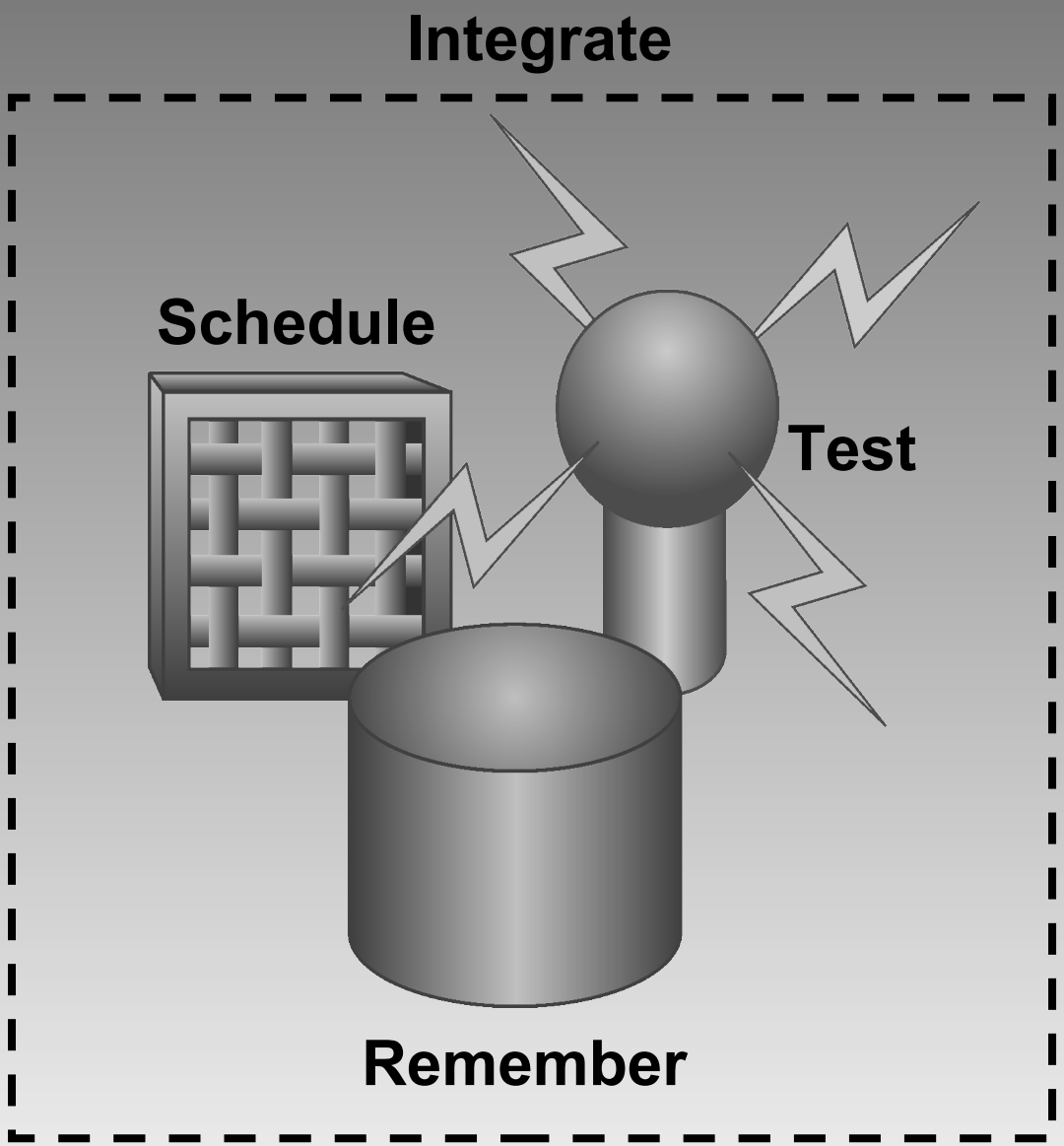
# Product Guide

**An Introduction to:**

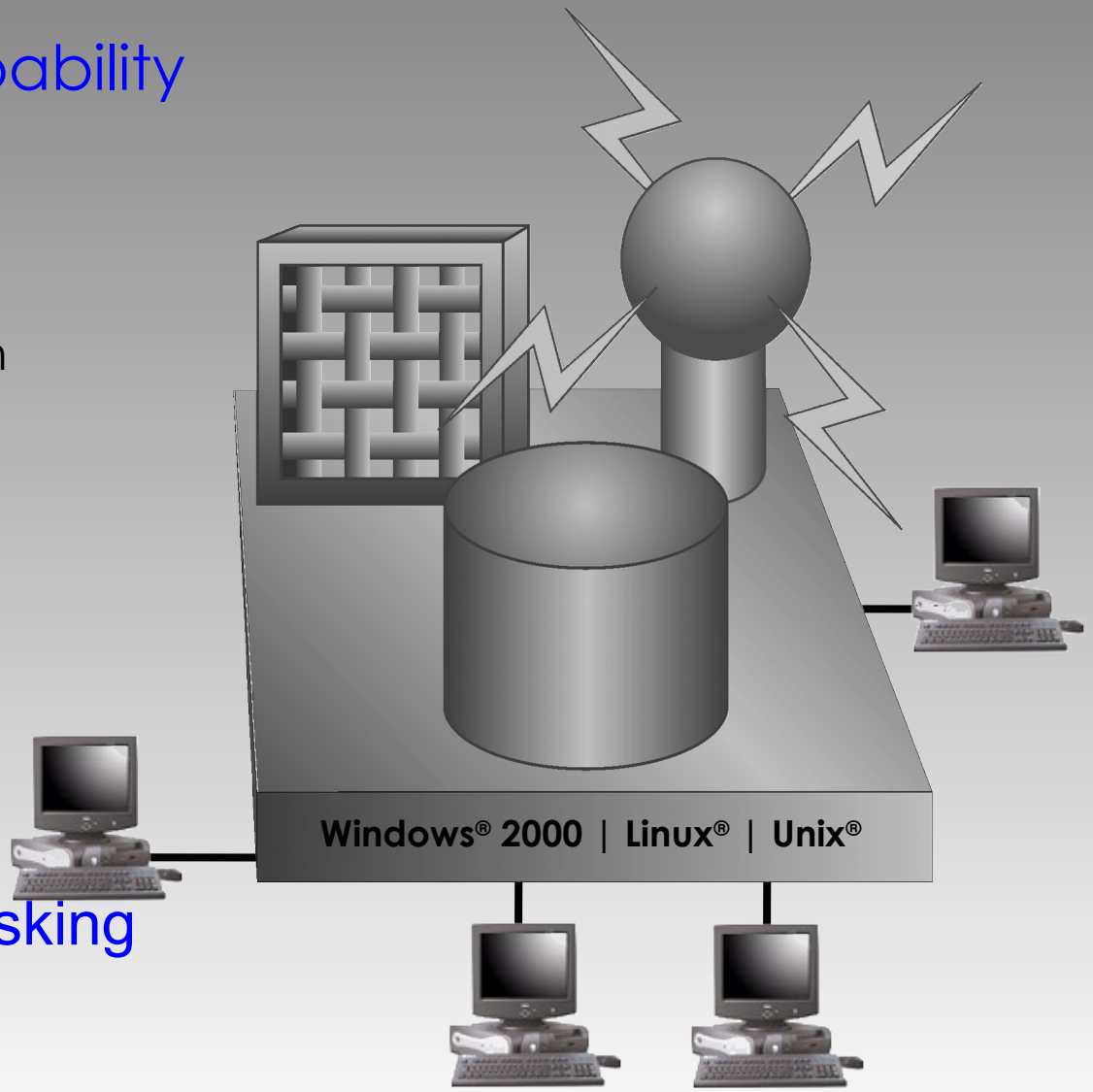
| | |
|---|---|
| UTP | Universal Testing Platform |
| UTP+ | Universal Testing Platform Plus |
| UTCP | Universal Testing & Control Platform |
| UTCP+ | Universal Testing & Control Platform Plus |
| IMPACT | Integrated Monitoring, Provisioning, And Coordinated Testing |



