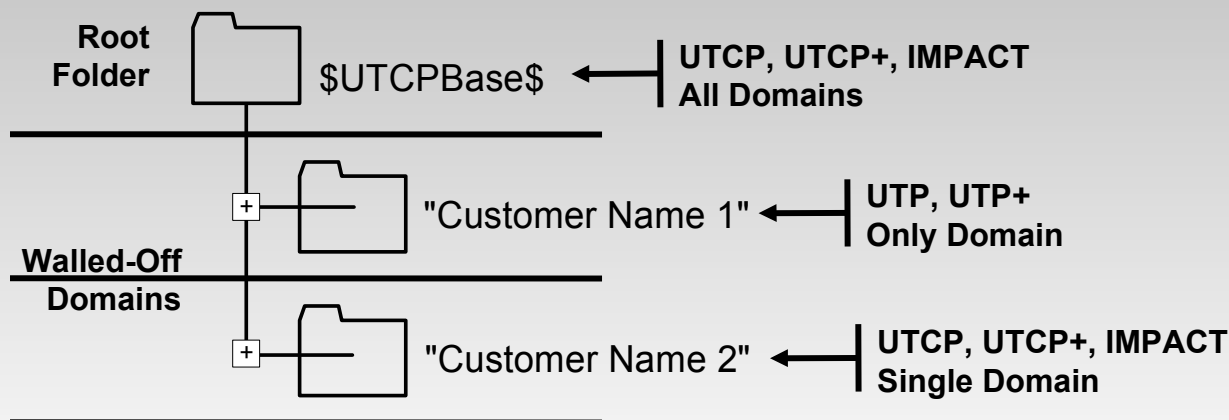
Introduction

Domains—Partitioned System

The T-Synergy architecture is based on a partitioned hierarchy of folders. The “root” folder is called the UTCPBase. First-level subfolders are the equivalent of walled-off partitions or domains. Information for reports is kept separately by domain. Resource folders and utility programs are kept separately by domain. Device pointers cannot cross domain boundaries so devices cannot be shared between domains. Most users can work only within one domain. The first level folders (domains) represent “customers” or “sub-networks” or even “resellers” as may be appropriate to the specific system.

UTP and UTP+ are single-domain systems.

UTCP, UTCP+, and IMPACT are multi-domain systems.

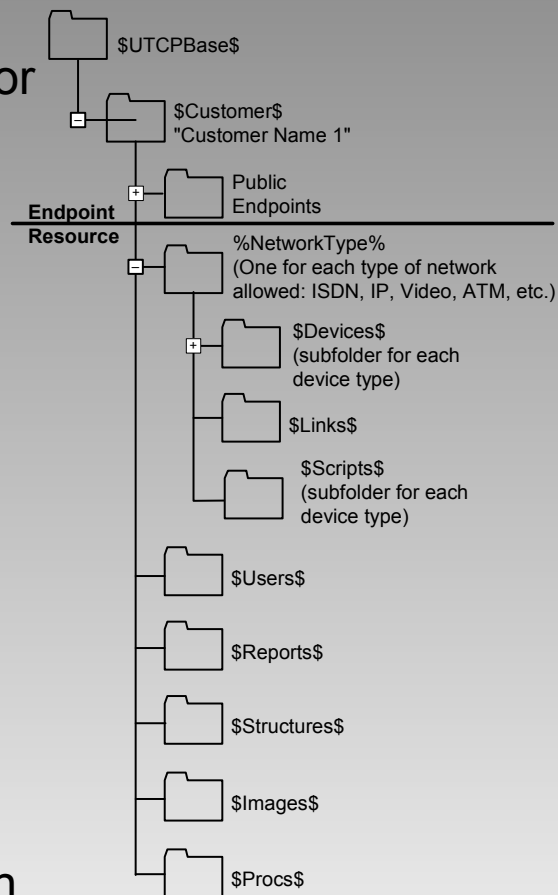


Introduction

Endpoint & Resource Folders

Each “customer” or “sub-network” or “reseller” folder is the equivalent of a walled-off partition or domain. Within the domain are second-level folders that are either “Endpoint” or “Resource” folders.

- Endpoint folders are created by the Configuration process. They are one (or more) logical representation(s) of the sub-network with pointers to the actual devices and links. Endpoint folders are visible whenever they can be used to select, administer, or test end points.
- Resource folders hold actual devices and links, reports, logs, test scripts, procedure libraries, and other “partition-wide” data. Resource folders are available to users with the appropriate permission groups enabled and in use.



Introduction

End-Point Base Directory

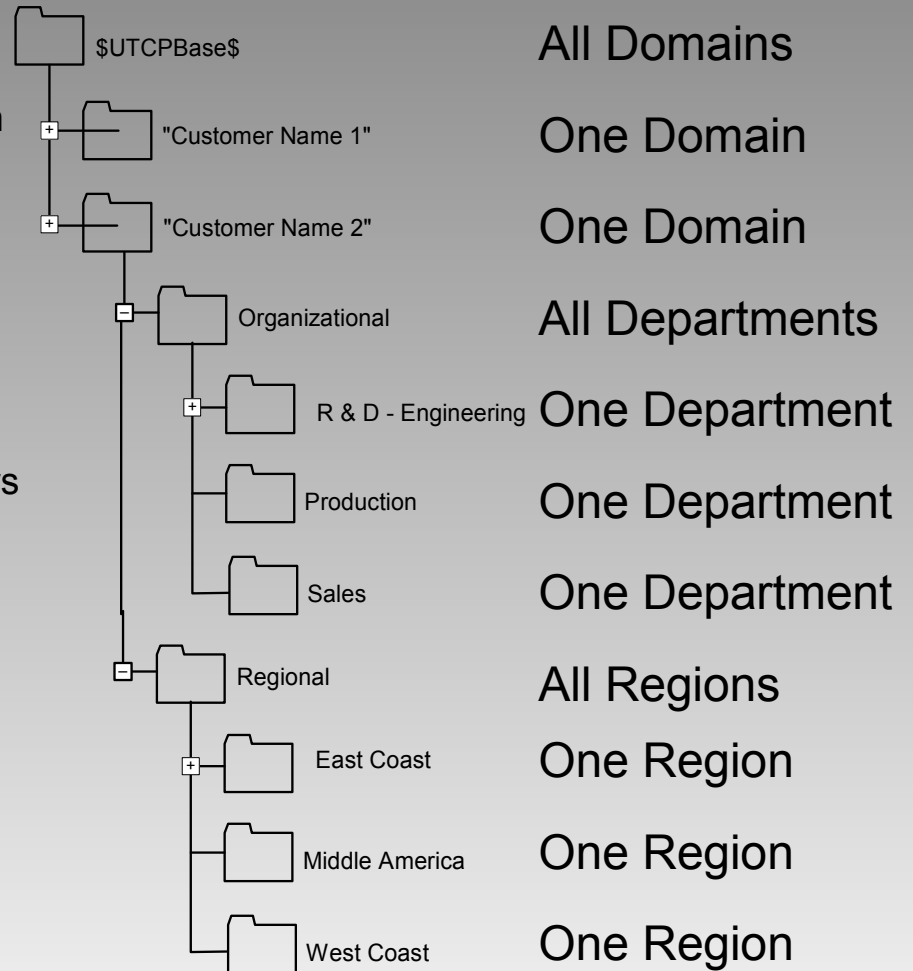
Endpoint directories are used only for end point device selection and endpoint status display (color of the folder is highest alarm state lower down in hierarchy).

Directory structure is completely arbitrary. It is created dynamically by the Configuration users. Folders can contain shortcuts to other folders.

Pointers (shortcuts) to the same device in more than one branch of a hierarchy allows multiple geographic, organizational, and network alternatives for device selection.

Monitoring & Testing and Configuration users are assigned a base directory at some level in the partition endpoint folder hierarchy.

Anything outside the user's base directory is inaccessible to that user. This enforces span-of-control.



Introduction

Resource Directories

Resource directories have fixed names and hierarchies. They exist for special purposes within each domain. Each Resource directory displays when it is useful because the user has permission for, and is using the associated features.

- **Users** – Shows alone when User Administration features are active. Stores user profile information for the domain.
- **Network&Protocol** – Some sub-folders show with Configuration features (endpoint folders also show), other sub-folders show with Test Administration features (endpoint folders do not show). Sub-folders store device and link profiles, test script library, default scripts, procedures libraries, etc.
- **Logs&Reports** – Implied (does not actually show) when System Administrator is using reporting features. Stores logs and reports.

Introduction

User Administration

The **User Administration** permission group includes:

- Add/change/delete Users
- Set each User's permissions
- Set each User's base directory (span-of-control)
- Set each User's initial password
- Set each User's initial screen
- Set each User's initial selected directory

The **User Administrator**

- Cannot change his own base directory or privileges

Introduction

System Administration

The **System Administration** permission group includes:

- Schedule report creation and offload of raw data and reports
- Ad-hoc reporting option (UTCP, IMPACT)
- Administer outbound alarms and outbound service state
- Administer inbound status (UTCP, IMPACT)
- Administer inbound and outbound CSV files (database load and dump)
- Administer device auto-detect

Introduction

Configuration

Within span-of-control, the **Configuration** permission group includes:

- Add/change/delete endpoint folders
- Add/change/delete endpoint devices and links
- Add/change/delete auxiliary devices (switches, gateways, etc.)

Additionally, for UTCP and IMPACT:

- Add/change/delete images (maps and network diagrams)
- Associates images with directories, folders, and devices.

Introduction

Test Administration

Within span-of-control, the **Test Administration** permission group includes:

- Add/change/delete test scripts and steps (UTCP, IMPACT)
- Assigns default scripts by device class (all)

Introduction

Monitoring & Testing

Within span-of-control, the **Testing** permission group includes:

- Runs interactive diagnostic tests of registered endpoints
- Runs preventive and verification (scheduled) tests of registered endpoints
- Can search device history, alarm history, and test history files for useful diagnostic or repair information

For UTCP and IMPACT, the **Monitoring** permission group adds:

- Monitors device status by GeoMap, OrgChart, NetDiag, Status Grid, Tabular Alarm List, and Call List (optional) as applicable.

Graphical User Interface

Graphical User Interface

Consistent Look and Feel

System Identification (from .INI file) | Screen Identification | Up a Level Button | Active Folder name — color indicates highest alarm state of any device farther leafward

T-Synergy Universal Test & Control Platform — Common Areas on Initial Screens

File Edit View Options Help

Filters, Settings, & Control Buttons

Tree (Selection) Pane

Auxiliary Controls

Primary Working Pane

Secondary List Pane

User Selectable Columns

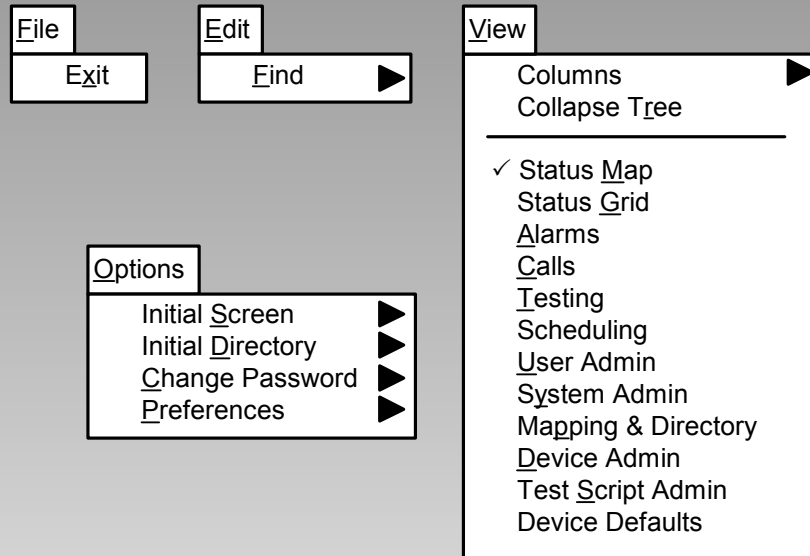
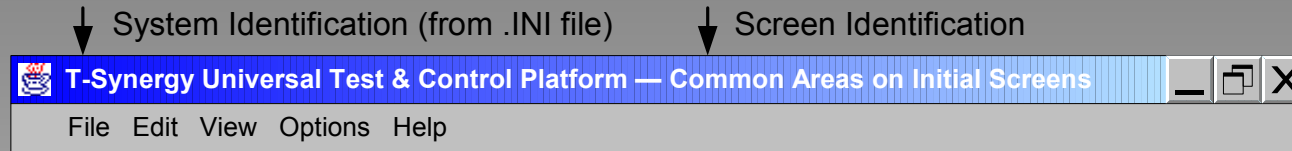
Open Status Message Review Window | Most Recent Status Message | Do the Obvious Thing with the Selected Item Button

| Device Type | Device ID | Device Name | Make & Model | Location | Service State | Device Alarm | User Column 1 | User Column 2 |
|-------------|---------------|-------------|--------------|----------|---------------|--------------|---------------|---------------|
| Codec | DC-CODEC-0041 | Conf 3 | Tand 600 | DC-C1-R3 | In Service | ISDN Port 3 | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

All of the main screens that you work from have a similar format.

Graphical User Interface

Titlebar & Menubar



Edit menu:

- Searching for specific folders or devices

View menu:

- User selection of columns (and column order) in the list window
- Selection of screens (functions) matching the user's privilege
- Other functions as required

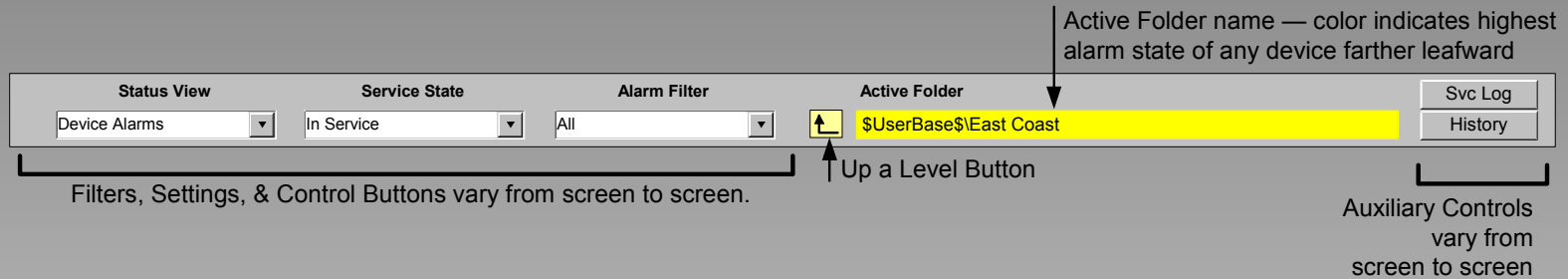
Options menu:

- User selection of login screen
- User selection of login directory
- Change Password
- Set personal preferences

The same screen layout is used for both the Universal Test Platform (UTP, UTP+) and the Universal Test & Control Platform (UTCP) — UTCP has additional screens. IMPACT may have additional customized screens.