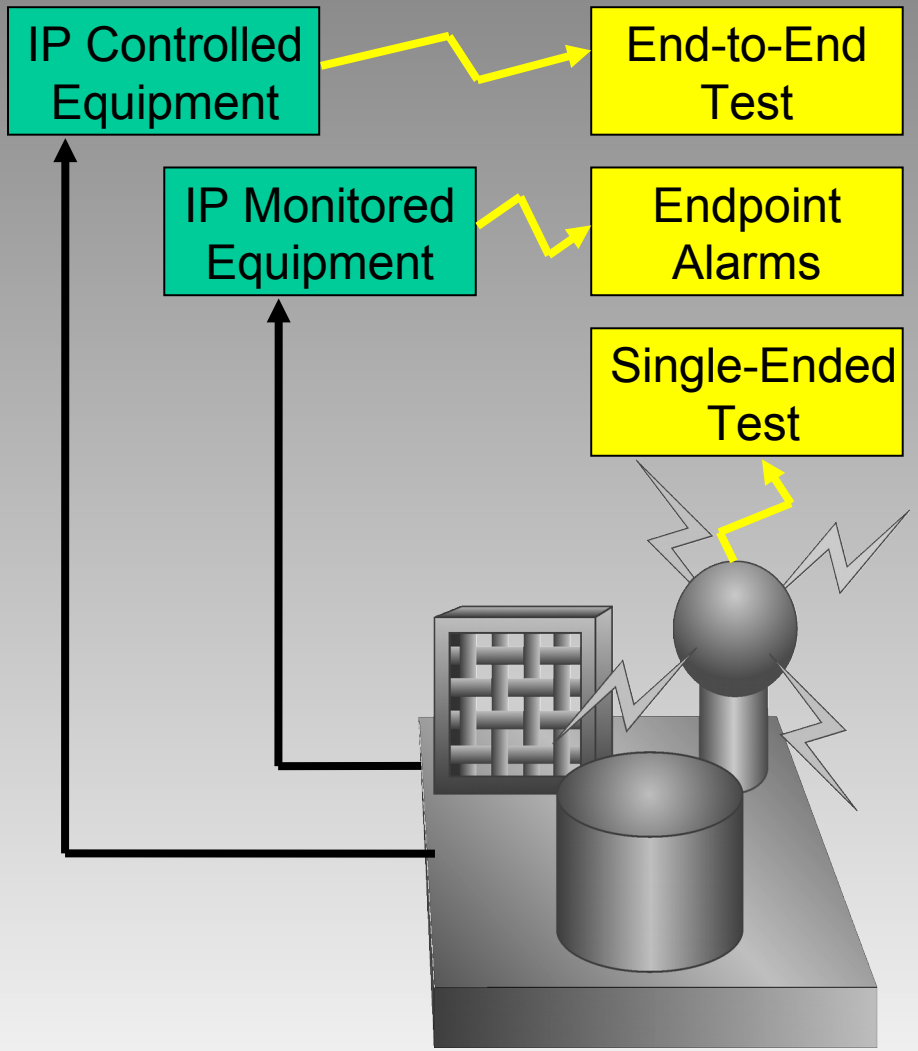
# Remotely Test Any Networked Equipment

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

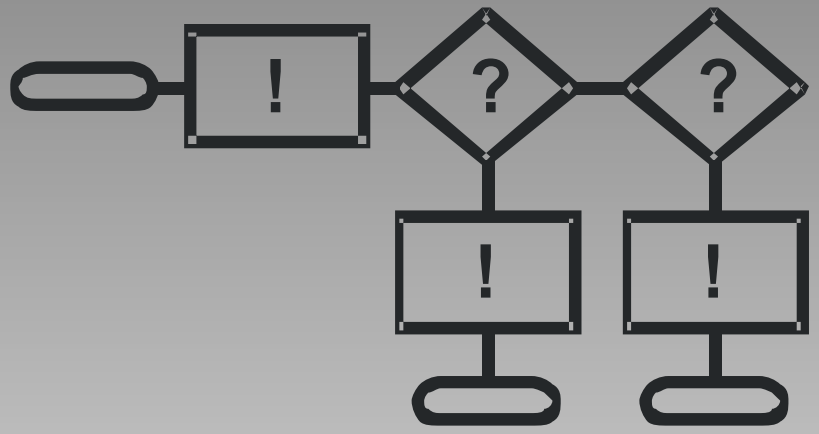


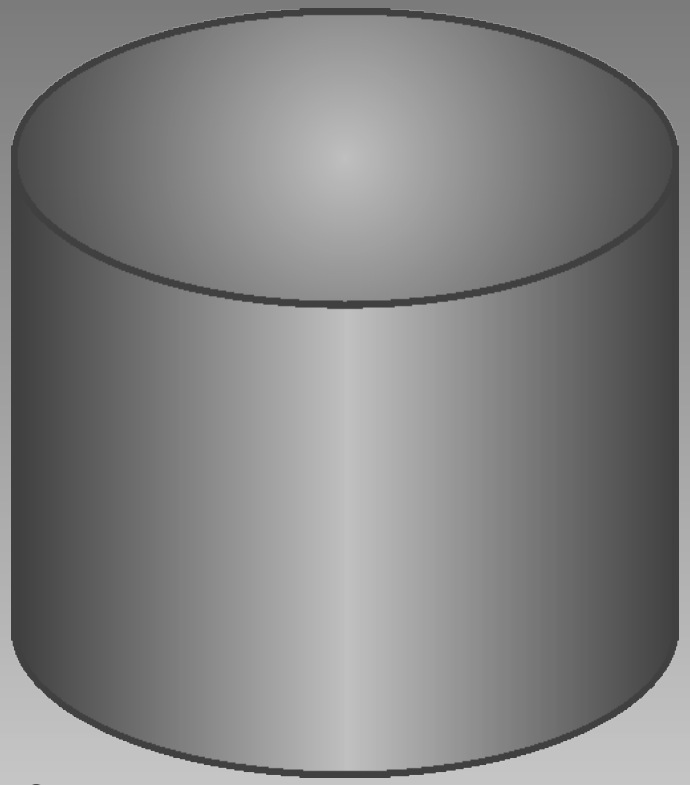

With IP controlled equipment, you can perform end-to-end tests as well as single-ended tests.

Selection:

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

# Test Scripts

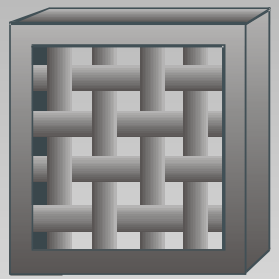


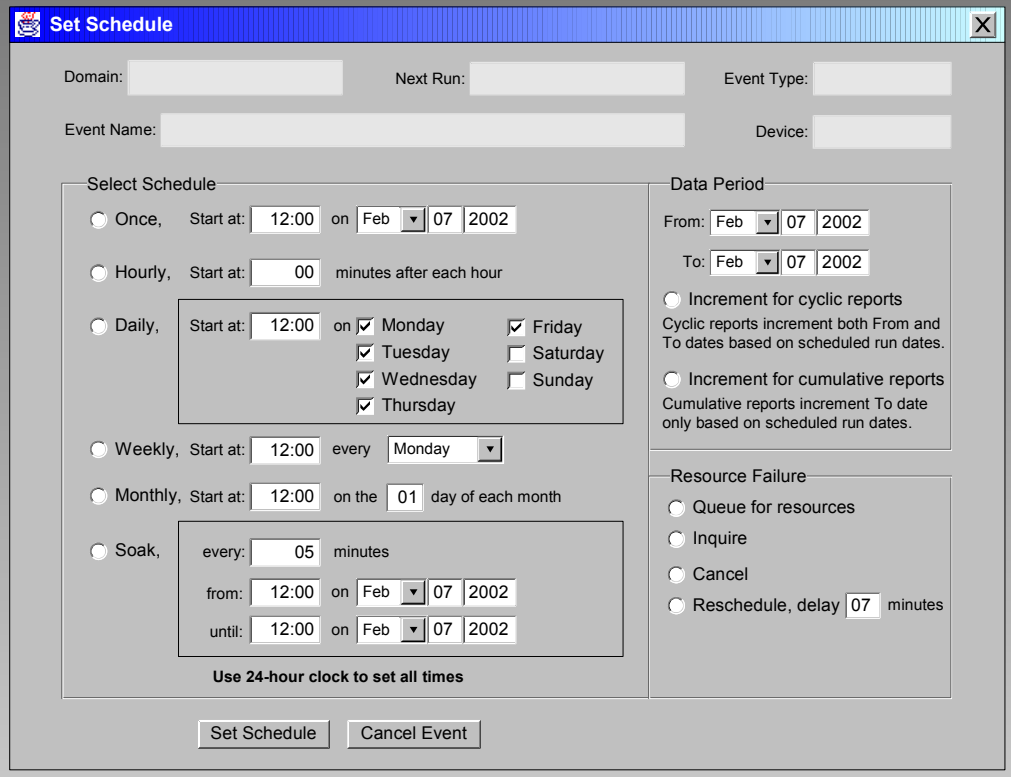



- Specify which set of tests to run.
- Pre-built test scripts contain multiple tests with branch logic to automate problem diagnosis.
- At the end of a script, the UTP Analyzer will translate the results into probable causes, and suggested actions.