Graphical User Interface

Controls Area

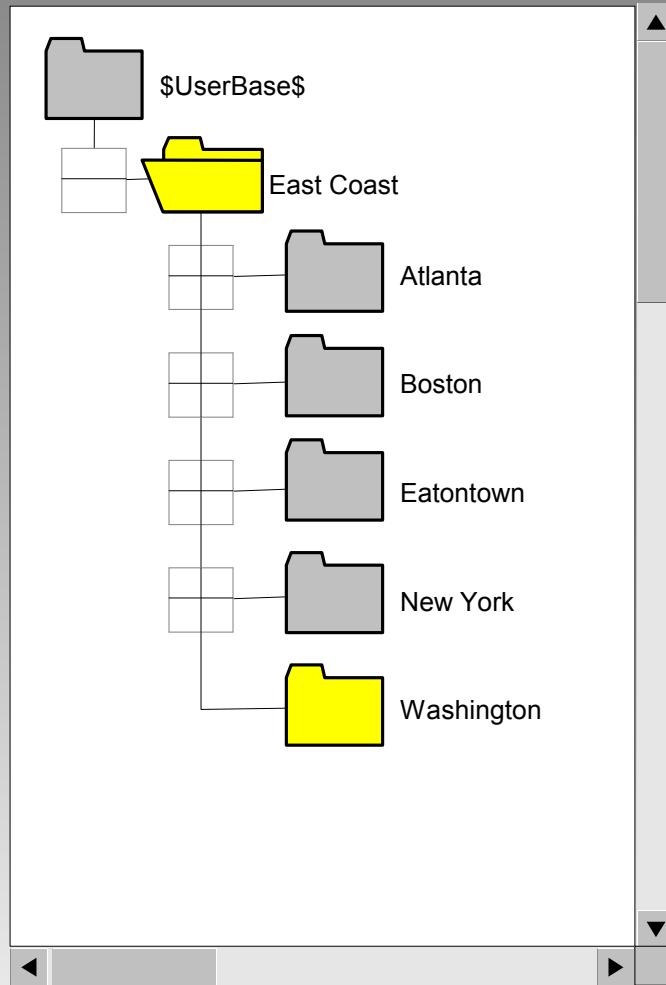


The **Controls Area** is just below the menubar.

- The left side contains the filters, settings, and control buttons appropriate to the screen function.
- The Active Folder name is relative to the user's base folder. The color (UTCP, IMPACT) indicates the highest alarm state of any device or link farther down the hierarchy.
- The up a level button in front of the Active Folder name moves the folder selection upward one level.
- The right end contains auxiliary controls on some screens.

Graphical User Interface

Tree Selection Pane



The **Selection Tree** is present on all basic screens. Selecting a folder limits the scope of the screen to that folder and subfolders.

- The user's endpoint scope is limited to the user's (administered) base directory and its subdirectories. For UTCP and IMPACT, the color of each folder indicates the highest alarm state of any device lower in the hierarchy.
- For some administrative functions, system-level resource folders are used. Within each "customer" or "sub-network" domain, there are private, predefined resource folders.
- Each device can appear in more than one branch of the endpoint directory. Within the user's base directory, there can be branches organized by geographic location, by organizational structure, or even by floor plans or network layouts. The same user can have access to all of these subdirectories.

NOTE: The size of items in the Selection Tree has been increased for clarity throughout this guide.

Graphical User Interface

Working Pane

The screenshot displays a graphical user interface for a 'Working Pane'. At the top, there are three tabs: '1 Setup', '2 Steps', and '3 Save'. Below the tabs, there is an input field for 'ISDN' and a 'Step Count' field set to '5'. A list of action steps is shown, with '1 First ActionStep' highlighted in cyan. Below the list, there are five tabs: '1 ActionSteps', '2 Inputs', '3 PreConditions', '4 Command', and '5 PostConditions'. The '1 ActionSteps' tab is active, showing a list of action steps: 'First ActionStep', 'Second ActionStep', 'Third ActionStep', 'Fourth ActionStep', and 'Fifth ActionStep'. The 'First ActionStep' is highlighted in cyan. To the left of the list are two buttons: '^' and 'v'. To the right of the list are five buttons: 'Insert New Step', 'Append New Step', 'Load Step', 'Delete Step', and 'Save Step As'.

The **Working Pane** is present on all basic screens. This pane contains most of the controls and fields that you will need to accomplish a specific task.

- Tabs are used for panels that require more space or have different functions on each tab.
- Tabs are also used for step-by-step operations where the tabs are numbered and/or enabled in sequence.

Graphical User Interface

List Pane

| Device Type | Device ID | Device Name | Make & Model | Location | Service State | Device Alarm | User Column 1 | User Column 2 |
|-------------|---------------|-------------|--------------|----------|---------------|--------------|---------------|---------------|
| Codec | DC-CODEC-0041 | Conf 3 | Tand 600 | DC-C1-R3 | In Service | ISDN Port 3 | | |
| | | | | | | | | |
| | | | | | | | | |

Test Selected

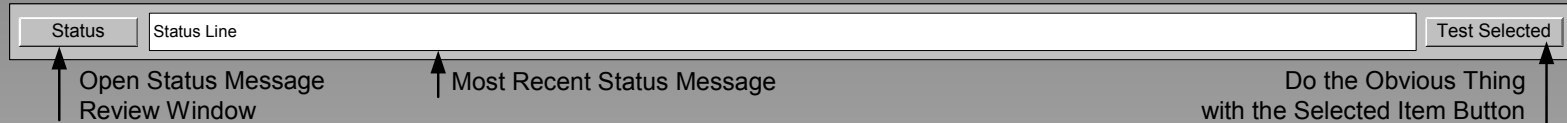
Do the Obvious Thing
with the Selected Item Button

The **List Pane** is present on many basic screens. (It's blank when it's not needed). This pane provides a list to select items from.

- When a list is present, use **View>Columns** to select among the available columns and set the order of display.
- Select any column and click on it to sort by that column. Click again to sort in reverse sequence.
- Drag the right side of any column to make it larger or smaller.
- When items in the list have alarms, the background color of the appropriate alarm cell will indicate the level of the alarm.
- The **Test Selected** or **View Selected** button at the right end of the Status Area allows you to process the item(s) selected in an appropriate way. It is generally the same as double-clicking on the item.

Graphical User Interface

Status Area



The **Status Pane** is present on all basic screens.

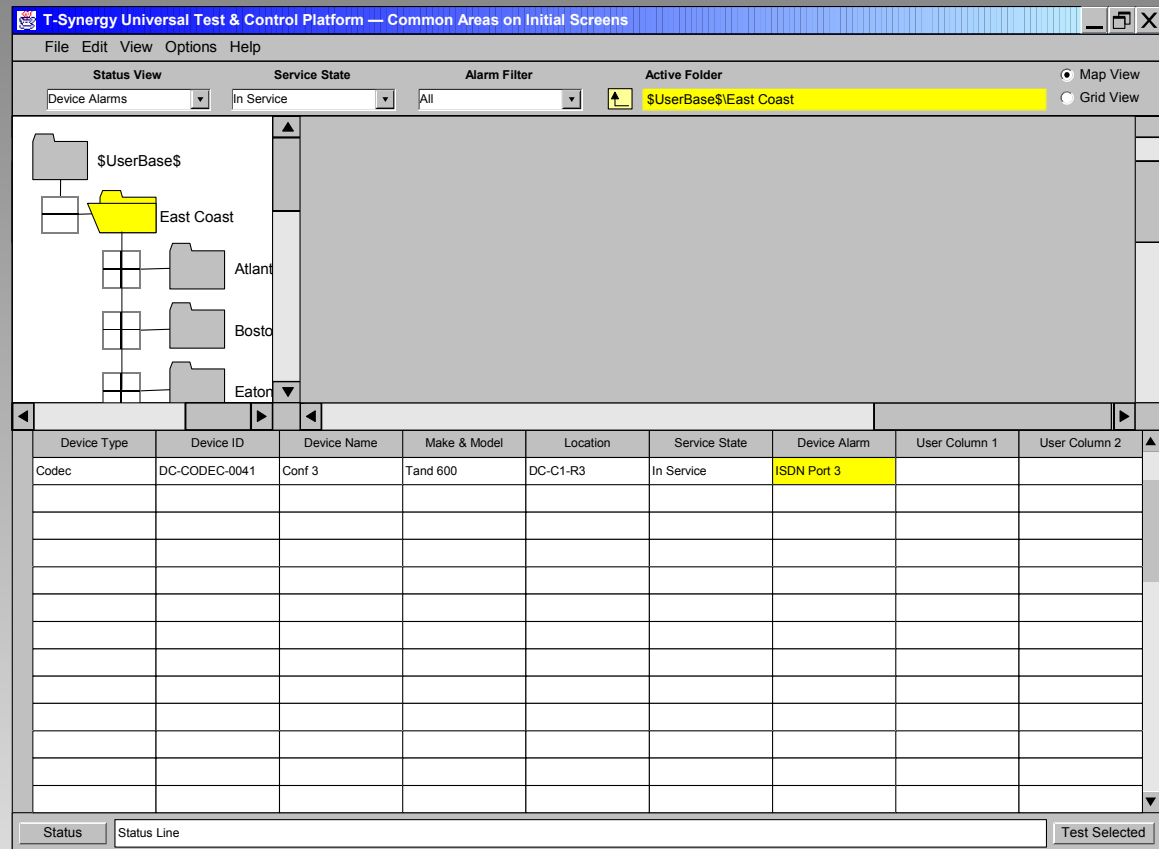
- The most recent status message tells you what is happening or has just happened.
- The **Status** button at the left end opens a window where you can review all the status messages since you logged on (including changing screens).
- The **Test Selected** or **View Selected** button at the right end allows you to process the item(s) selected in the **List Pane** just above in an appropriate way. It is generally the same as double-clicking on the item.

Graphical User Interface

Changing Pane Sizes

Change the width of the Selection Tree and Working panes by dragging the divider between them left or right.

Change the height of the List pane by dragging the divider between it and the Tree and Working panes up or down.



User Administration

Product Line

Permission Groups by Product

| Permission Group | | UTP | UTP+ | UTCP | UTCP+ | IMPACT |
|---|---|-----|------|------|-------|--------|
| Monitoring (status) | by GeoMap, OrgChart, NetDiag, Tabular, Grid | | | Yes | Yes | Custom |
| | by Calls | | | Opt | Opt | Custom |
| Testing (including scripted tests) | | Yes | Yes | Yes | Yes | Custom |
| Configuration | Images & Maps | | | Yes | Yes | Custom |
| | Devices & Links | Yes | Yes | Yes | Yes | Custom |
| Test script administration (including script editing) | | | | Yes | Yes | Custom |
| System Administration | import status | | | Yes | Yes | Custom |
| | ad hoc reporting | | | Opt | Opt | Custom |
| | export alarms & service state, system reporting, data & report offloading, database import & export, device auto-detect | Yes | Yes | Yes | Yes | Custom |
| Observation & Training | | | | | | Custom |
| Supervision | | | | | | Custom |
| Service Provisioning | | | | | | Custom |
| User Administration | | Yes | Yes | Yes | Yes | Custom |

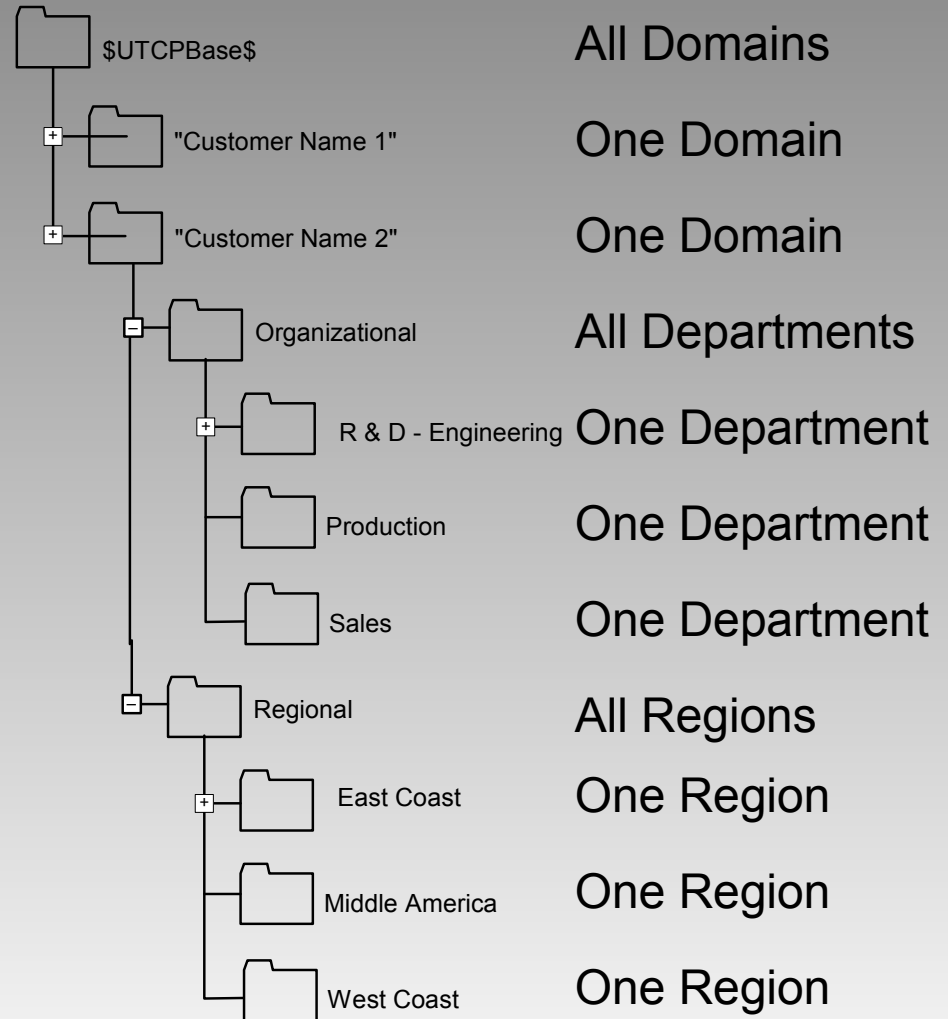
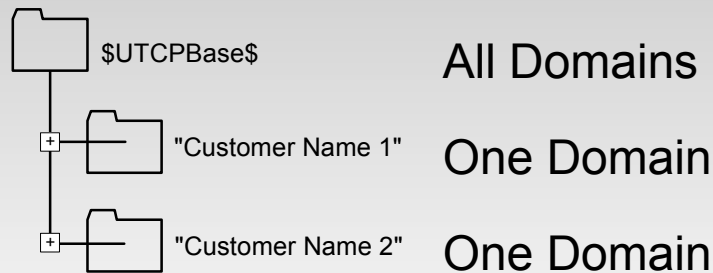
User Administration

User Base Directory

Monitoring, Testing and Configuration span-of-control is determined by the base directory in the endpoint hierarchical structure as shown at the right.



Administrators have a span-of-control determined by the folder at the top of their endpoint folder hierarchy (domain).



User Administration

Screen - Overview

The screenshot displays the 'User Administration' window of the T-Synergy Universal Test & Control Platform. The window title is 'T-Synergy Universal Test & Control Platform — User Administration'. The menu bar includes 'File', 'Edit', 'View', 'Options', and 'Help'. The 'Active Folder' is set to 'Customer 1'.

File Tree: The left pane shows a hierarchical tree structure starting with '\$UTCPBase\$'. Underneath, there are folders for 'Customer 1' and 'Customer 2'. 'Customer 1' contains a sub-folder 'Users (Private)', which lists several users: 'Firebird' (highlighted in blue), 'Robin', 'Joe-E', and 'Steve'.

User Configuration Panel: The main area is divided into several sections:

- User:** Contains a 'Select User from Tree or' dropdown (set to 'Firebird') and a 'Clear All Fields' button. Below are input fields for 'User ID: Firebird', 'User Name: Jim Winer', 'Password: *****', 'PW Confirm: *****', 'Base Directory: \$\$SystemBase\$IT-Synergy', 'Email: firebird@exit109.com', and 'Text Pager/Cell:'.
- Privileges:** A section with checkboxes for 'Monitor & Test', 'Configuration', 'Test Administration', 'User Administration', and 'System Administration'. 'User Administration' and 'System Administration' are checked.
- Start Up Screen:** A section with radio buttons for 'Status', 'Alarms', 'Testing', 'Calls', 'User Admin' (selected), 'Sys Admin', 'Mapping & Dir', 'Device Config', and 'Test Admin'. Below is a 'Start Directory:' field set to '\$SystemBase\$IT-Synergy' and a 'Copy Base Directory' button.

At the bottom of the main area are 'Save/Update User' and 'Delete User' buttons. A 'Status' button and a 'Status Line' are located at the very bottom of the window.

User Administration Working Pane

User Administration Working Pane

Select User from Tree or

User ID:

User Name:

Password:

PW Confirm:

Base Directory:

Email:

Text Pager/Cell:

Start Up Screen

Status User Admin

Alarms System Admin

Testing Mapping & Dir

Calls Device Config

Test Admin

Start Directory:

Privileges

| | |
|--|---|
| <input type="checkbox"/> Monitor & Test | <input checked="" type="checkbox"/> User Administration |
| <input type="checkbox"/> Configuration | <input checked="" type="checkbox"/> System Administration |
| <input type="checkbox"/> Test Administration | |

- The user's privileges determine which screens and functions are available to each user.
- The user's base directory determines the span-of-control and structural trees available to each user.
- The user can modify his own start up options and change his password.

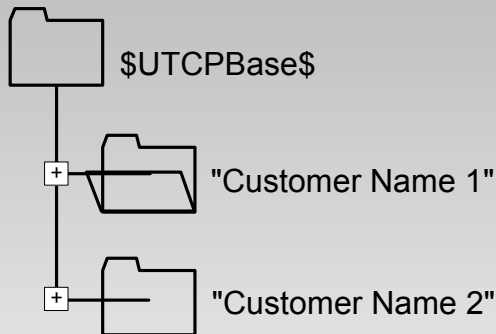
System Administration

System Administration

Base Directory

A System Administrator can have a span of control that includes **all** customer or sub-network domains, that includes only **one** domain, or that includes **some** domains (IMPACT).

UTCP, UTCP+
One Domain,
All Domains



UTP, UTP+
One Domain



IMPACT
One Domain,
Some Domains,
All Domains

System Administration

Billing

Data collection and offloading is on a domain basis.

Raw data is used for billing. The data is offloaded as .CSV files.

Billing Reports Outbound Inbound Status Load CSV Dump CSV Autodetect

Clear Data Selection

Billing Incident T&M Data USE

Incident Peg Counts STAT

Schedule Billing Offload

Billing Offload Directory: \\hostname\FTP-Folders\UTCP-Billing\

Billing User Name: UTCP-Billing File Prefix: UTCP-Billing-

Password: *****

PW Confirm: *****

Timestamp and Data Type follow prefix

| Date | Report Name |
|---------------------|-----------------------------|
| 03/19/2002 11:21:04 | Billing Incident T & M Data |
| 03/19/2002 11:21:15 | Incident Peg Counts |

View Selected

System Administration

Reporting

Data collection, reporting, and offloading is on a domain basis.

Test Head & Link Utilization UTIL
 Mean Time Between Failures MTBF
 Mean Time to Repair MTRR
 Proactive Testing PRO
 Preventive Maintenance PM
 Alarm History ALARMS

Scheduling

Run Only
 Run & Offload

Report Offload Directory:

Billing User Name:
 File Prefix:

Password:
 Timestamp and Report ID follow prefix

PW Confirm:

| Date | Report Name |
|---------------------|------------------------------|
| 03/19/2002 11:21:04 | Test Head & Link Utilization |
| 03/19/2002 11:21:15 | Mean Time Between Failures |
| 03/19/2002 11:21:24 | Mean Time to Repair |
| 03/19/2002 11:21:31 | Alarm History |

System Administration

Ad-Hoc Reporting

To be added.

System Administration

Scheduling

Event Type is 'Report' or 'Billing'.

Event Name is the name of the report or billing dataset.

Use the Data Period and Increment controls to create cyclic or cumulative reports (or billing files).

Domain: Customer Name 1 Next Run: 02.21.2002-17.36.05 Event Type: Report

Event Name: MTBF Device:

Select Schedule

Once, Start at: 12:00 on Feb 07 2002

Hourly, Start at: 00 minutes after each hour

Daily, Start at: 12:00 on Monday Friday
 Tuesday Saturday
 Wednesday Sunday
 Thursday

Weekly, Start at: 12:00 every Monday

Monthly, Start at: 12:00 on the 01 day of each month

Soak, every: 05 minutes
from: 12:00 on Feb 07 2002
until: 12:00 on Feb 07 2002

Use 24-hour clock to set all times

Data Period

From: Feb 07 2002
To: Feb 07 2002

Increment for cyclic reports
Cyclic reports increment both From and To dates based on scheduled run dates.

Increment for cumulative reports
Cumulative reports increment To date only based on scheduled run dates.

Resource Failure

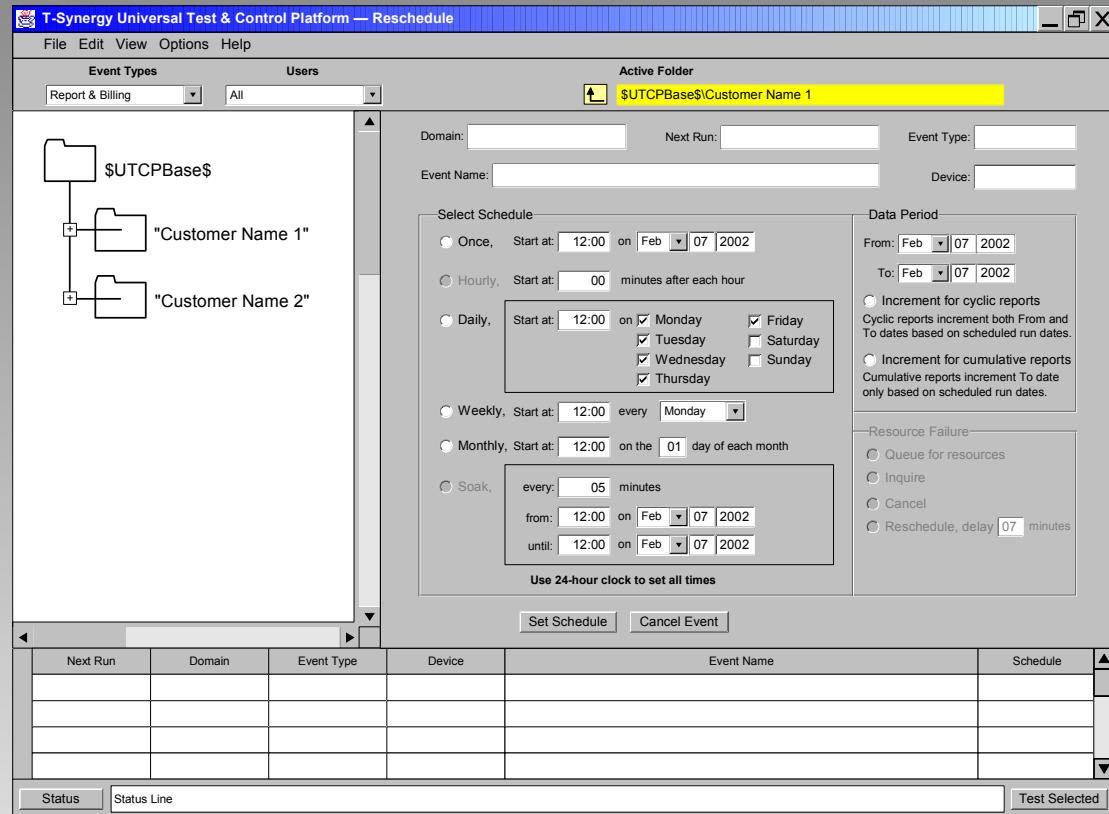
Queue for resources
 Inquire
 Cancel
 Reschedule, delay 07 minutes

Set Schedule Cancel Event

- The same Set Schedule popup is used for all scheduling activities.
- Repetitive events are scheduled one-at-a-time. (For example, Tuesday's event will not be scheduled until Monday's event completes.) The Next Run timestamp will be set when the prior event completes and reschedules. (A periodic cron job backs this up so that event failures will not cause future events to be canceled)

System Administration Rescheduling

System Administrators can view all Reporting and Billing events within their span-of-control, and can reschedule or cancel events that they created.



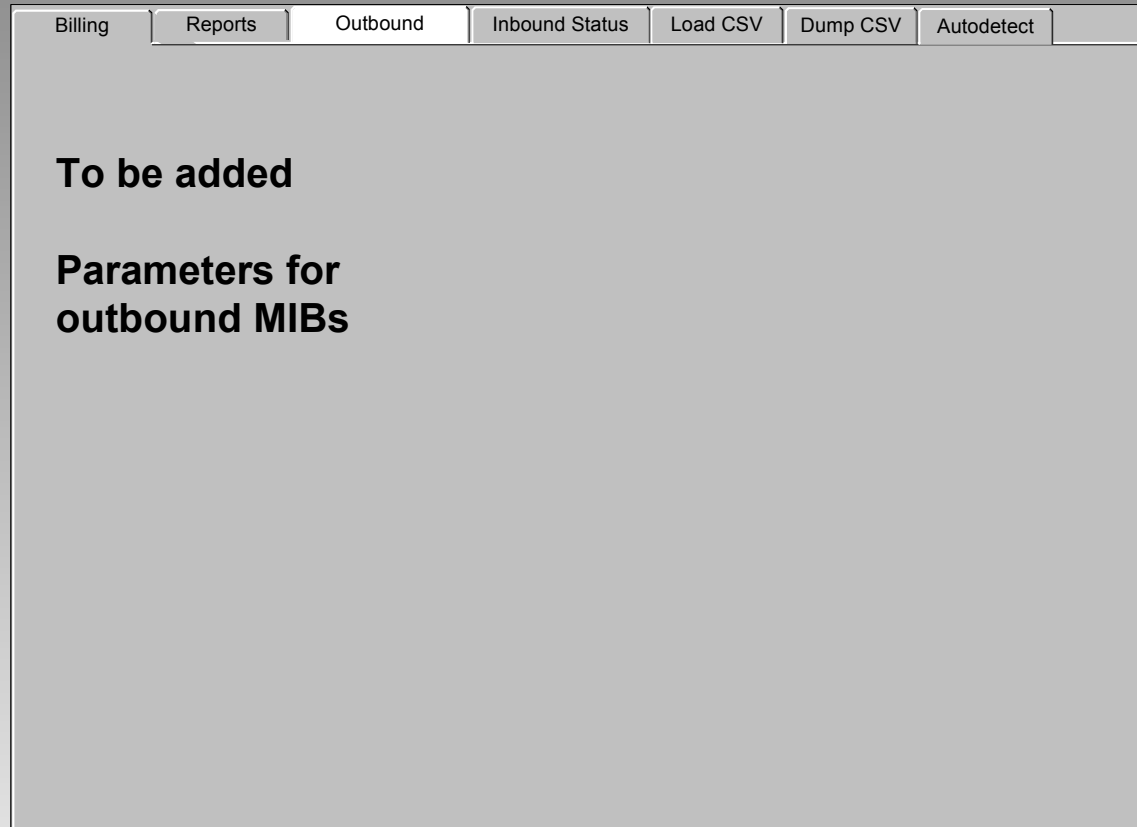
The working pane contains the Set Schedule popup used for all scheduling activities. Selecting an event from the list pane populates the working pane.

System Administration

Outbound Alarms & Service State

When a test fails in a way that indicates a device or link is in an alarm state, an event message can be sent to external systems.

Changes in service state can also be sent to external systems.



System Administration

Inbound Status (UTCP & IMPACT)

When another system is collecting status information from devices, the status can be imported into UTCP or IMPACT, and monitored on several types of status display.

| | | | | | | | |
|---------|---------|----------|----------------|----------|----------|------------|--|
| Billing | Reports | Outbound | Inbound Status | Load CSV | Dump CSV | Autodetect | |
|---------|---------|----------|----------------|----------|----------|------------|--|

To be added

Parameters for inbound MIBs

System Administration

Database Load (Inbound CSVs)

Comma Separated Value (spreadsheet) files can be imported to define almost any part of the database.

Select a data type to populate list of data elements.

Command line processing can be used for data conversion.

| Data Element | Field # or Processing Command Line | |
|---------------------|------------------------------------|-----|
| Device.External_ID | | ▼ ▲ |
| Device.Manufacturer | | ▼ |
| Device.Model | | ▼ |
| Device.SerialNumber | | ▼ |
| | | ▼ |
| | | ▼ |
| | | ▼ |
| | | ▼ |
| | | ▼ |
| | | ▼ |
| | | ▼ |

System Administration

Database Load (Example)

A zip code can be converted to a longitude and latitude that can be used to mark a location on a map.

The PreProcess command does a database lookup on the zip code in field 08 and places the latitude in column 10 and the longitude in column 11.

The PostProcess command creates a folder for each location using the city name and the state name.

Individual fields can also be processed.