# Scheduling

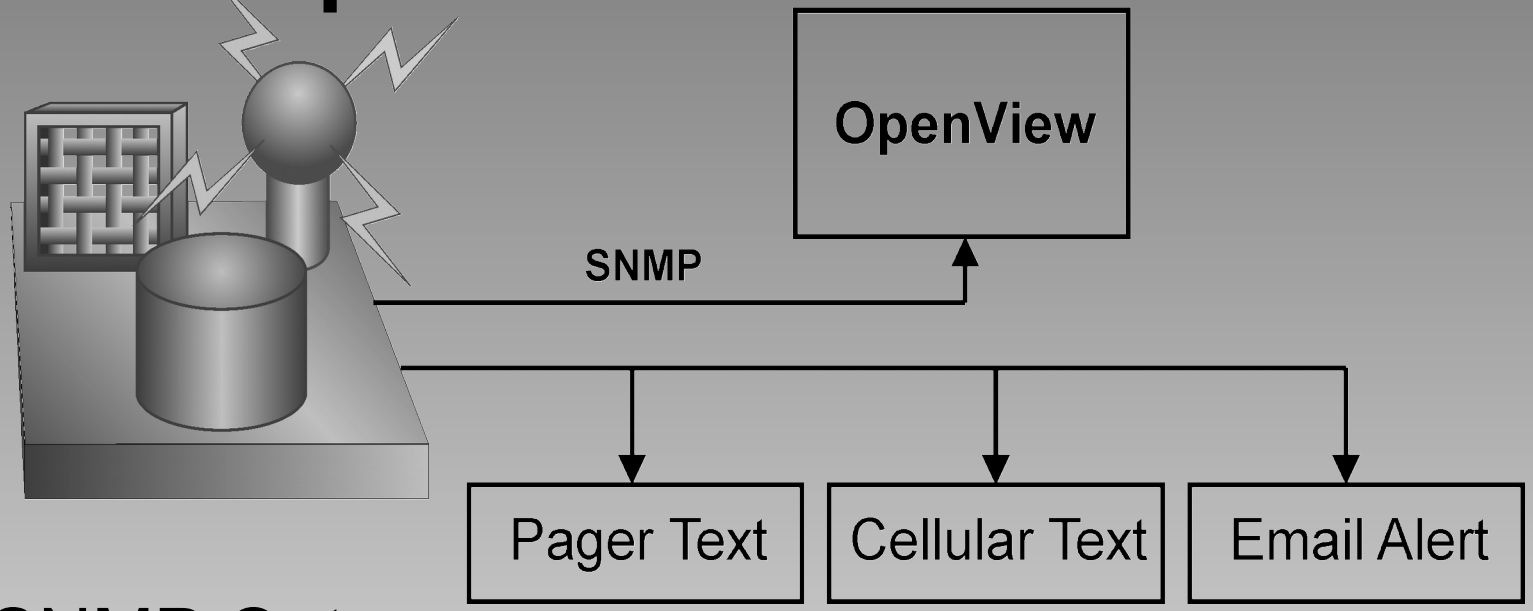
- Run Now, interactively
- Run Once
- Run Hourly
- Run Daily
- Run Weekly
- Run Monthly
- Soak





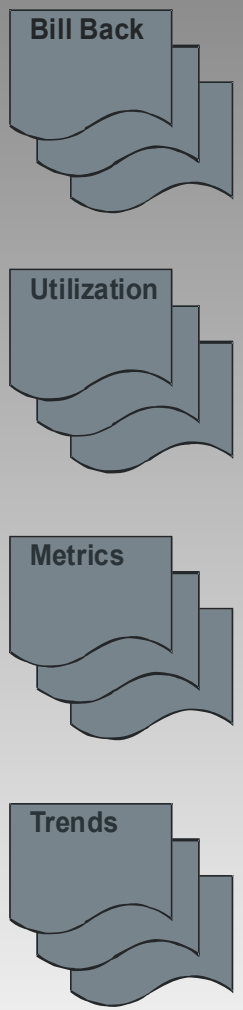

Schedule assurance tests before using components to insure equipment and link availability

# Alarm Export



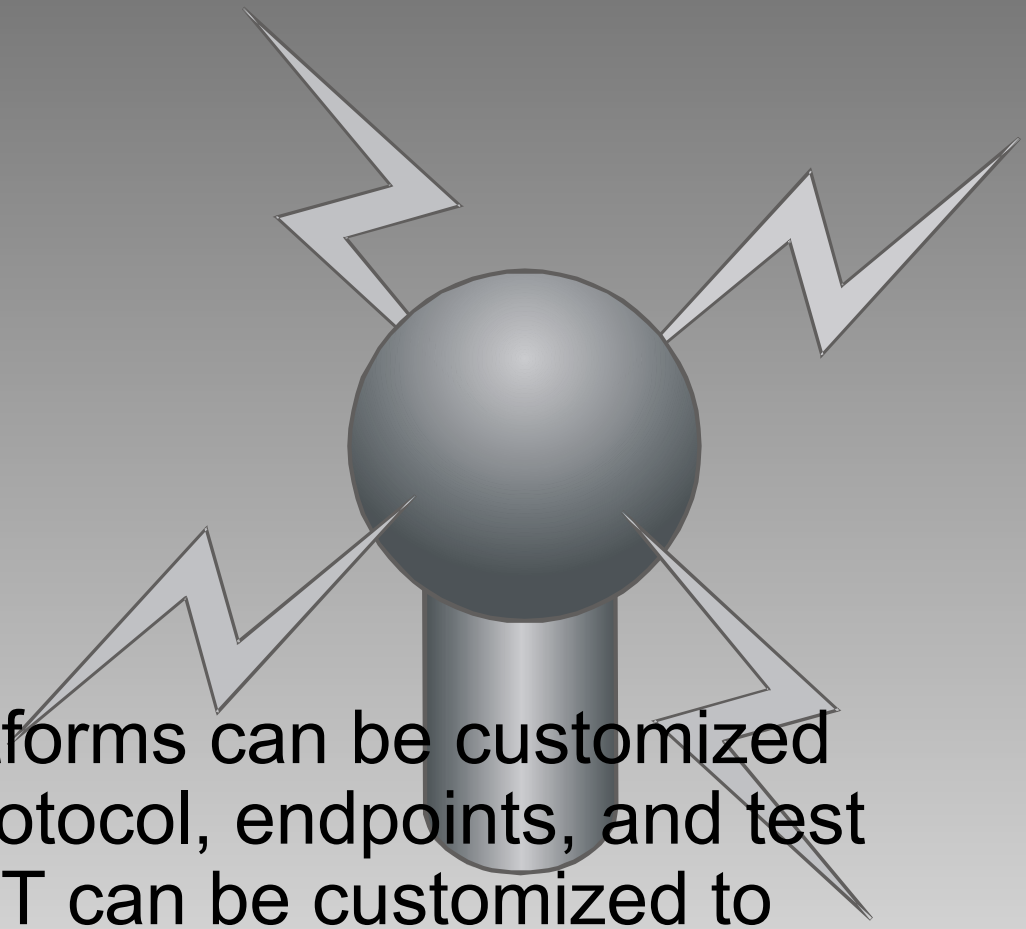

- SNMP Out
  - We'll ***tell*** HP OpenView when we find something wrong during a test
- Text Out
  - We'll even send pager text, cell phone text, or email wherever it needs to go for rapid response and repair

# 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) | | | | Yes | Yes | Custom |
| Exposed tracking ticket API | | | | Yes | Yes | Custom |
| Control network devices | | | | Yes | Yes | Custom |
| Control end-point monitoring devices | | | | Yes | Yes | Custom |
| Graphic status and device selection | | | | | | |
| Span-of-Control for users | | | | Opt | Opt | Custom |
| Scalability | | | | 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

# 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.

# 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).

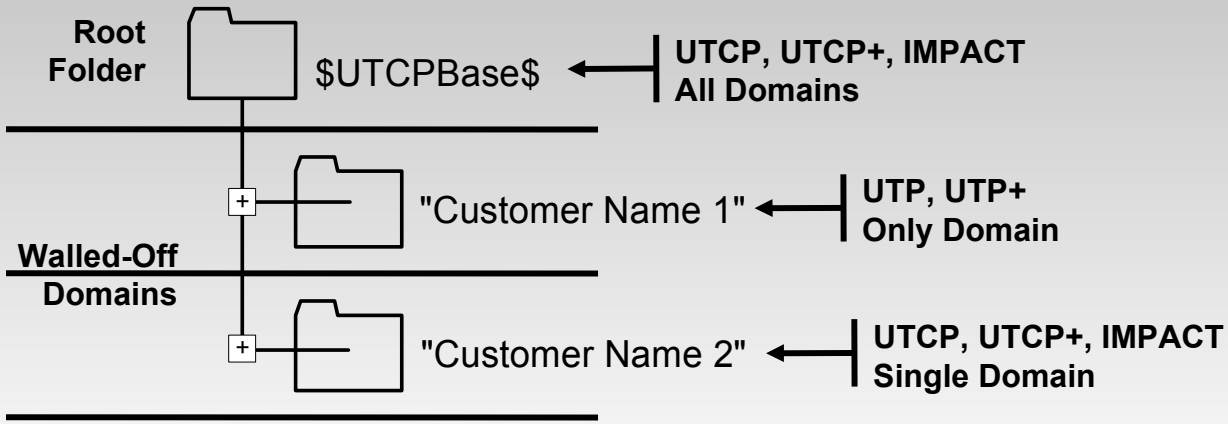
Each user can be assigned one or more permission groups and the features will be active simultaneously.

# 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.

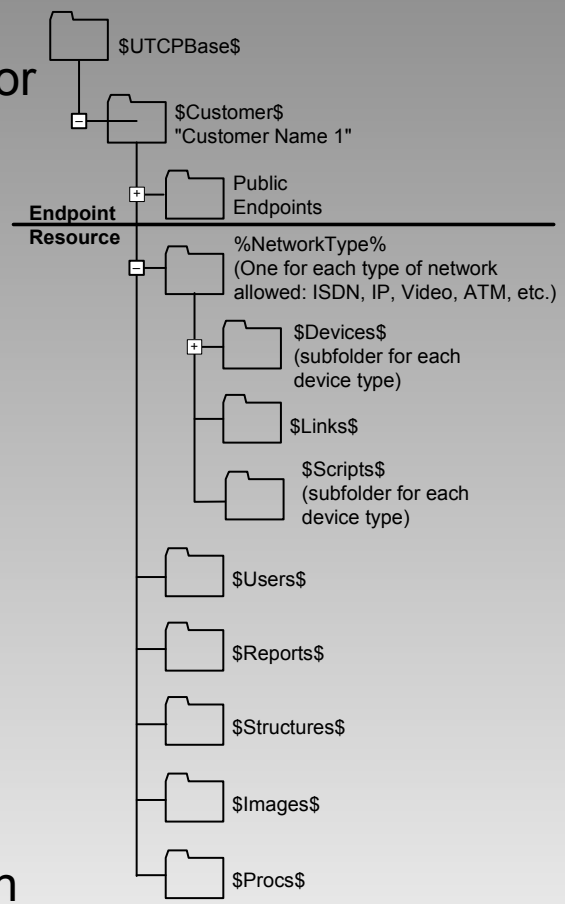
UTP and UTP+ are single-domain systems.

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



# 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

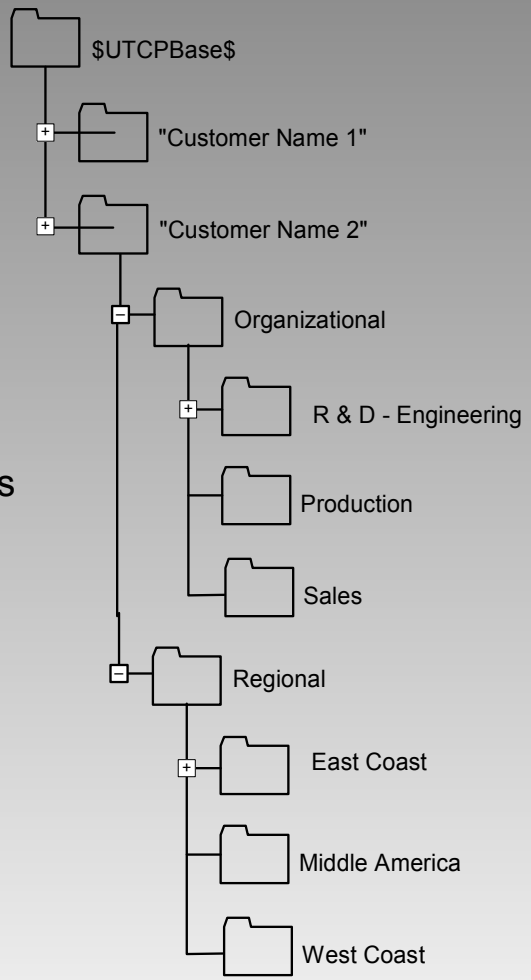
Endpoint directories are used only for end point device selection and endpoint status display (color of the folder is highest alarm state lower down in hierarchy).

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.




All Domains

One Domain

One Domain

All Departments

One Department

One Department

One Department

All Regions

One Region

One Region

One Region

# 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.

# 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

# 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

# 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.

# 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)

# 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

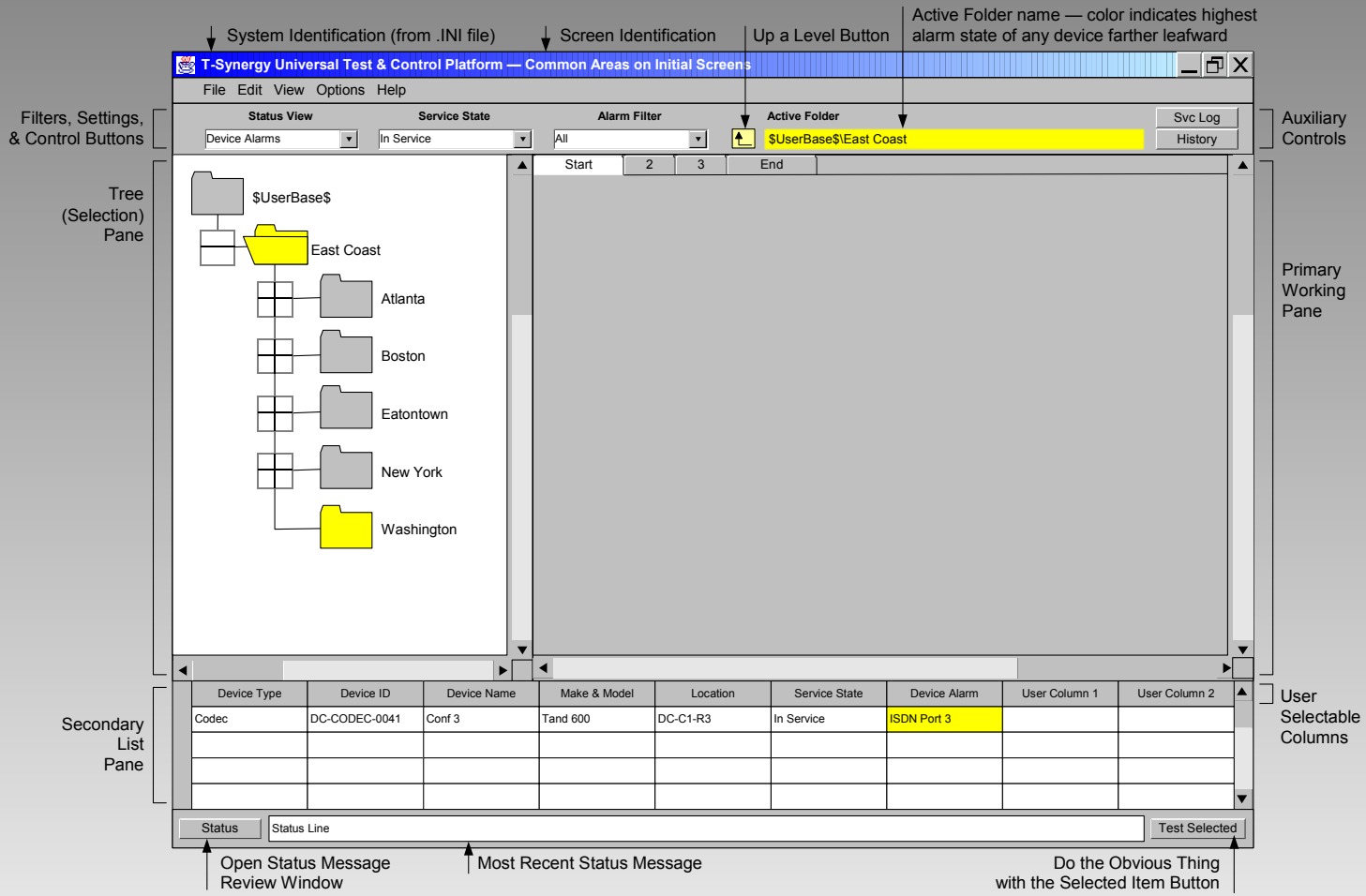
For UTCP and IMPACT, the **Monitoring** permission group adds:

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

# Graphical User Interface

# Graphical User Interface

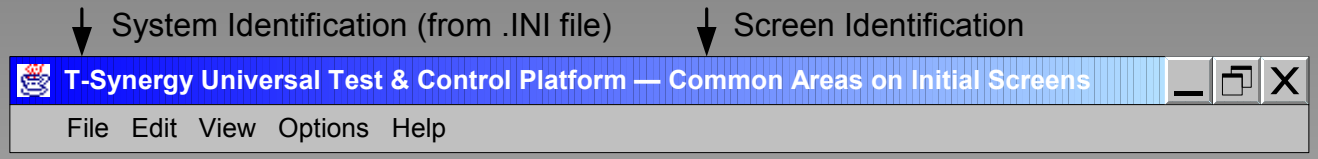
# Consistent Look and Feel

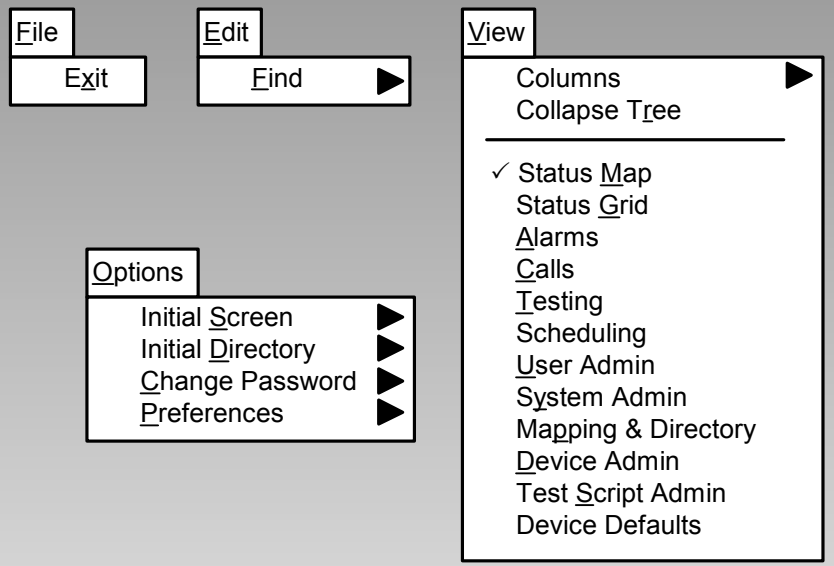



All of the main screens that you work from have a similar format.