The screenshot shows a software interface with several tabs: Billing, Reports, Outbound, Inbound Status, Load CSV (selected), Dump CSV, and Autodetect. Under the 'Load CSV' tab, there are several configuration options:

- Data Type:** A dropdown menu set to 'Location'.
- Field Separator:** A dropdown menu set to '|'.
- PreProcess Command:** A text box containing '\$ProcBase\$\Zip2Geo.exe -z08 -lat10 -lon11'.
- PostProcess Command:** A text box containing '\$ProcBase\$\MakeDir.exe -s%Location.City%+'.

Below these options is a table with two columns: 'Data Element' and 'Field # or Processing Command Line'. The table contains 11 rows of data elements, each with a corresponding field number and a dropdown menu for processing command lines.

| Data Element | Field # or Processing Command Line |
|----------------------|------------------------------------|
| Location.External_ID | 1 |
| Location.Name | 2 |
| Location.Addr1 | 3 |
| Location.Addr2 | 4 |
| Location.Addr3 | 5 |
| Location.City | 6 |
| Location.State | 7 |
| Location.Zip | 8 |
| Location.Country | 9 |
| Location.Latitude | 10 |
| Location.Longitude | 11 |

At the bottom of the interface is an 'Import' button.

System Administration

Database Dump (Outbound CSVs)

Comma Separated Value (spreadsheet) files can be exported from almost any part of the database.

Select a data type to populate list of data elements.

Some data types include more than one object type.

Billing Reports Outbound Inbound Status Load CSV Dump CSV Autodetect

Data Type

Device Field Separator: |

| Data Element | Field # |
|---------------------|---------|
| Device.External_ID | ▲ |
| Device.Manufacturer | |
| Device.Model | |
| Device.SerialNumber | |
| | |
| | |
| | |
| | |
| | |
| | |
| | ▼ |

Export

Introduction to Configuration

Introduction to Configuration

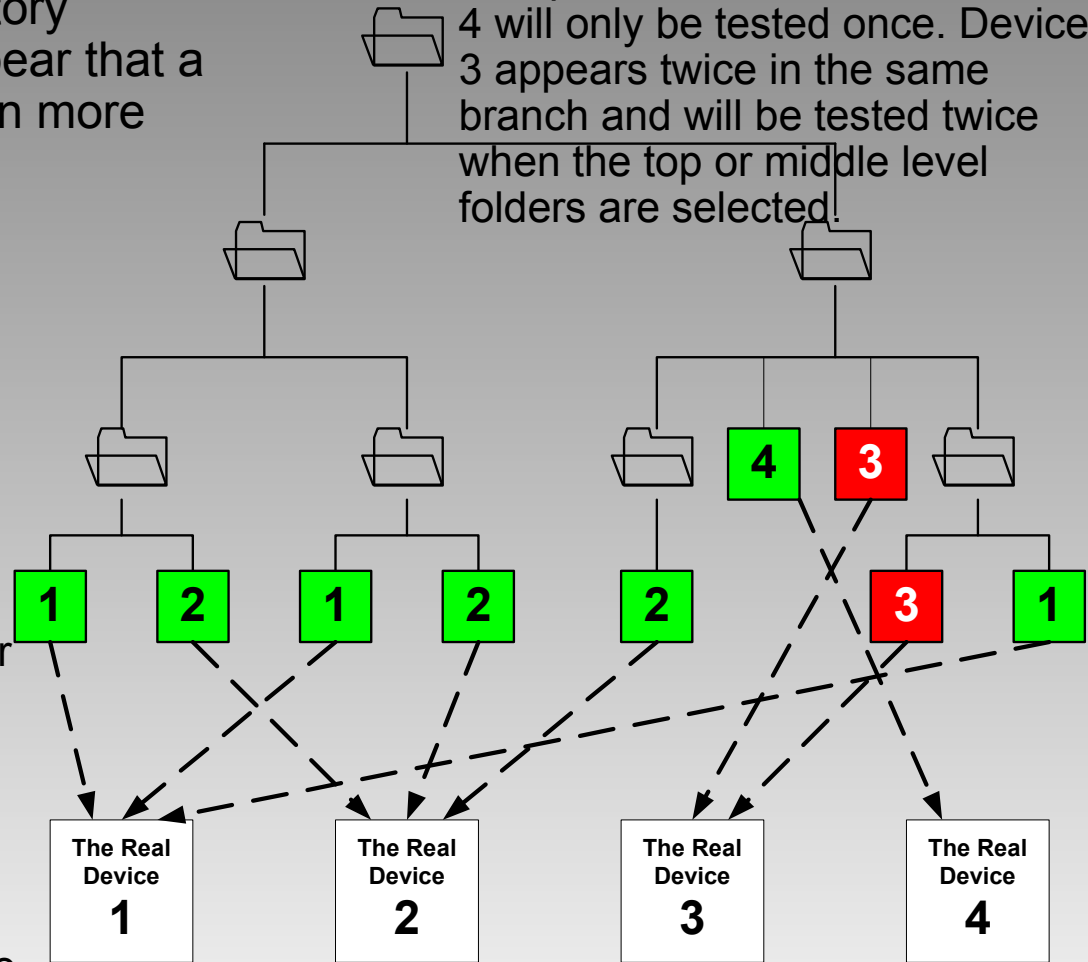
Device Pointers

The hierarchical directory structure makes it appear that a device can be stored in more than one place.

Devices are stored in a special hidden resource directory, but device pointers (short-cuts) can be stored in more than one directory.

This allows definition of more than one structure for the same devices. For example, a geographic mapping and an organization chart.

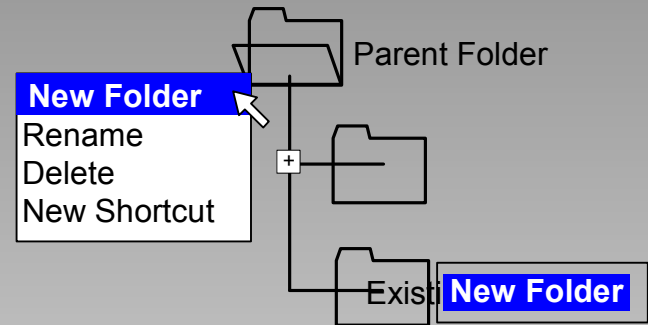
You can even have overlapping regions where some locations are shared.



Introduction to Configuration

Directory Administration

- To add a directory, select the parent directory, right click on it, and select **New Folder**. (You can also select File>New Folder)
- To rename a directory, select it and click the name again, or right click and select **Rename**.
- To delete a directory, select it, right click on it and select **Delete**. (You can also select the folder and press the **Delete** key.)
- To move a directory, select it and drag it to it's new parent.
- To add a shortcut to a directory, select the parent directory, right click on it, and select **New Shortcut**. The shortcut can point to either a folder or a device.



You can add, rename, delete, and move directory folders from any of the Configuration screens. You cannot change directory structure from any of the Monitoring or Testing screens.

Introduction to Configuration

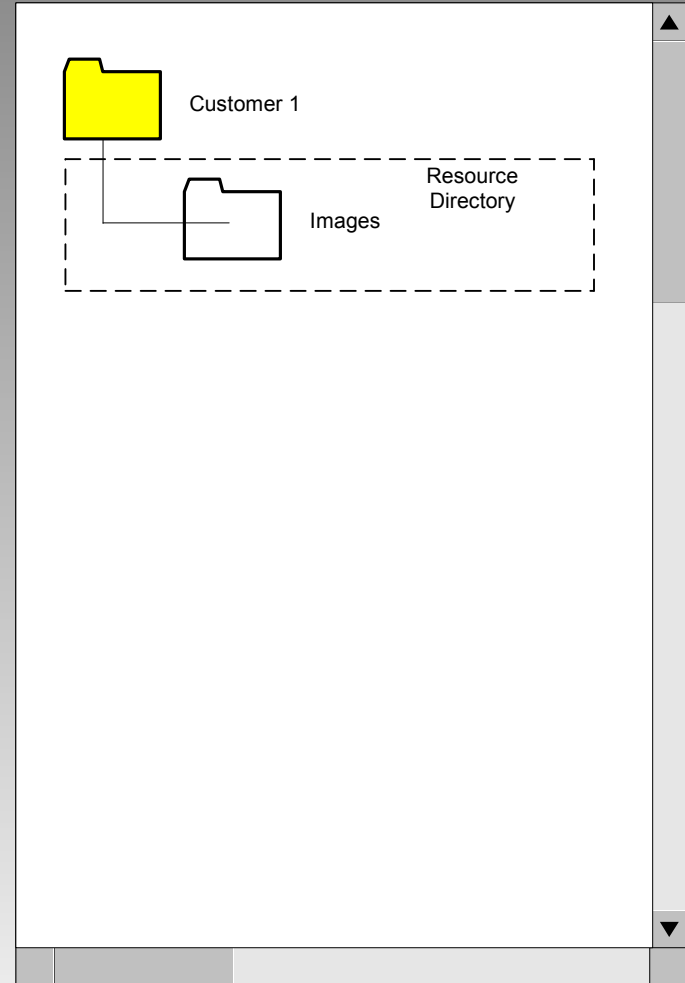
Image Administration

Images are used as the background for geographic maps and network diagrams.

Any GIF, JPG, or PNG image can be used. It is copied into a resource image library and can then be associated with a folder.

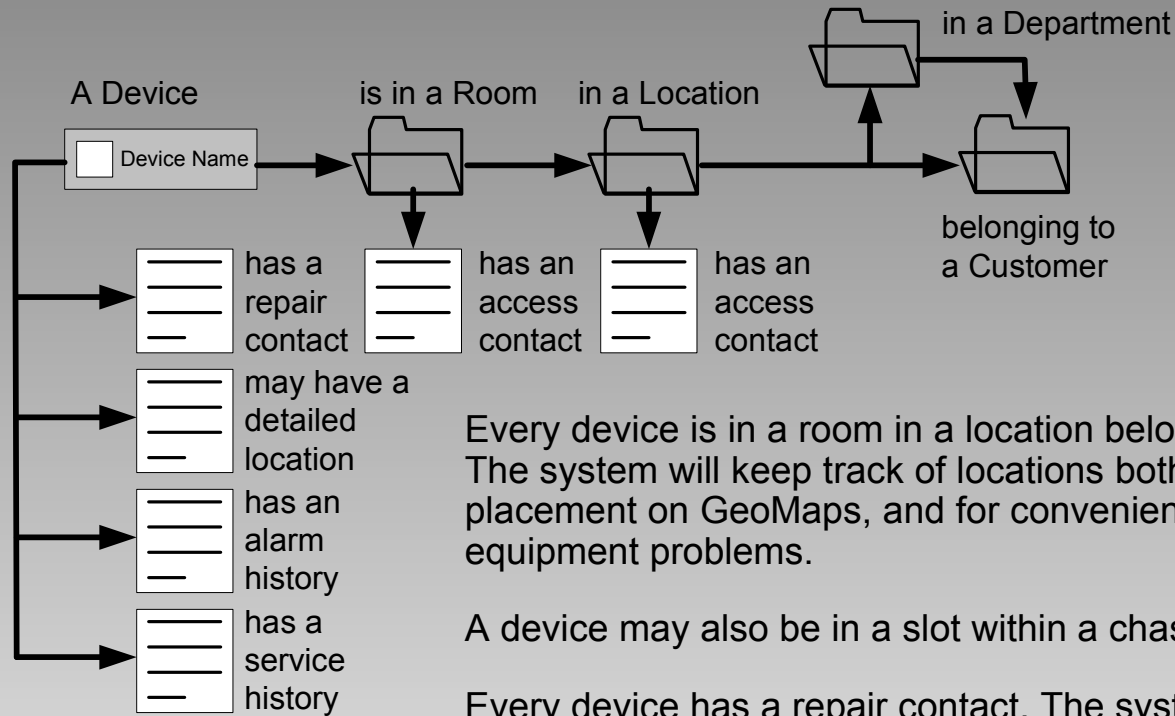
Copying images to a resource folder prevents accidental deletion or movement of images.

Resource directories are visible when the user needs them.



Introduction to Configuration

Location & Contact Administration



Every device is in a room in a location belonging to a customer. The system will keep track of locations both for automatic placement on GeoMaps, and for convenience in reporting equipment problems.

A device may also be in a slot within a chassis within a rack.

Every device has a repair contact. The system will keep track of repair contacts for convenience in reporting equipment problems.

Every location and each room has an access contact. The system will keep track of access contacts for convenience in reporting equipment problems.

Every device has an alarm history and a service history.

Introduction to Configuration

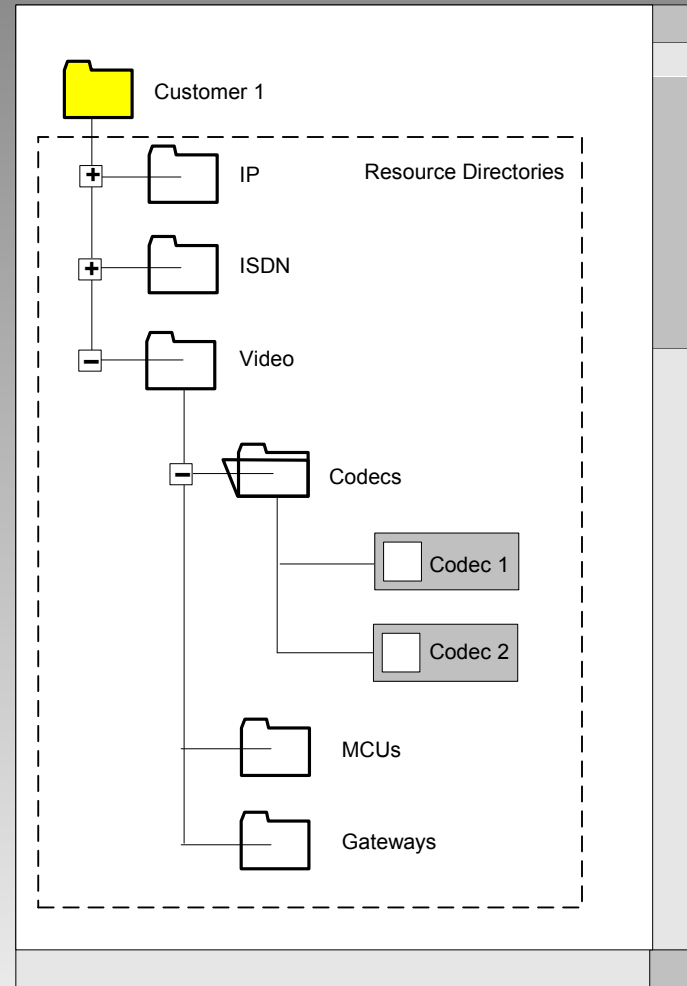
Device Administration

Devices are stored in resource directories. Pointers in the endpoint directory structure define access to endpoint devices for monitoring and testing.

Configuration personnel can access the devices in the resource folders by device type. A device can be defined, but not available for end point selection. For example, pre-service OOS.