# Graphical User Interface

# Titlebar & Menubar




## Edit menu:

- Searching for specific folders or devices

## View menu:

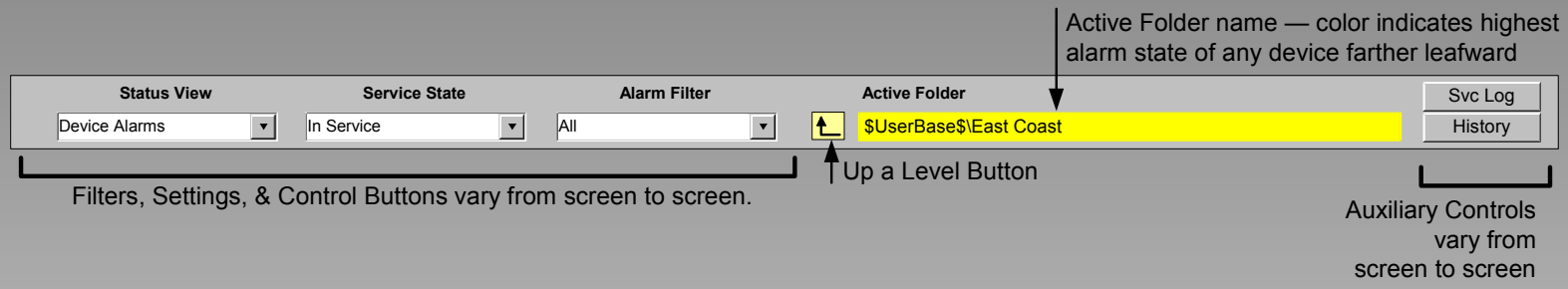
- User selection of columns (and column order) in the list window
- Selection of screens (functions) matching the user's privilege
- Other functions as required

## 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.

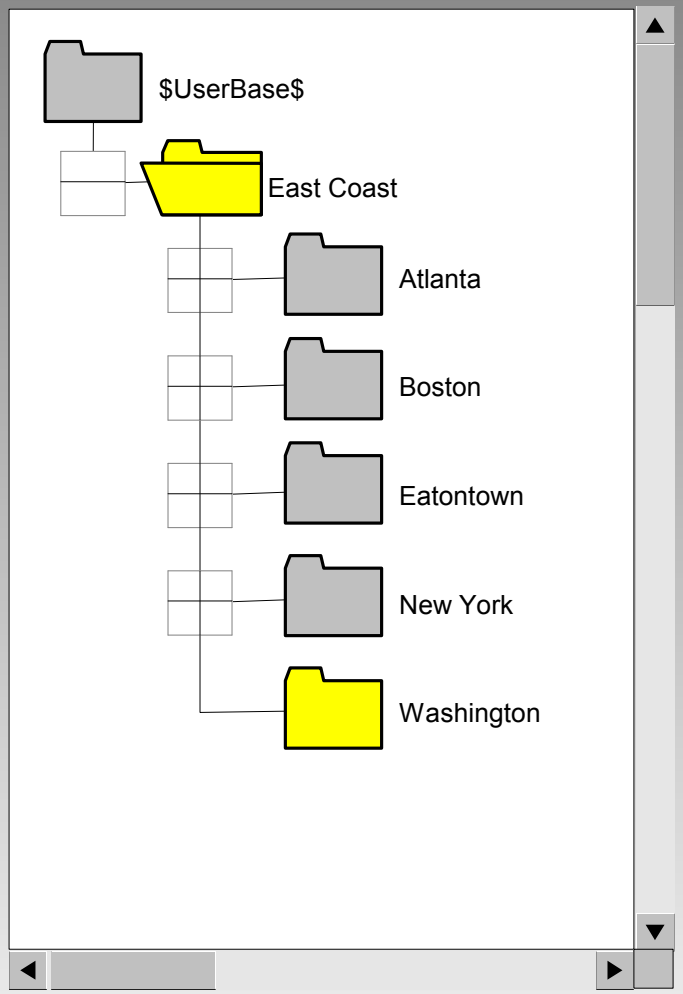
# Graphical User Interface
# Controls Area




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.

# Tree Selection Pane

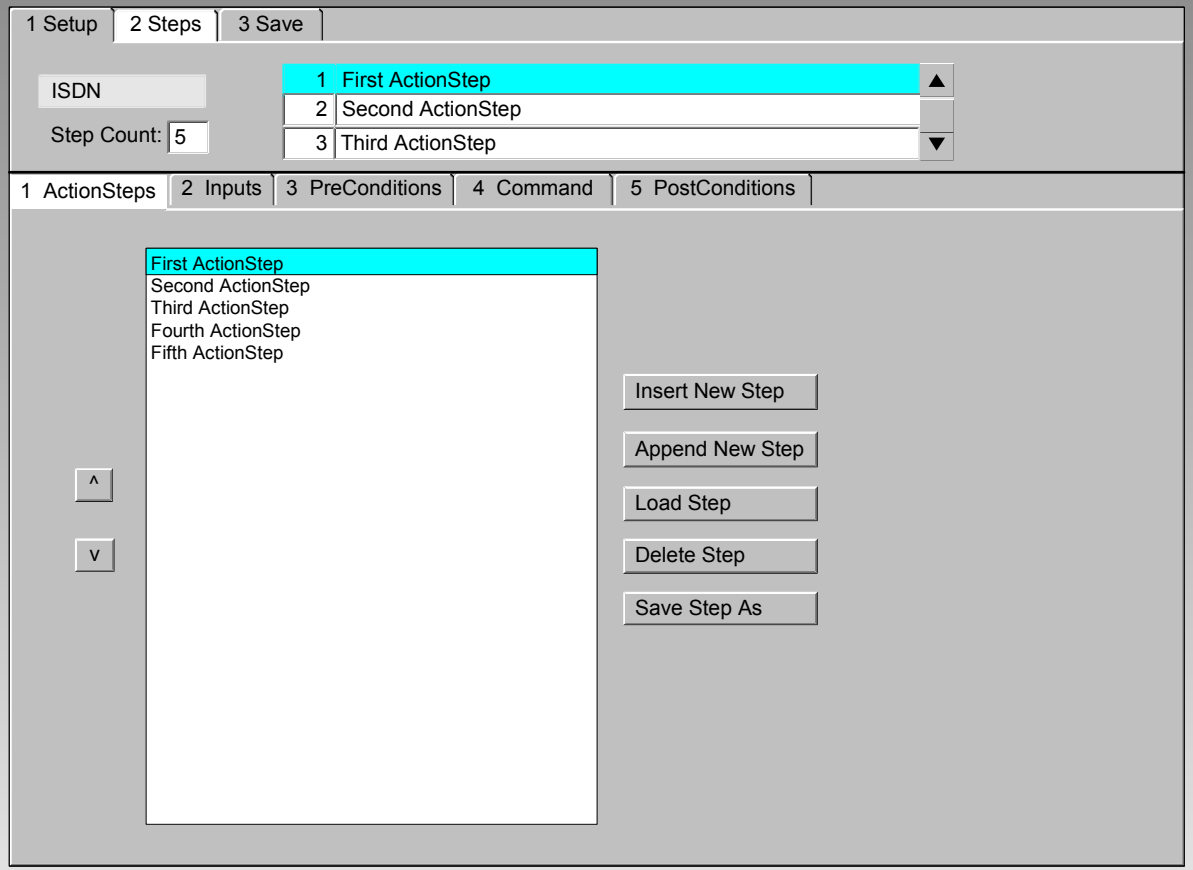



The **Selection Tree** is present on all basic screens. Selecting a folder limits the scope of the screen to that folder and subfolders.

- 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

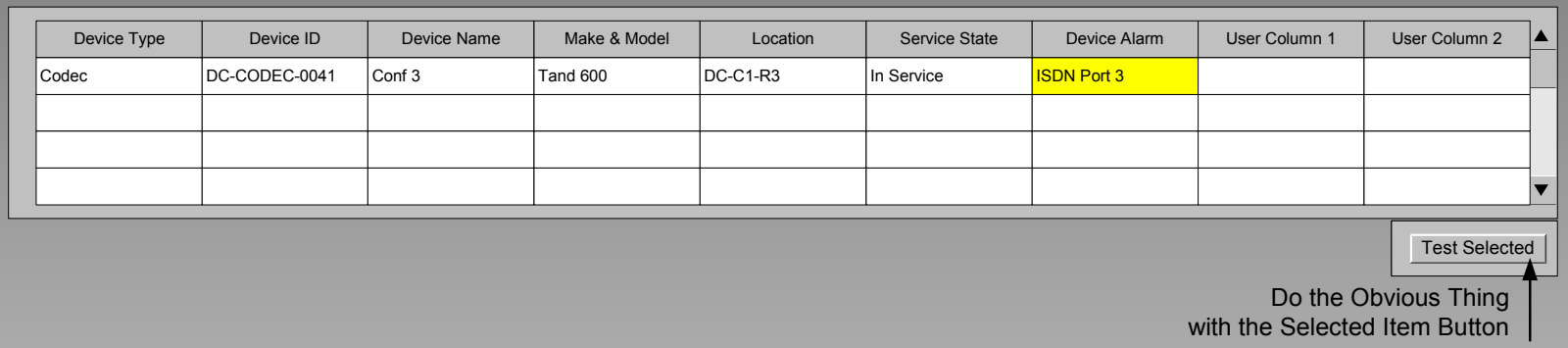



The **Working Pane** is present on all basic screens. This pane contains most of the controls and fields that you will need to accomplish a specific task.

- 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

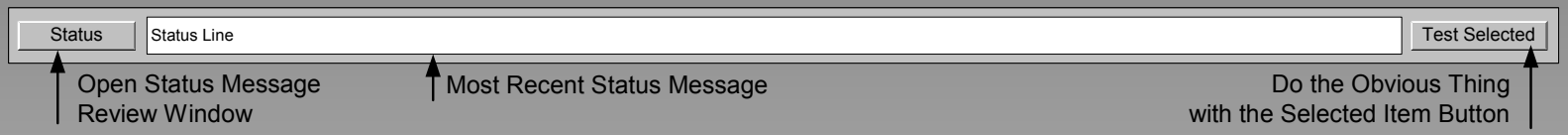



The **List Pane** is present on many basic screens. (It's blank when it's not needed). This pane provides a list to select items from.

- 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.

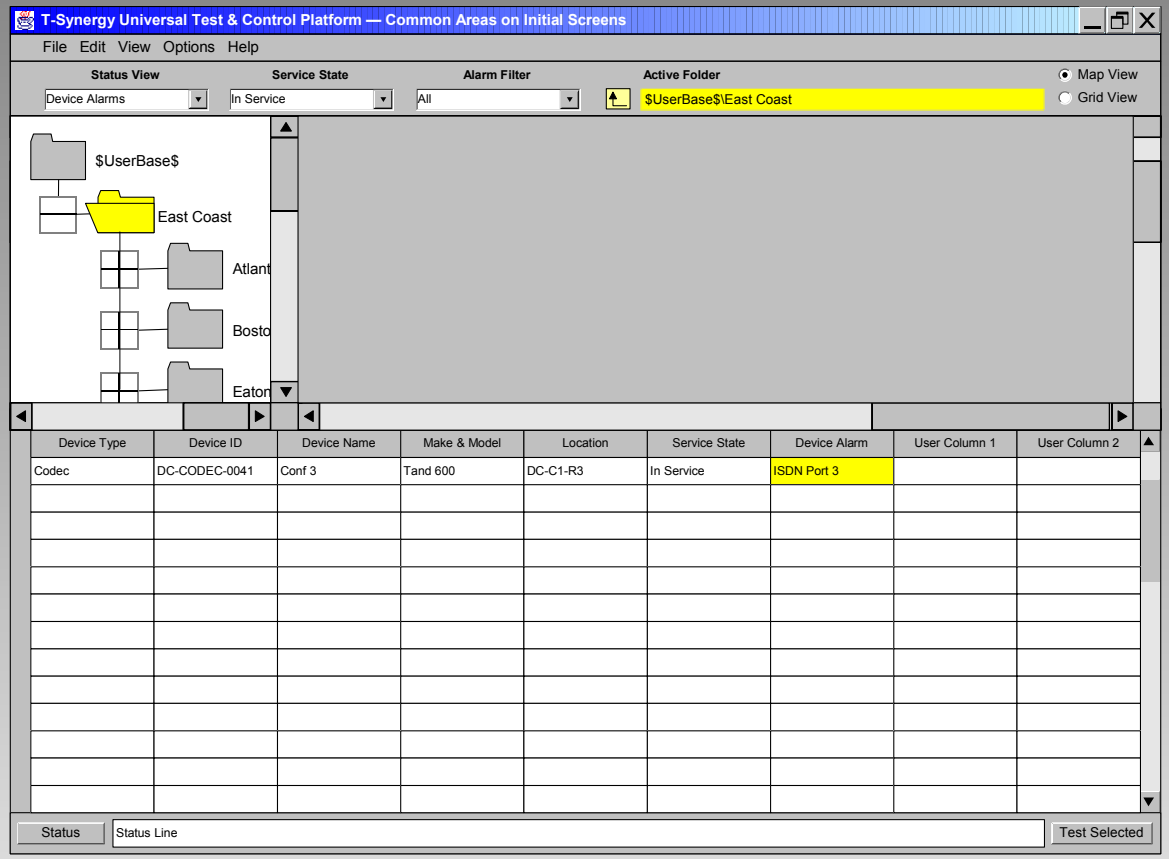
- The most recent status message tells you what is happening or has just happened.
- The **Status** button at the left end opens a window where you can review all the status messages since you logged on (including changing screens).
- The **Test Selected** or **View Selected** button at the right end 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