The resource folders appear only on the administrative screens where they are needed. They also appear on monitoring and testing screens when the user also has Configuration permission.

When a user has both Configuration and Testing permission, pre-service testing is easy. Then just drag the device from the resource folder to an endpoint folder to create a shortcut in the endpoint folder.



Introduction to Configuration

Service State

Each device has a service state that is tracked in the Service History Log and can be reported to an external system.

If the device is controllable, or has a control/monitoring device, the service state can be enforced (UTCP, UTCP+, IMPACT). Service states cannot be enforced for devices that cannot be controlled.

The service states include:

- In Service
- OOS – Pre-Service
- OOS – Administrative
- OOS – Maintenance
- OOS – Called for Repair
- OOS – Repaired
- OOS – Repair Verification

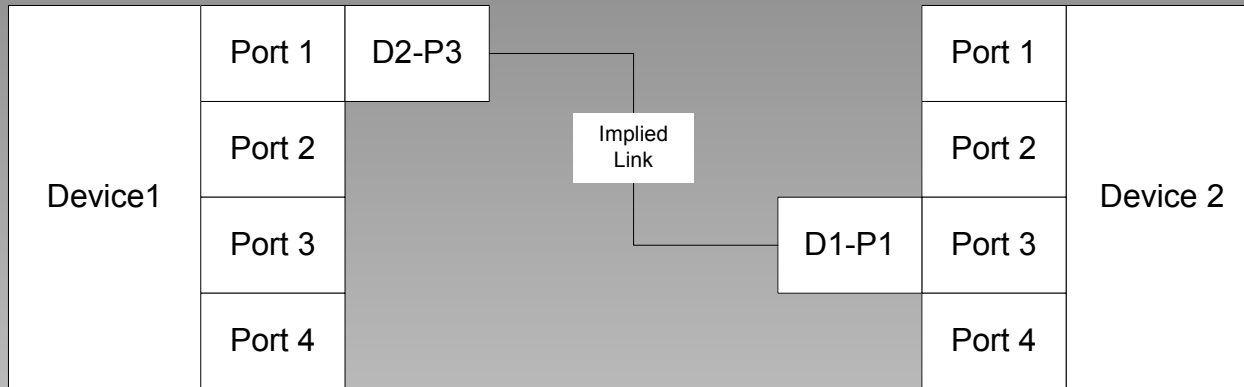
The Svc Log button in the auxiliary controls area opens the Service State dialog box to add an entry to the Service History Log.

The screenshot shows a dialog box titled "Service State". It contains the following elements:

- Device:** A text field with a redacted cyan bar.
- Current State:** A text field with a redacted cyan bar.
- Set Device State to:** A dropdown menu currently showing "Add Comment Only".
- Comment:** A large text area with a vertical scrollbar on the right side.
- Buttons:** "Set State" and "Cancel" buttons at the bottom.

Introduction to Configuration

Link Administration



Link definition is implied when a device port is specified as connected to a port on another device (as opposed to having an address).

Links can be implied by device settings, or explicitly defined after both devices have been defined.

Links are optionally visible on GeoMaps and NetDiags.

Introduction to Test Administration

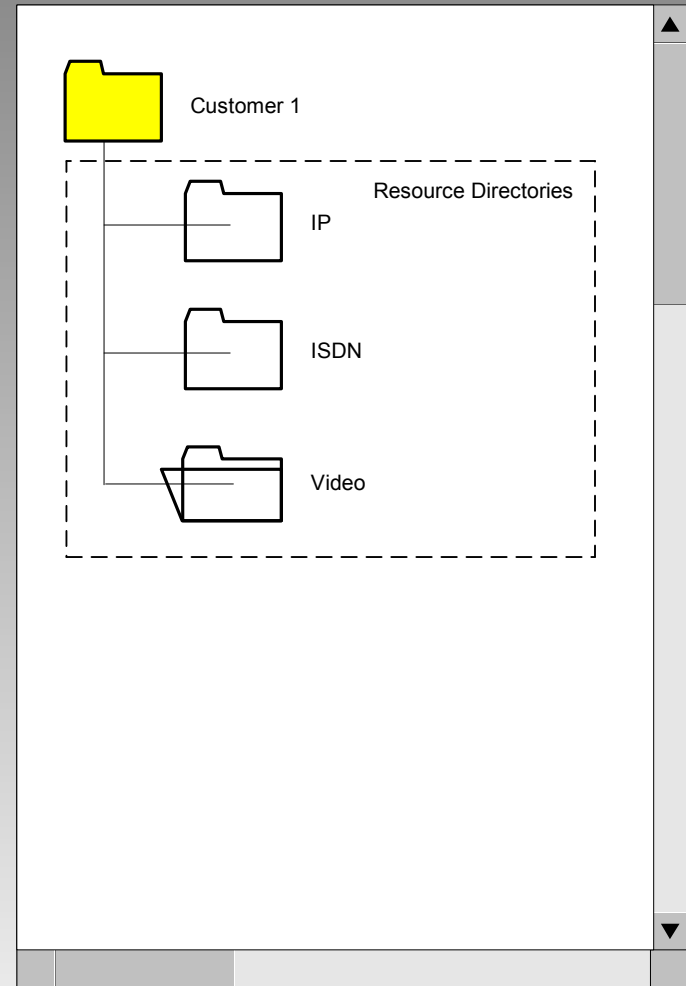
Introduction to Test Administration

Test Script/Step Administration

Test scripts and steps are fixed for UTP and UTP+. For UTCP, UTCP+, and IMPACT, test scripts and steps are editable.

Scripts are segregated by the networks/protocols installed for each domain. Selecting a network/protocol folder determines the source of scripts, steps, commands, etc. and the place where scripts and steps are stored.

The resource folders appear only on the administrative screens where they are needed. They do not appear on monitoring and testing screens.



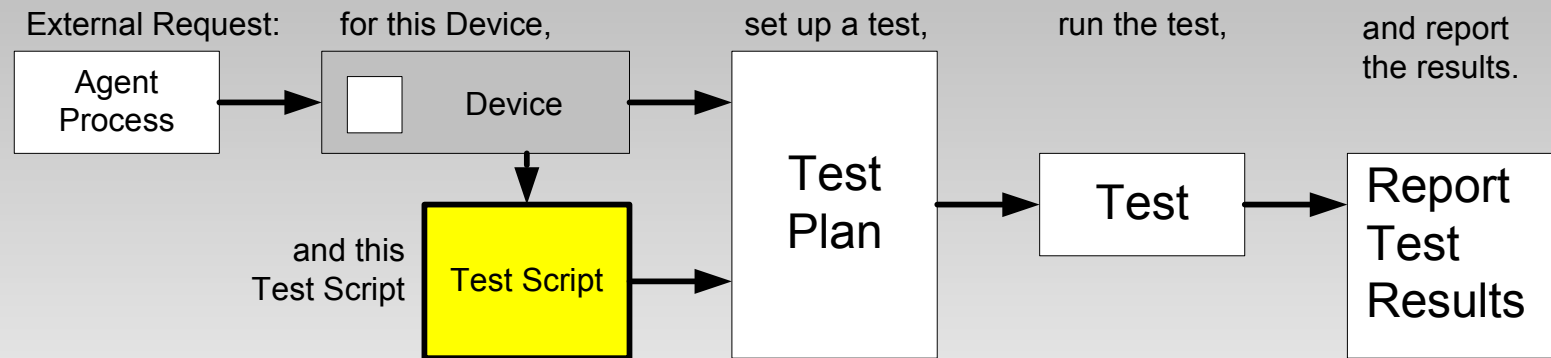
Introduction to Test Administration

Default Script Administration

Creating and running a test plan by selecting a device alone requires that a default script be associated with the device.

A default script can be assigned to each class of devices. Individual devices can inherit the default for their device class, or can use a more specific script set by the Configuration user.

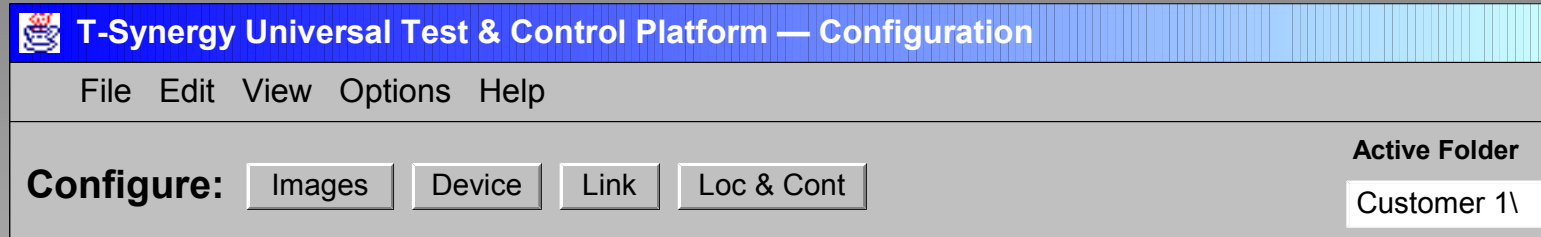
In UTP+, the API used by the scheduler to run tests is exposed. If the script is not specified, the default script is used.



Configuration Features

Configuration Features

Screen Selection



Buttons in the **Control Area** select which of the Configuration screens display in the Working pane.

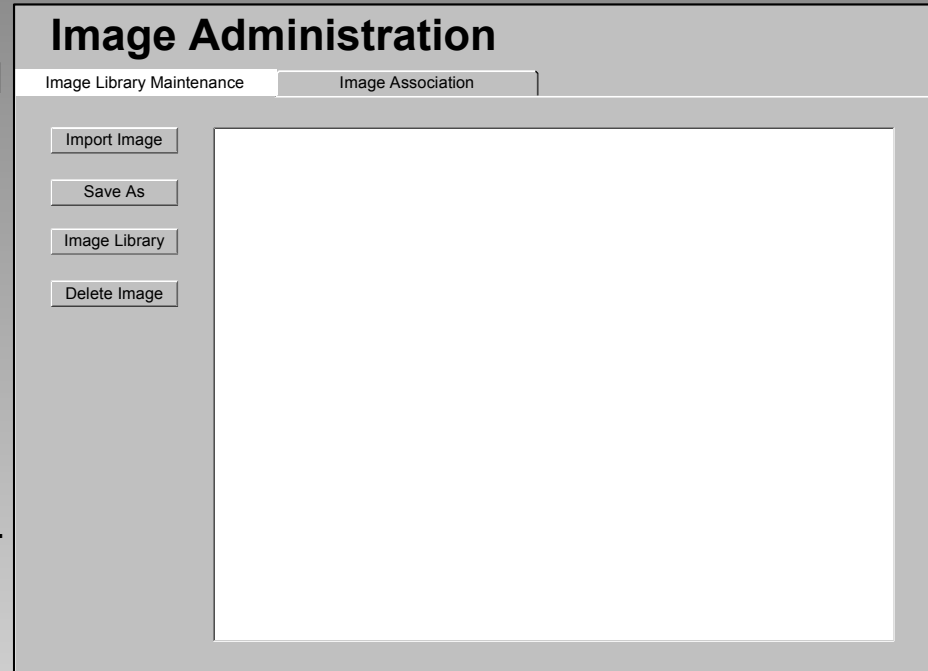
Configuration Features

Image Administration — Importing

Images are associated with directory folders for GeoMap and NetDiag status displays. OrgChart status displays do not need an image.

Tree structures for device selection are completely arbitrary. The associated images are also completely arbitrary.

Associate an image with a folder. Each folder or device pointer in the parent folder becomes an icon superimposed on the associated image. In a NetDiag, move the icons where you want them and lock them in place (right click menu). In a GeoMap, the icons can be placed automatically by latitude and longitude.



GeoMaps show one level of folders and devices. NetDiags can show the current folder and two levels down of folders and devices.

Configuration Features

Image Administration — Associate

The position of this folder on the next higher level map can be in H & V pixels, or in Lat & Long.

Associate an image with a folder. Each folder or device pointer in the folder becomes an icon superimposed on the associated image.

Image Administration

Image Library Maintenance
Image Association

Select Folder on Tree

Next Level Higher

Map/Folder Name:

Map Image:

| | Horizontal | Vertical | | Latitude | Longitude |
|--------------------|--|----------------------------------|--|--|---|
| Map size in pixels | <input type="text" value="365"/> | <input type="text" value="449"/> | | Upper Left: <input style="width: 30px;" type="text" value="???"/> | <input style="width: 30px;" type="text" value="???"/> |
| | <input type="button" value="Display Image"/> | | | Lower Right: <input style="width: 30px;" type="text" value="???"/> | <input style="width: 30px;" type="text" value="???"/> |

This Level

Display Format

- GeoMap — One level down of subfolders and devices
- OrgChart — image not necessary
- Network Diagram—
 - One level down of subfolders and devices
 - Two levels down of subfolders and devices
- Show this folder on image

Location of This Folder on Higher Map

| | Horiz | Vert | Lat | Long |
|-------|--------------------------------|--------------------------------|---|---|
| 2 Up: | <input type="text" value="0"/> | <input type="text" value="0"/> | <input style="width: 30px;" type="text" value="???"/> | <input style="width: 30px;" type="text" value="???"/> |
| 1 Up: | <input type="text" value="0"/> | <input type="text" value="0"/> | <input style="width: 30px;" type="text" value="???"/> | <input style="width: 30px;" type="text" value="???"/> |
| Here: | <input type="text" value="0"/> | <input type="text" value="0"/> | <input style="width: 30px;" type="text" value="???"/> | <input style="width: 30px;" type="text" value="???"/> |

Map/Folder Name:

Map Image:

| | Horizontal | Vertical | | Latitude | Longitude |
|--------------------|--|----------------------------------|--|--|---|
| Map size in pixels | <input type="text" value="356"/> | <input type="text" value="249"/> | | Upper Left: <input style="width: 30px;" type="text" value="???"/> | <input style="width: 30px;" type="text" value="???"/> |
| | <input type="button" value="Display Image"/> | | | Lower Right: <input style="width: 30px;" type="text" value="???"/> | <input style="width: 30px;" type="text" value="???"/> |

In a NetDiag, display the image, move the icons where you want them, and lock them in place using the right click menu.

In a GeoMap, the icons can be placed automatically by latitude and longitude.

An OrgChart is formatted automatically, and does not use an image.

Configuration Features

Location & Contact Administration

Devices are in rooms in locations belonging to customers.

A Location has a physical address.

A Location has a contact for access.

Devices at a Location may all have the same default repair contact.

Location & Contacts

Location & Contact Room & Contact Repair Contact

Select Customer on Tree

Load Existing Location OR Clear All Fields

Location Address

Name: City:
Addr 1: State:
Addr 2: Zip:
Addr 3: Country:

Location Contact

Name:
Phone:
Email:
Fax:

Default Repair Contact

Name: None
Phone:
Email:
Fax:

Save Location Delete Location

Configuration Features

Room & Contact Administration

A Room is associated with a location.

A Room has a contact for access.

Location & Contacts

Location & Contact | Room & Contact | Repair Contact

Select Location on Tree

OR

Room Address

Name:

Number:

Room Contact

Name:

Phone:

Email:

Fax:

Configuration Features

Repair Contact Administration

Each device has a contact for repair.

Many devices may have the same contact.

The Repair Contact may be set to default for a location.

Location & Contacts

Location & Contact Room & Contact **Repair Contact**

Select Customer on Tree

OR

Repair Contact

Name:

Company:

Phone:

Email:

Fax:

Configuration Features

Device Administration

Each device can appear in multiple folders.

Each Device Type panel is defined by an associated device type driver or endpoint type driver.

| Active Folder Only | | Select Device from Tree OR | | All Device Occurances | |
|---|------------------------------|--|---|--------------------------------|------------------------------|
| Add Device THIS Folder | Delete Device THIS Folder | Select Equipment Type <input type="text"/> | <input type="button" value="Add New Device"/> | Update Device (ALL Folders) | Delete Device ALL Folders |
| This pane varies by equipment type selected | | | | | |

Configuration Features

Link Administration

Links are implicit when two devices are created with pointers to each other's ports.

Links are explicitly defined by identifying both endpoints.

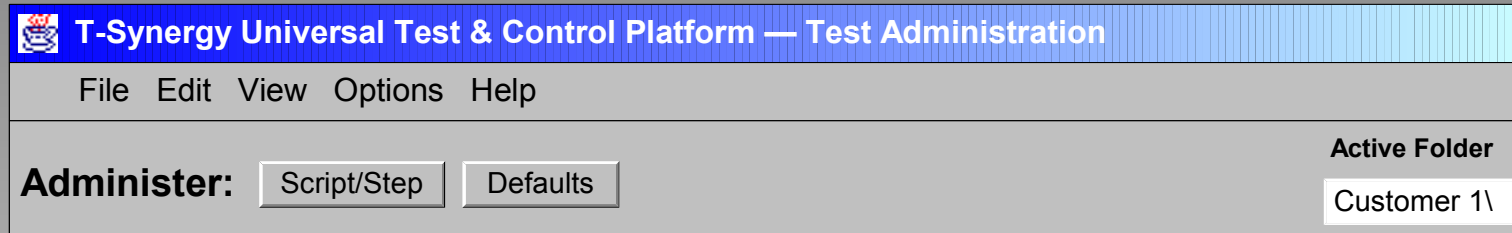
Links

| | |
|--|---|
| From: Device <input type="text"/> <input type="button" value="Browse"/> <input type="button" value="Find Links"/> <input type="text"/> <input type="button" value="v"/> Chassis Slot Port <input type="text"/> <input type="text"/> <input type="text"/> <input type="button" value="Delete Link"/> | To: Device <input type="text"/> <input type="button" value="Browse"/> Chassis Slot Port <input type="text"/> <input type="button" value="v"/> <input type="text"/> <input type="button" value="v"/> <input type="text"/> <input type="button" value="v"/> Port Name: <input type="text"/> <input type="button" value="v"/> <input type="button" value="Add Link"/> |
|--|---|

Test Administration Features

Test Administration Features

Screen Selection

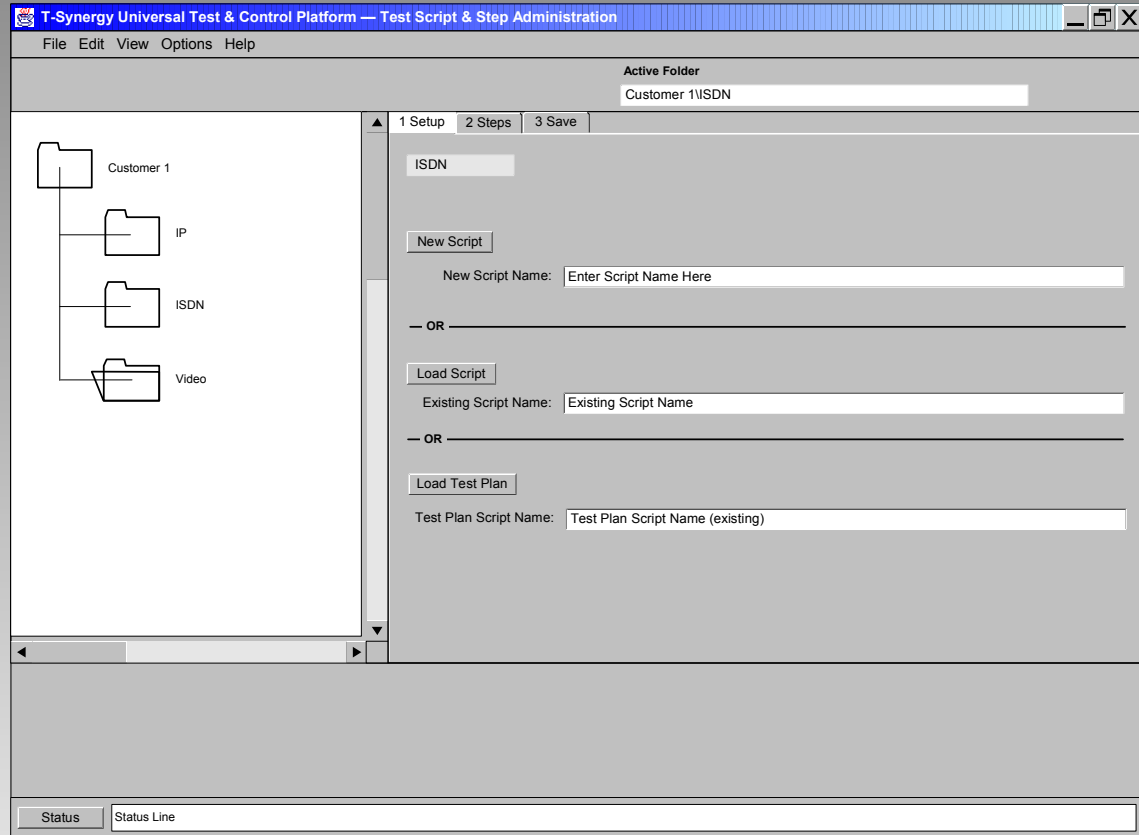


Buttons in the **Control Area** select which of the Test Administration screens display in the Working pane. For UTP and UTP+, only Defaults can be administered.

Test Administration Features

Network Selection

Select the network / protocol within those defined for the domain.



Test Administration Features

Script Setup

Load an existing script or create a new script.

1 Setup | 2 Steps | 3 Save

ISDN

New Script

New Script Name:

— OR —

Load Script

Existing Script Name:

— OR —

Load Test Plan

Test Plan Script Name:

Test Administration Features

Step-ActionSteps

Set the order of existing and new steps.

The screenshot shows a software interface for configuring test steps. At the top, there are three tabs: "1 Setup", "2 Steps", and "3 Save". The "2 Steps" tab is active. Below the tabs, there is an "ISDN" input field and a "Step Count" field with the value "5". To the right, a list of steps is shown in a table-like structure with a cyan highlight on the first row:

| | | |
|---|-------------------|---|
| 1 | First ActionStep | ▲ |
| 2 | Second ActionStep | |
| 3 | Third ActionStep | ▼ |

Below this, there are five tabs: "1 ActionSteps", "2 Inputs", "3 PreConditions", "4 Command", and "5 PostConditions". The "1 ActionSteps" tab is active. It contains a list of steps in a text area:

- First ActionStep
- Second ActionStep
- Third ActionStep
- Fourth ActionStep
- Fifth ActionStep

To the left of the list are two buttons: an upward arrow (^) and a downward arrow (v). To the right are five buttons: "Insert New Step", "Append New Step", "Load Step", "Delete Step", and "Save Step As".

Test Administration Features

Command Lines & Parameters

Command and parameter lines are provided in two places for each step:

- Input Panels

If the step requires input, either a command line program can request the input, or a list of fields and default values can be supplied and a pop-up dialog box will request user input. This input can then be tested as part of the pre-conditions before running the main command for a step.

If the step is being run unattended (scheduled), the default values are used and the pop-up does not appear.

- Control Panels for Interactive Tests

If the step uses an interactive control panel, the test remains active and under the control of the panel until the user clicks the **Continue** button on the test screen.

If the step is being run unattended (scheduled), the default values are used and the control panel does not appear.

Test Administration Features

Step-Inputs

Define inputs for the step. Inputs may be from a coded panel or from a popup constructed from the input screen data.

2 Steps | 3 Save

ISDN: Step Count:

1 First ActionStep
2 Second ActionStep
3 Third ActionStep

1 ActionSteps | 2 Inputs | 3 PreConditions | 4 Command | 5 PostConditions

None

Use Panel:

Parameters:

Use Popup

| Variable Name | Default Value | Description |
|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |

Test Administration Features

Step-Command

Specify command and parameters for the step.

2 Steps | 3 Save

ISDN

Step Count:

1 First ActionStep ▲
2 Second ActionStep
3 Third ActionStep ▼

1 ActionSteps | 2 Inputs | 3 PreConditions | 4 Command | 5 PostConditions

Command: Browse

Parameters:

The executable file associated with a step may include anything such as:

- Ping – parameter is IP address from Device.
- Status – result of a status inquiry on Device.
- Reset – Device specific command.
- Analyse-D – look at output of D-Channel trace in the log window and make a recommendation.
- Run ksh with script file using *awk* and *sed* to analyze ActionStep log or Test Plan log.

Test Administration Features

Step-PostCondition

Specify a case statement based on the step return code.

When the user runs the script interactively, “device-at-a-time” rather than “step-at-a-time,” the script runs until a pause or until the end.

The screenshot shows a software interface for configuring test steps. At the top, there are tabs for '2 Steps' and '3 Save'. Below this, there are input fields for 'ISDN' and 'Step Count: 5'. A dropdown menu is open, showing three options: '1 First ActionStep' (highlighted in cyan), '2 Second ActionStep', and '3 Third ActionStep'. Below the dropdown are tabs for '1 ActionSteps', '2 Inputs', '3 PreConditions', '4 Command', and '5 PostConditions'. The main area contains a table with columns for 'RC', 'Description', 'Action', and 'Step'. The first row has RC '0' and Description 'Normal Completion', with 'NextStep' in the Action column and a dropdown in the Step column. The second row has RC '2' and Description 'No Connection on Dial', with 'STOP' in the Action column and a dropdown in the Step column. There are several empty rows below, each with a dropdown in the Step column. On the left side of the table, there are small square buttons with '^' and 'v' symbols.

| RC | Description | Action | Step |
|----|-----------------------|----------|------|
| 0 | Normal Completion | NextStep | ▼ |
| 2 | No Connection on Dial | STOP | ▼ |
| | | | ▼ |
| | | | ▼ |
| | | | ▼ |
| | | | ▼ |
| | | | ▼ |
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| | | | ▼ |
| | | | ▼ |

Action may include

- NextStep
- Stop
- GotoStep
- Pause

Test Administration Features

Script Save

Save the script under the original name or under a new name.

The screenshot shows a dialog box with three tabs: '1 Setup', '2 Steps', and '3 Save'. The '3 Save' tab is active. Inside the dialog, there is a text input field containing 'ISDN'. Below this, there is a label 'Current Script Name:' followed by a text input field containing 'Enter Script Name Here'. At the bottom left, there is a button labeled 'Save Script As'.

Test Administration Features

Default Script Administration

The default script is set by device class.

Individual devices can use either the default script for their class, or a specific script administered by the Configuration user.

Default Script Admin

Select Customer on Tree

Select Device Class

Select Script

UTCP, IMPACT Only
Monitoring Features

Monitoring Features

Status (Map) – GeoMap

Select a device from the list and double-click it (or use Test Selected button) to test it.

Select a folder from the Tree or the GeoMap to open it (and change the map).

Double click a folder from the Tree or the GeoMap to select all devices at lower levels.

The screenshot shows the 'T-Synergy Universal Test & Control Platform — Status' window. The interface includes a menu bar (File, Edit, View, Options, Help), status filters (Status View: Device Alarms, Service State: In Service, Alarm Filter: All, Active Folder: \$UserBase\$East Coast), and a folder tree on the left. The tree shows a hierarchy: \$UserBase\$ > East Coast > Atlanta, Boston, Eatontown, New York, Washington. The main area is a map of the Eastern United States with various cities and states labeled. A yellow box highlights 'Washington' on the map. Below the map is a data table with columns: Device Type, Device ID, Device Name, Make & Model, Location, Service State, Device Alarm, User Column 1, and User Column 2. The first row contains: Codec, DC-CODEC-0041, Conf 3, Tand 600, DC-C1-R3, In Service, ISDN Port 3. At the bottom, there is a 'Status' button, a 'Status Line' text field, and a 'Test Selected' button.

| Device Type | Device ID | Device Name | Make & Model | Location | Service State | Device Alarm | User Column 1 | User Column 2 |
|-------------|---------------|-------------|--------------|----------|---------------|--------------|---------------|---------------|
| Codec | DC-CODEC-0041 | Conf 3 | Tand 600 | DC-C1-R3 | In Service | ISDN Port 3 | | |
| | | | | | | | | |
| | | | | | | | | |

Monitoring Features

Status (Map) – OrgChart

Select a device from the list and double-click it (or use Test Selected button) to test it.

Double-click a folder in the Tree or on the OrgChart to open it (and change to its level chart).

Select a folder from the Tree or the OrgChart and click Test Selected button to test all devices at lower levels.

Select a device from the OrgChart and double-click it (or use Test Selected button) to test.

The screenshot displays the 'T-Synergy Universal Test & Control Platform — Status' window. The interface includes a menu bar (File, Edit, View, Options, Help), a toolbar with 'Device Alarms', 'Service State', 'Alarm Filter', 'Active Folder', 'Svc Log', and 'History'. The 'Active Folder' is set to '\$UserBase\$Eastern Region'. The left pane shows a tree view with 'Eastern Region' selected. The right pane shows an OrgChart with the following structure:

- Eastern Region
 - Boston Office
 - Cust 1 Conf Room 1
 - Cust 1 Conf Room 2
 - Cust 1 Conf Room 3
 - Cust 2 Conf Room 1
 - New York Office
 - Cust 1 Conf Room 1
 - Cust 1 Conf Room 2
 - Cust 1 Conf Room 3
 - Cust 2 Conf Room 1
 - Cust 2 Conf Room 2
 - Eatontown Office
 - Cust 1 Conf Room 1
 - Cust 1 Conf Room 2
 - Cust 1 Conf Room 3
 - Washington Office
 - Cust 1 Conf Room 1
 - Cust 1 Conf Room 2
 - Cust 1 Conf Room 3
 - Cust 2 Conf Room 1
 - Cust 2 Conf Room 2
 - Atlanta Office
 - Cust 1 Conf Room 1
 - Cust 1 Conf Room 2
 - Cust 2 Conf Room 1
 - Cust 2 Conf Room 2

The table at the bottom of the window contains the following data:

| Device Type | Device ID | Device Name | Make & Model | Location | Service State | Device Alarm | User Column 1 | User Column 2 |
|-------------|-----------|-------------|--------------|----------|---------------|--------------|---------------|---------------|
| CODEC | Atlanta 2 | GA-C1-R2 | Polycom 600 | GA-C1-R2 | OOS-ALARM | Comms Down | | |
| CODEC | Atlanta 4 | GA-C2-R2 | Sony 2300 | GA-C2-R2 | In Service | ISDN Port 3 | | |
| | | | | | | | | |

At the bottom of the window, there is a 'Status' field with 'Status Line' and a 'Test Selected' button.