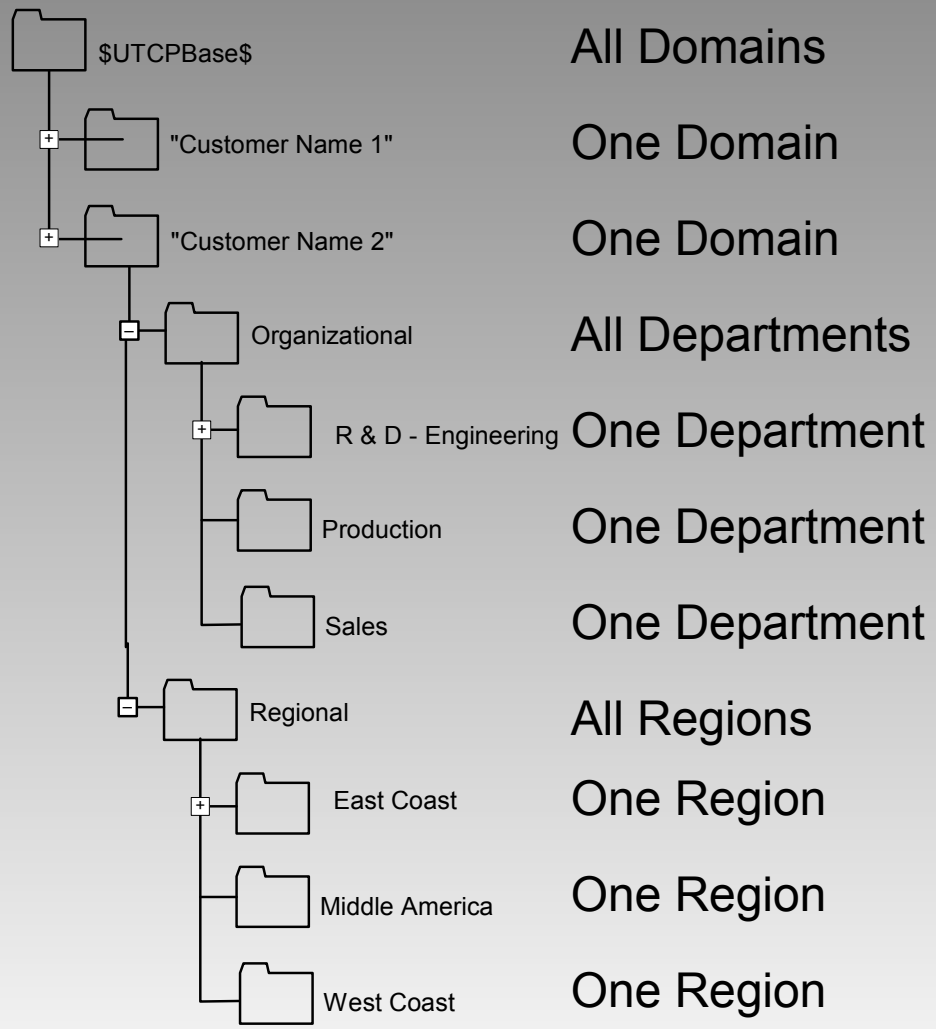
# Permission Groups by Product

| 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 |

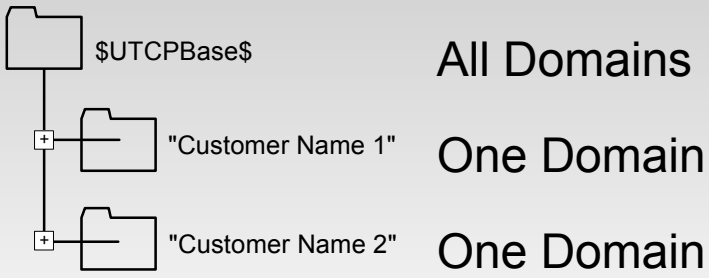
## User Administration

# User Base Directory

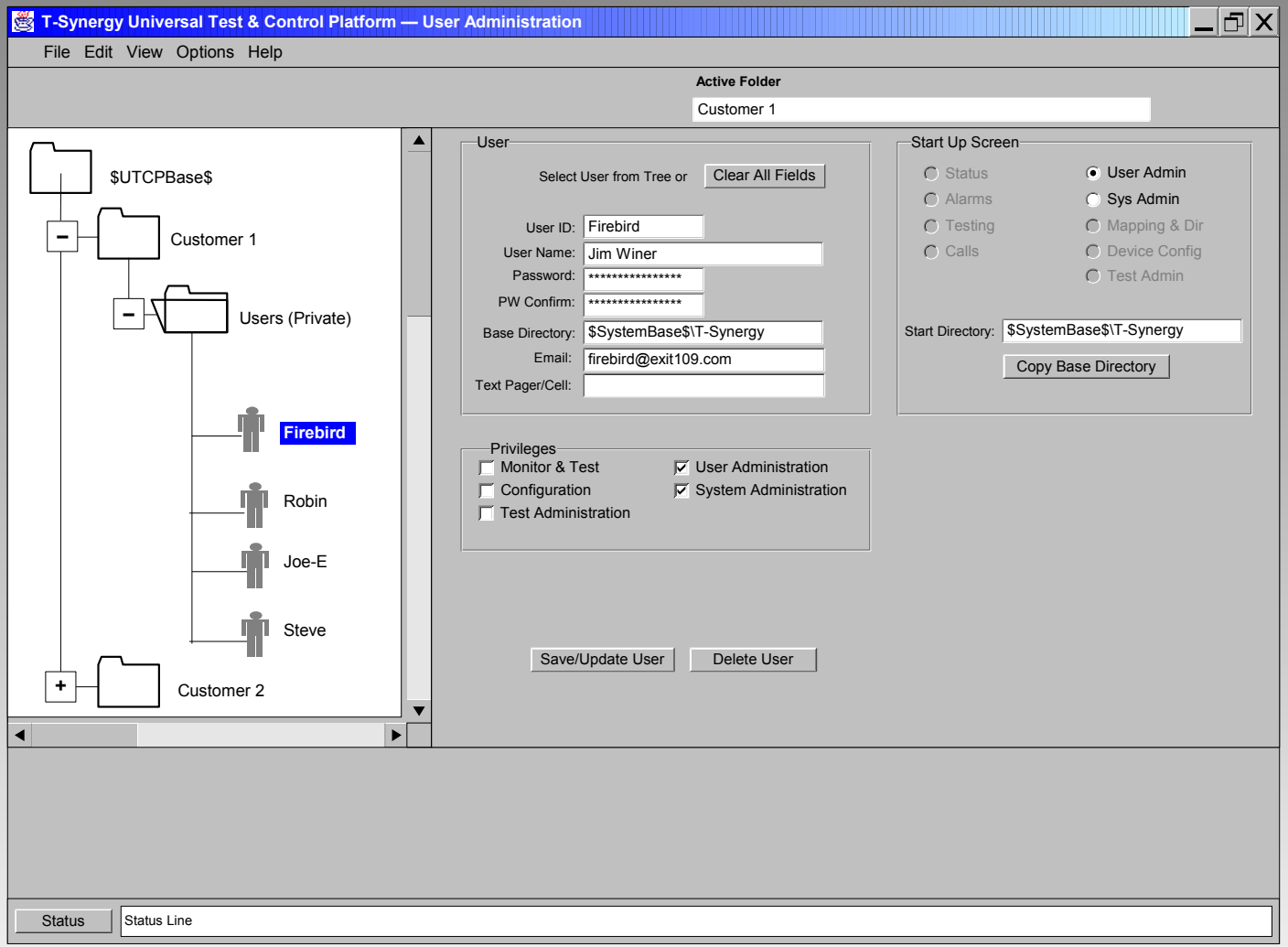
Monitoring, Testing and Configuration span-of-control is determined by the base directory in the endpoint hierarchical structure as shown at the right.



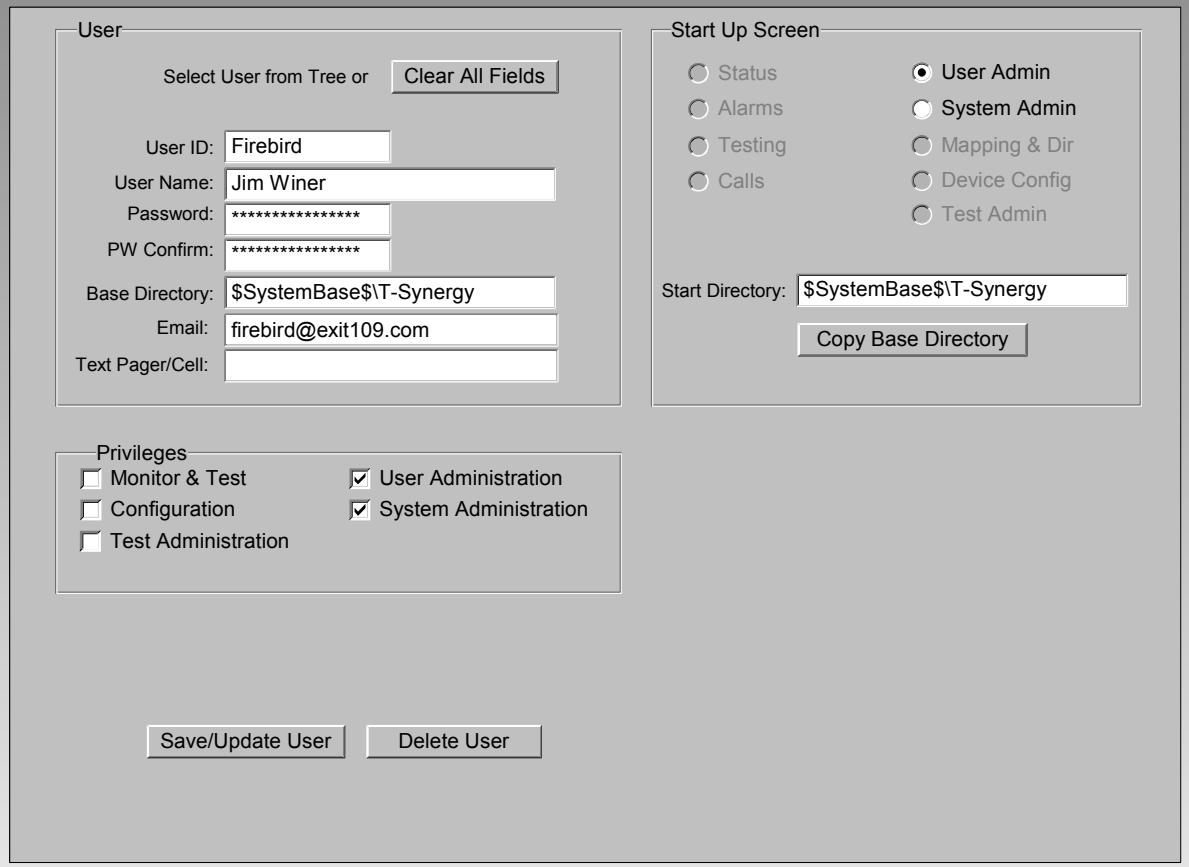

Administrators have a span-of-control determined by the folder at the top of their endpoint folder hierarchy (domain).



# User Administration
# Screen - Overview



# User Administration
# Working Pane



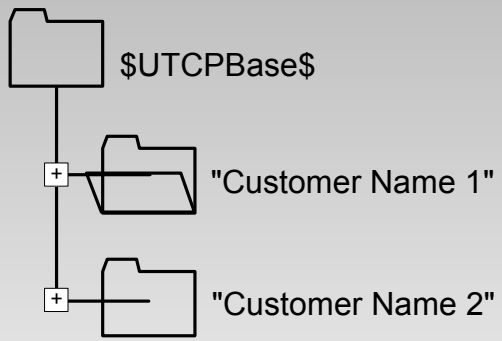

- The user's privileges determine which screens and functions are available to each user.
- The user's base directory determines the span-of-control and structural trees available to each user.
- The user can modify his own start up options and change his password.

# System Administration

# 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**

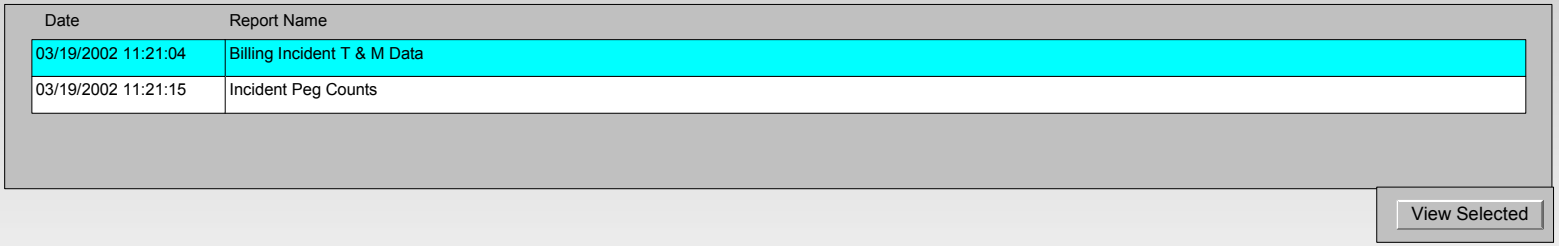

**IMPACT**
**One Domain,**
**Some Domains,**
**All Domains**

# System Administration

# Billing

Data collection and offloading is on a domain basis.