Monitoring Features

Status (Map) – Network

Select a device from the list and double-click it (or use Test Selected button) to test it.

Double-click a folder in the Tree or on the NetDiag to open it (and change to its level chart).

Select a folder from the Tree or the NetDiag and click Test Selected button to test all devices at lower levels.

Select a device from the NetDiag and double-click it (or use Test Selected button) to test.

| Device Type | Device ID | Device Name | Make & Model | Location | Service State | Device Alarm | User Column 1 | User Column 2 |
|-------------|---------------|-------------|--------------|----------|---------------|--------------|---------------|---------------|
| Codec | DC-CODEC-0041 | Conf 3 | Tand 600 | DC-C1-R3 | In Service | ISDN Port 3 | | |
| | | | | | | | | |
| | | | | | | | | |

A NetDiag is structurally identical to a GeoMap, except that the positions of the folders and devices must be manually set instead of being calculated by longitude and latitude.

Monitoring Features

Status Grid

Select a device from the list and double-click it (or use Test Selected button) to test it.

Double-click a folder in the Tree to open it (and add its contents to the Grid).

Select a folder from the Tree or the Grid and click Test Selected button to test all devices at lower levels.

Select a device from the Grid and double-click it (or use Test Selected button) to test.

Select a device or folder and drag it off the Grid or press **Del** key to delete it from the Grid.

The screenshot displays the 'T-Synergy Universal Test & Control Platform — Status' window. It features a menu bar (File, Edit, View, Options, Help) and several control panels: 'Status View' (Device Alarms), 'Service State' (In Service), 'Alarm Filter' (All), and 'Active Folder' (\$UserBase\$Eastern Region). A tree view on the left shows a hierarchy starting with '\$UserBase\$' and including 'Eastern Region', 'Atlanta Office', 'Boston Office', 'Eatontown Office', 'New York Office', and 'Washington Office'. The 'Atlanta Office' folder is highlighted in red. The main grid is a table with columns: Device Type, Device ID, Device Name, Make & Model, Location, Service State, Device Alarm, User Column 1, and User Column 2. The grid contains data for 'Boston Office' and 'Eatontown Office'. A red alarm icon is visible in the 'Atlanta Office' row, which is not selected. The status bar at the bottom shows 'Status' and 'Status Line'.

The grid differs from all other status displays in that multiple folders can be specified in non-hierarchical collections. In the example above, only the Boston and Eatontown offices are selected. The red alarm in the Atlanta office does not appear in the grid or the alarm list because the Atlanta office is not selected.

Monitoring Features

Calls

Select a device from the list and double-click it (or use Test Selected button) to test it.

Double-click a folder in the Tree to open it and place any in-call devices in the List.

Select a folder from the Tree and click Test Selected button to test all in-call devices at lower levels.

Additional alarm information for the selected device may appear in the Working pane.

| Call ID | Endpoint Type | Endpoint Device ID | Call Status | Call Start | Call Duration |
|---------|---------------|--------------------|-------------|---------------------|---------------|
| 123 | Codec | ET-CODEC-0065 | In Progress | 2002-03-17 15:35:28 | |
| 123 | Codec | DC-CODEC-0034 | In Progress | 2002-03-17 15:35:28 | |
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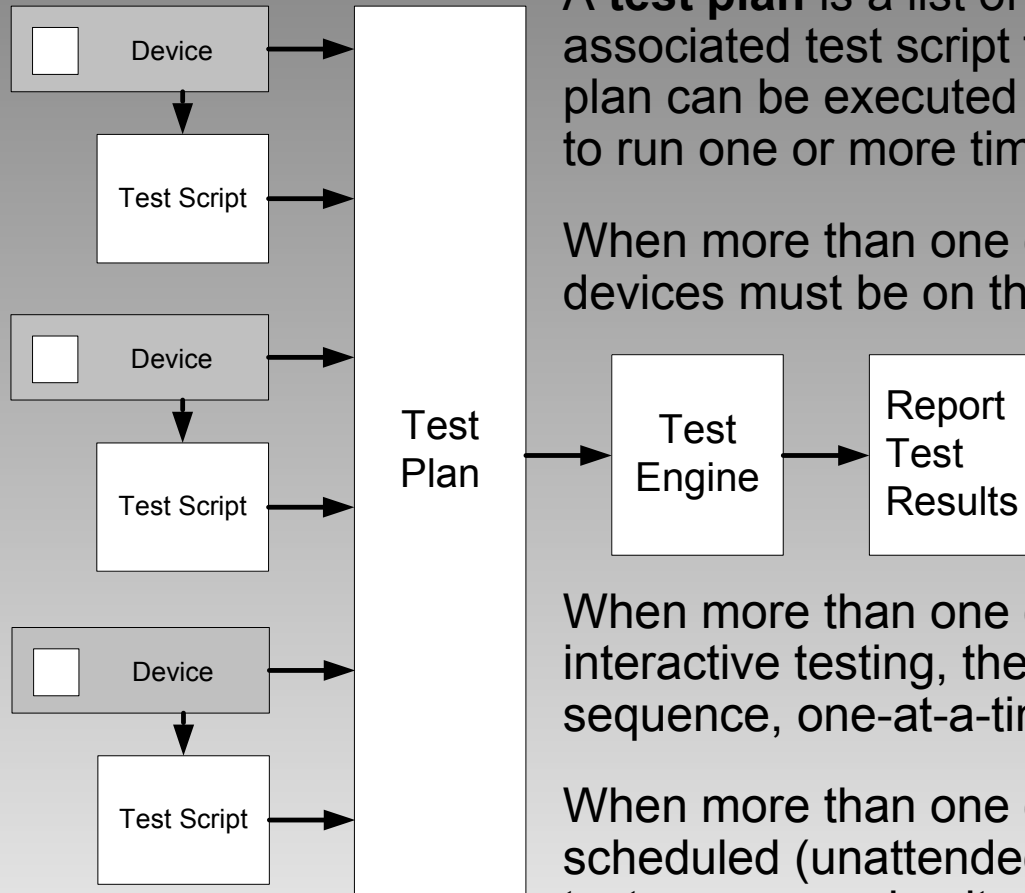
This screen is available only when customer equipment notifies us of calls. It is useful for selecting devices to test based on complaints from callers.

Other types of screens can be made available based on customer needs.

Testing Features

Testing Features

Test Plans



A **test plan** is a list of devices, and an associated test script for each device. A test plan can be executed interactively, or scheduled to run one or more times.

When more than one device is selected, all devices must be on the same network/protocol.

When more than one device is selected for interactive testing, the devices are tested in sequence, one-at-a-time.

When more than one device is selected for scheduled (unattended) testing, several device tests may run simultaneously when testing resources are available.

Testing Features

Test Plan Screen

If you have used the **Test Selected** button or double-clicked a device or folder on another screen to get here, the list will be pre-populated with the appropriate devices.

The default script for each device will be indicated. To change the script for a device, select the device and select a new script from the drop-down.

The screenshot shows the 'T-Synergy Universal Test & Control Platform — Test Plan' window. The 'Active Folder' is '\$UserBase\$East Coast\Washington'. The tree view shows folders: \$UserBase\$, East Coast, Atlanta, Boston, Eatontown, New York, and Washington. The 'Test Plan' panel has four steps: 1. Select Device(s) from Tree to add to List; 2. Select Device(s) from List to change test script, with a 'Change Script of Selected to:' dropdown; 3. Name the Test Plan (Default is Device + Date), with a 'Test Plan Name:' field and a 'Default' button; 4. Select run mode, with 'Interactive' buttons for 'Test Selected Device Now' and 'Test All Devices Now', and 'Automatic' buttons for 'Run Whole Test Plan Now' and 'Schedule Test Plan'. A table at the bottom has columns: Device ID, Device Name, Make & Model, and Test Script. The first row is highlighted in cyan: DC.CODEC-0041, Conf 3, Tand 600, Check ISDN Port Failure. A 'Status' field and 'Status Line' are at the bottom left, and a 'Test Selected' button is at the bottom right.

| Device ID | Device Name | Make & Model | Test Script |
|---------------|-------------|--------------|-------------------------|
| DC.CODEC-0041 | Conf 3 | Tand 600 | Check ISDN Port Failure |
| | | | |
| | | | |
| | | | |

You can run one device interactively, all devices interactively (one-after-another), or all devices on a schedule.

Testing Features Scheduling

Event Type is 'Test'.

Event Name is the test plan name.

Domain: Customer Name 1 Next Run: 02.21.2002-17.36.05 Event Type: Test

Event Name: ISDN Port Test Device: C1-DC-01

Select Schedule

Once, Start at: 12:00 on Feb 07 2002

Hourly, Start at: 00 minutes after each hour

Daily, Start at: 12:00 on Monday Friday
 Tuesday Saturday
 Wednesday Sunday
 Thursday

Weekly, Start at: 12:00 every Monday

Monthly, Start at: 12:00 on the 01 day of each month

Soak, every: 05 minutes
from: 12:00 on Feb 07 2002
until: 12:00 on Feb 07 2002

Use 24-hour clock to set all times

Data Period

From: Feb 07 2002
To: Feb 07 2002

Increment for cyclic reports
Cyclic reports increment both From and To dates based on scheduled run dates.

Increment for cumulative reports
Cumulative reports increment To date only based on scheduled run dates.

Resource Failure

Queue for resources

Inquire

Cancel

Reschedule, delay 07 minutes

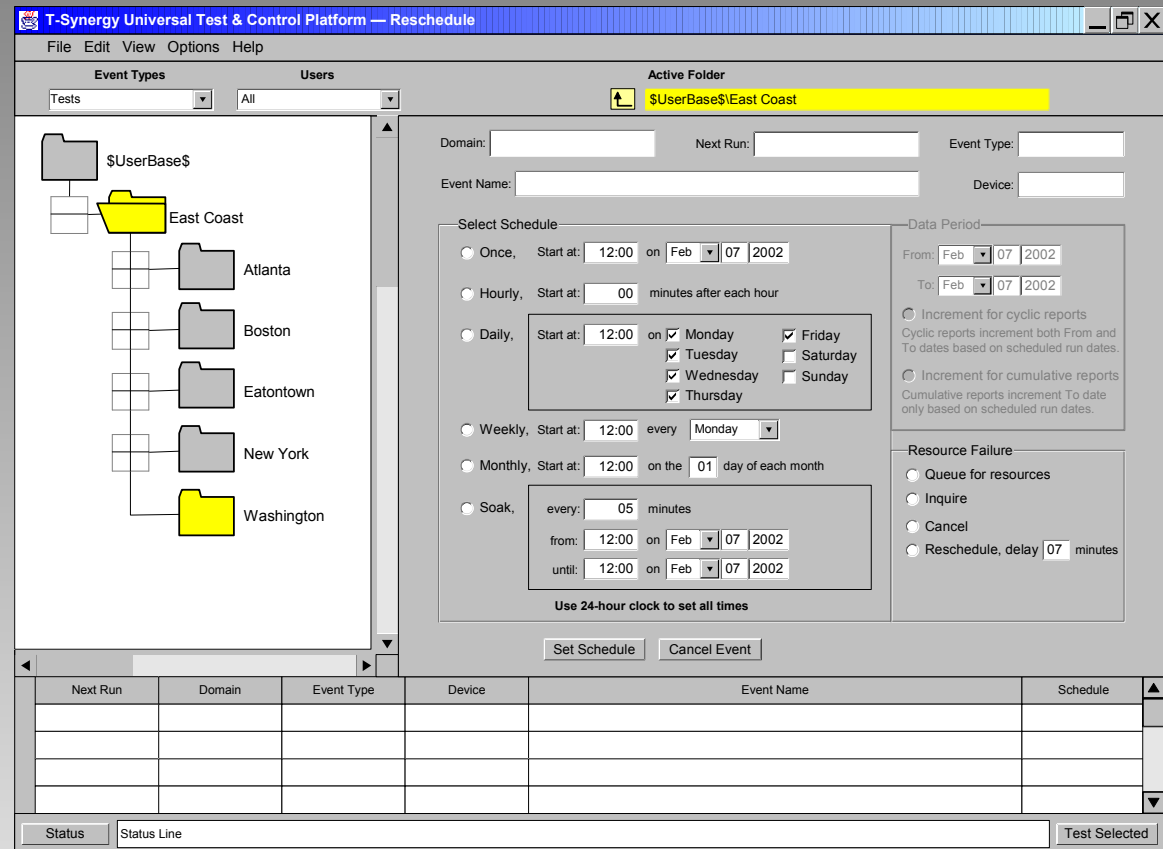
Set Schedule Cancel Event

- The same Set Schedule popup is used for all scheduling activities.
- Repetitive events are scheduled one-at-a-time. (For example, Tuesday's test is scheduled when Monday's test completes.) The Next Run timestamp will be set when the prior event completes and reschedules. (A periodic cron job backs this up so that event failures will not cause future events to be canceled)

Testing Features

Reschedule

Testers can view all test events within their span-of-control and can reschedule or cancel events that they created.



The working pane contains the Set Schedule popup used for all scheduling activities. Selecting an event from the list pane populates the working pane.

Testing Features

Interactive Test Window

The test script starts automatically, loads the control panels, and waits for user action.

Click **Continue** to proceed to the next step when finished with the control panel. The final steps usually analyze results.

Active Test

Test Plan Name:

Device ID: DC-CODEC-0041 **M&M:** Tand 600

Device Name: Conf 3

Script: Check ISDN Port Failure

ActionSteps: 3

| Step | Description | Status | Result |
|------|------------------|----------|--------|
| 1 | First ActionStep | Complete | 00 |
| 2 | Next ActionStep | Failed | 08 |
| 3 | Last ActionStep | Pending | |

Continue Exit

Call Progress

Originating Device Monitoring Device

Destination Device Monitoring Device

Step Log

Test Log

Origination End Point

ISDN Test Head Control Status History Configuration Diagnose/Repair

D-Ch Trace B-MUX Trace BERT

Call Type: Originate

Direction: Originate

Type: Bonded

Speed: 128 kbps (2-ch)

End Point Data

Far End: TC800

Number: 3803-005(BRI 1)

Action: Active V64 Loop

VIEW: CRV

BERT: Clear Loop Back Start Stop Loop Up Far End Error In Test

Analyze

Destination End Point

TC800 Control Status History Configuration Diagnose/Repair

Originate Call: Far End, Number, Call Type, Speed

Receive Call: Auto Ans, Manual Ans, Answer

Audio/Visual Control: Source, Audio, Video, Near End, Far End

MicroSpeaker Control: Mic Mute, Speaker Volume

Camera Control: Allow Far End Control, Zoom

Loop: Loop Back, Loop

ISDN B-Channel Status: B Channel, Status

Pan, Tilt, Save, Reset

Appropriate test equipment is selected by the test script and becomes the originating device. The selected endpoint becomes the destination device. (For some test scripts, the endpoint device becomes the originating device and the test equipment becomes the destination device.)

Job Aids

Job Aids

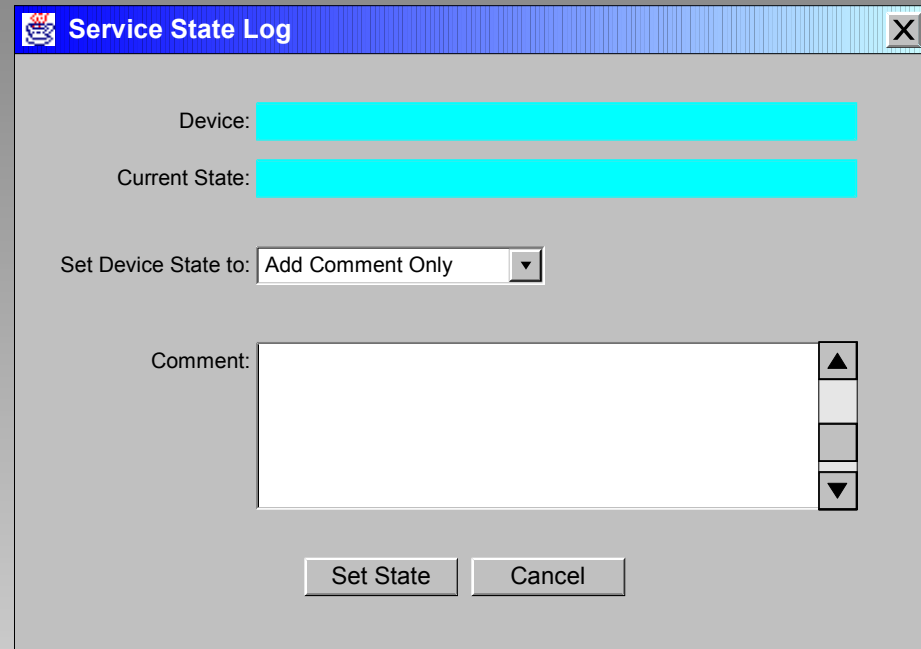
Service State Log

Device service state can be set from any monitoring or testing screen and from device configuration screens.

The **Svc Log** button at the right end of the control area opens the Service State Log dialog box shown at right.

The drop-down list provides the following options:

- Add Comment Only
- In Service
- OOS – Pre-Service
- OOS – Administrative
- OOS – Maintenance
- OOS – Called for Repair
- OOS – Repaired
- OOS – Repair Verification



The image shows a dialog box titled "Service State Log". It has a blue header bar with a close button (X) in the top right corner. The main area is light gray and contains the following elements:

- "Device:" followed by a redacted cyan bar.
- "Current State:" followed by a redacted cyan bar.
- "Set Device State to:" followed by a dropdown menu currently showing "Add Comment Only".
- "Comment:" followed by a large white text area with a vertical scrollbar on the right side.
- At the bottom, there are two buttons: "Set State" and "Cancel".

Service state in UTCP, UTCP+, and IMPACT can be enforced only for IP controllable devices.

Setting the service state generates a log entry and an SNMP output if the MIB parameters have been administered. This allows an external system to enforce service state.

Job Aids

History Search

Device history information in the database may be useful in diagnosing or repairing a problem.

The **History** button at the right end of the control area opens the Device History Search dialog box shown at right.

Users can include: only the selected device, all devices in the domain that are the same make and model, or all devices in the domain that are in the same class (for example, ISDN codecs).

The Service State Log, Alarms Log, and Tests Log can be separately selected, and a choice from a list of filters applied to each.

Device History Search

Device: [Redacted]

Current State: [Redacted]

FOR:

- This Device
- Same Make & Model
- Same Device Class

SINCE:

- Last 24 Hours
- Last 48 Hours
- April 18 2002

DISPLAY:

- Service State Log [OOS - All]
- Alarms [All]
- Tests [D-Channel IMUX]

Search Cancel

Information can be requested for the last ## hours, the last ## hours, or since a specified date. The number of hours defaults to 24 and 48, but can be reset by the user and persists while the user is logged on.

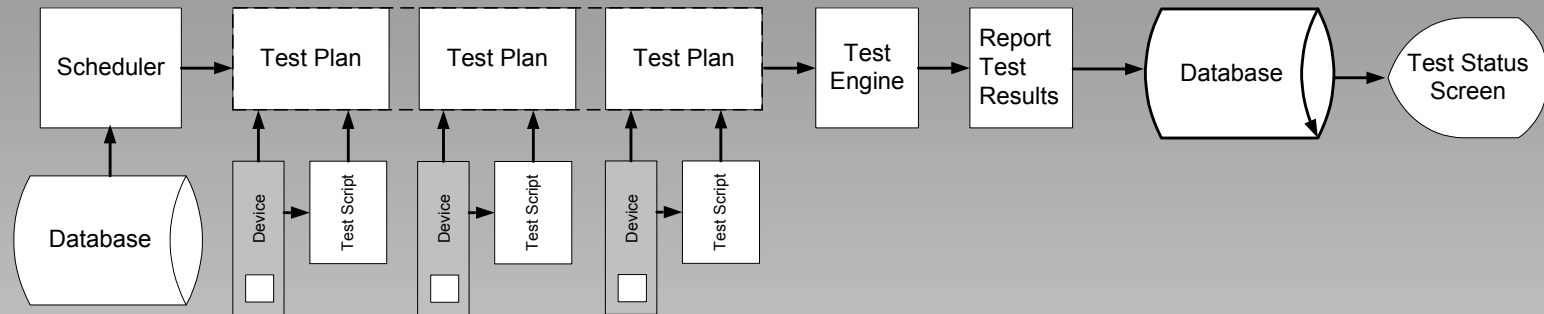
The selected information is presented in a separate window and can be resorted in that window.

Application Programming Interface

Application Programming Interface

Remote Test Execution Interface

Scheduled events are retrieved from the database and passed to the test engine as a test plan containing a device and a test script.



The test engine places the test results back into the database.

The Test Status screen displays test status and results from the database.

The **Remote Test Execution Interface** adds two modules with published SNMP MIB interfaces.

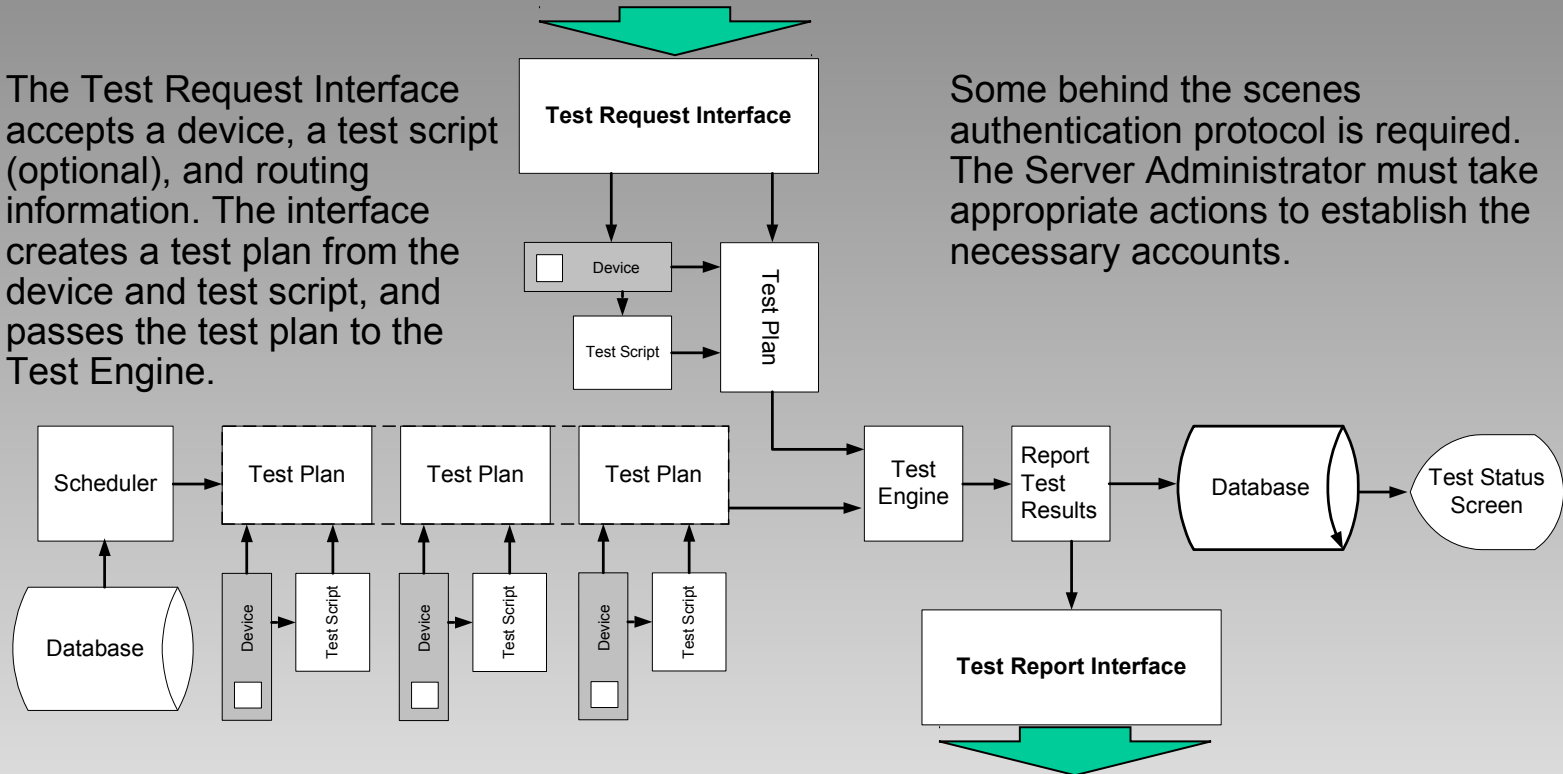
- **Test Request Interface**
- **Test Report Interface**

Application Programming Interface

Remote Test Execution Interface

The Test Request Interface accepts a device, a test script (optional), and routing information. The interface creates a test plan from the device and test script, and passes the test plan to the Test Engine.

Some behind the scenes authentication protocol is required. The Server Administrator must take appropriate actions to establish the necessary accounts.



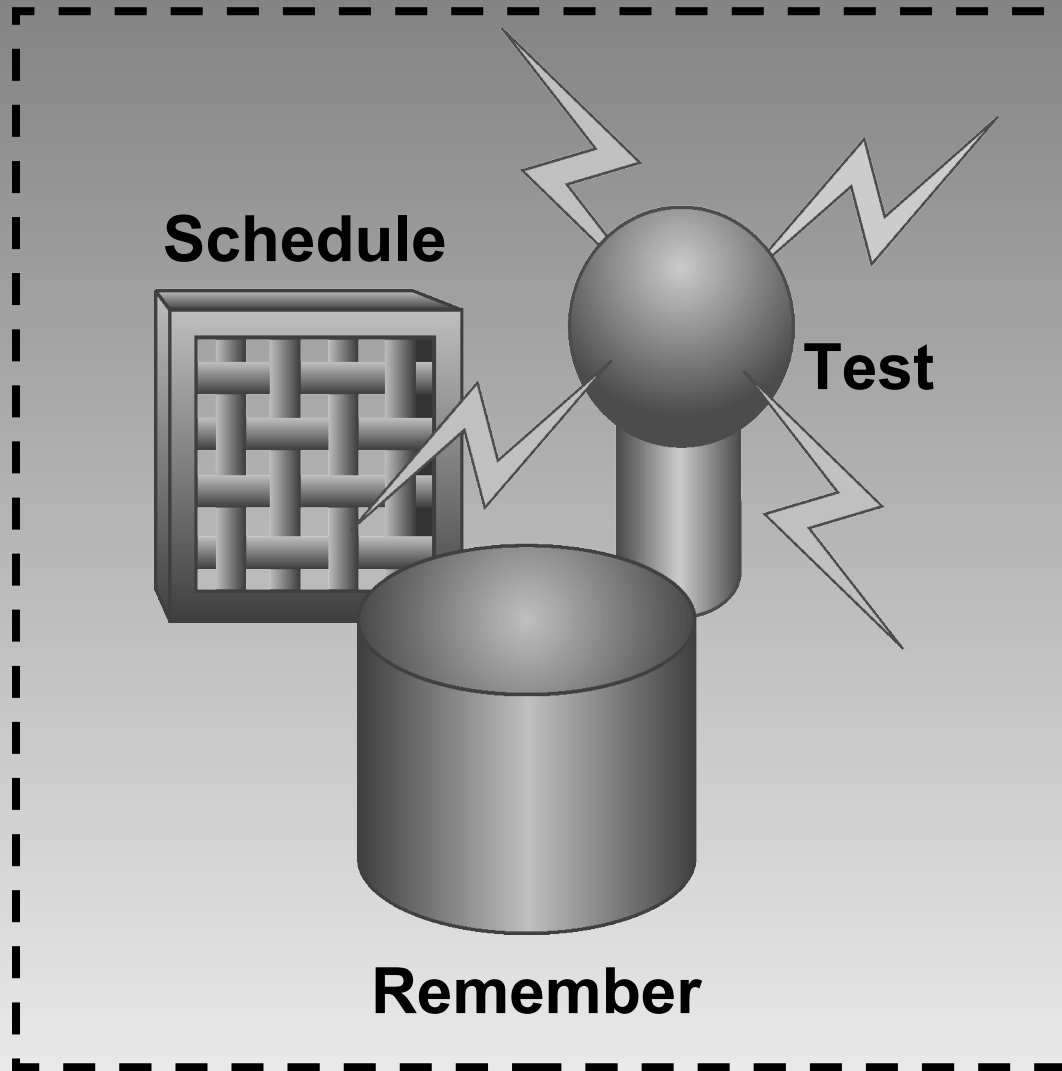
The Test Report Interface identifies the test result by means of its routing information. The interface packages the test results and transmits them according to its routing.

Application Programing Interface

Tracking Ticket Interface

To be added.

Integrate



T-Synergy, Inc.