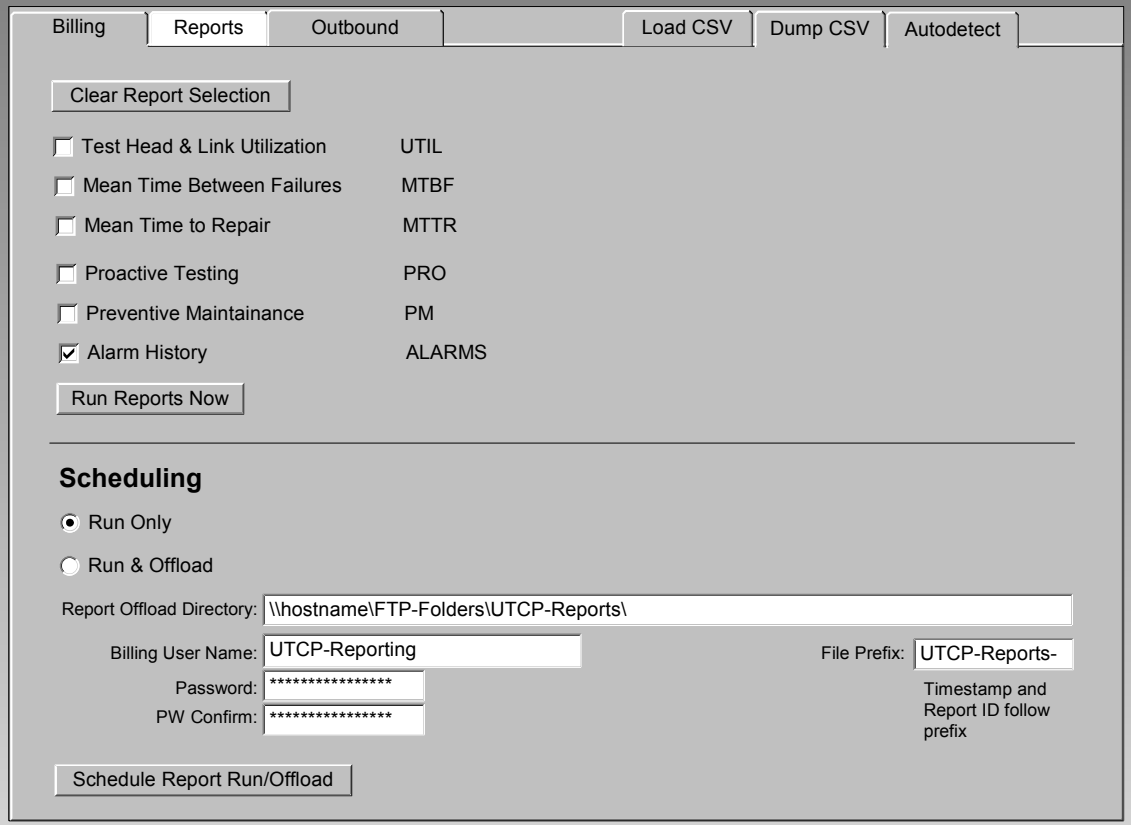
Raw data is used for billing. The data is offloaded as .CSV files.

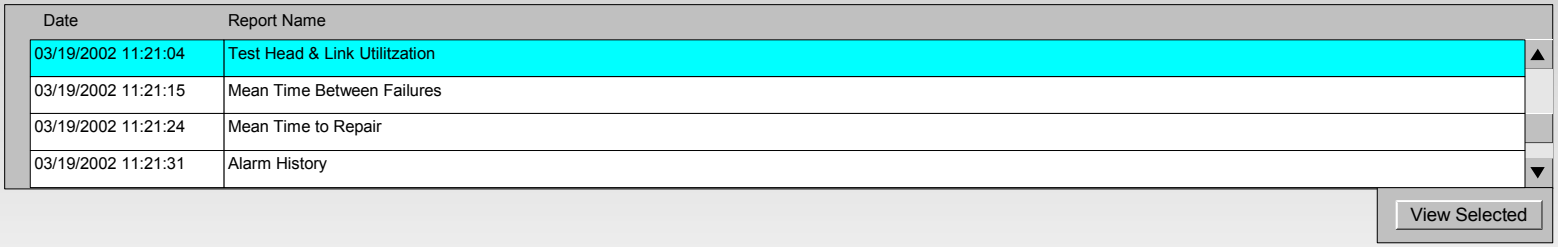



# System Administration

# Reporting

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



System Administration

# Ad-Hoc Reporting

To be added.

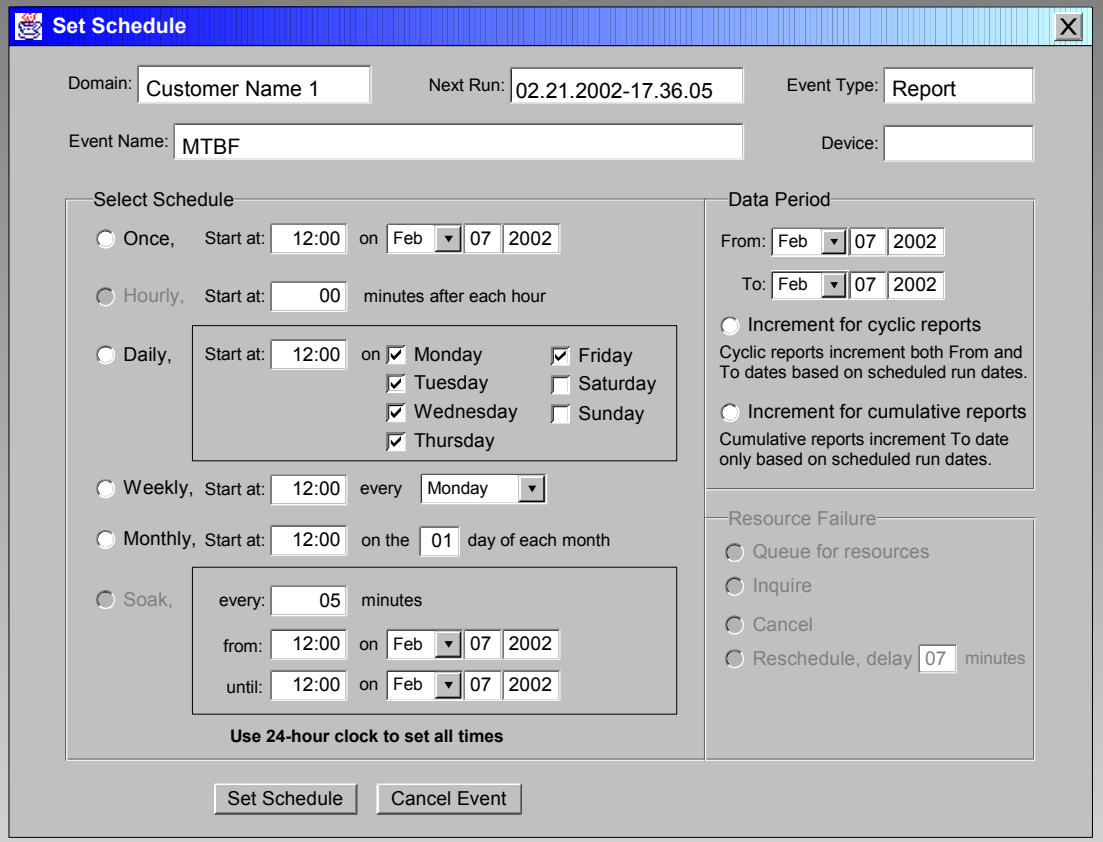
# System Administration

# 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).

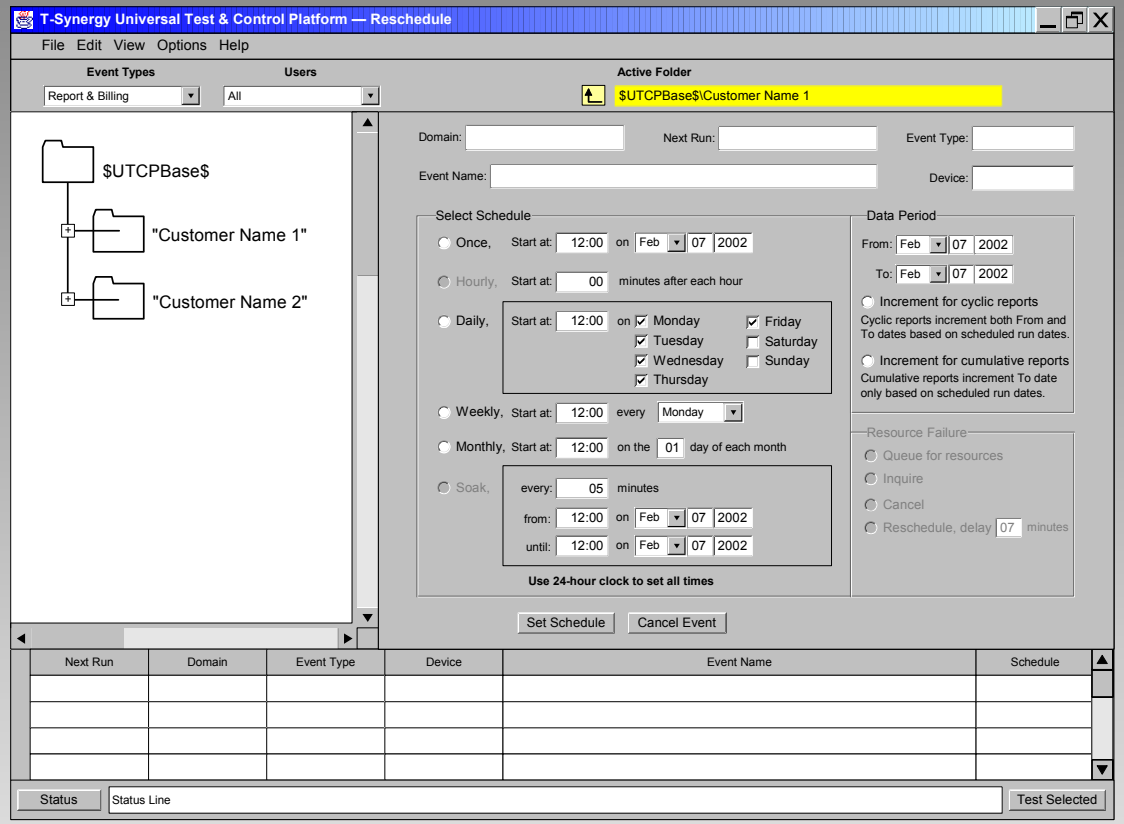



- The same Set Schedule popup is used for all scheduling activities.
- Repetitive events are scheduled one-at-a-time. (For example, Tuesday’s event will not be scheduled until Monday’s event completes.) The Next Run timestamp will be set when the prior event completes and reschedules. (A periodic cron 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.

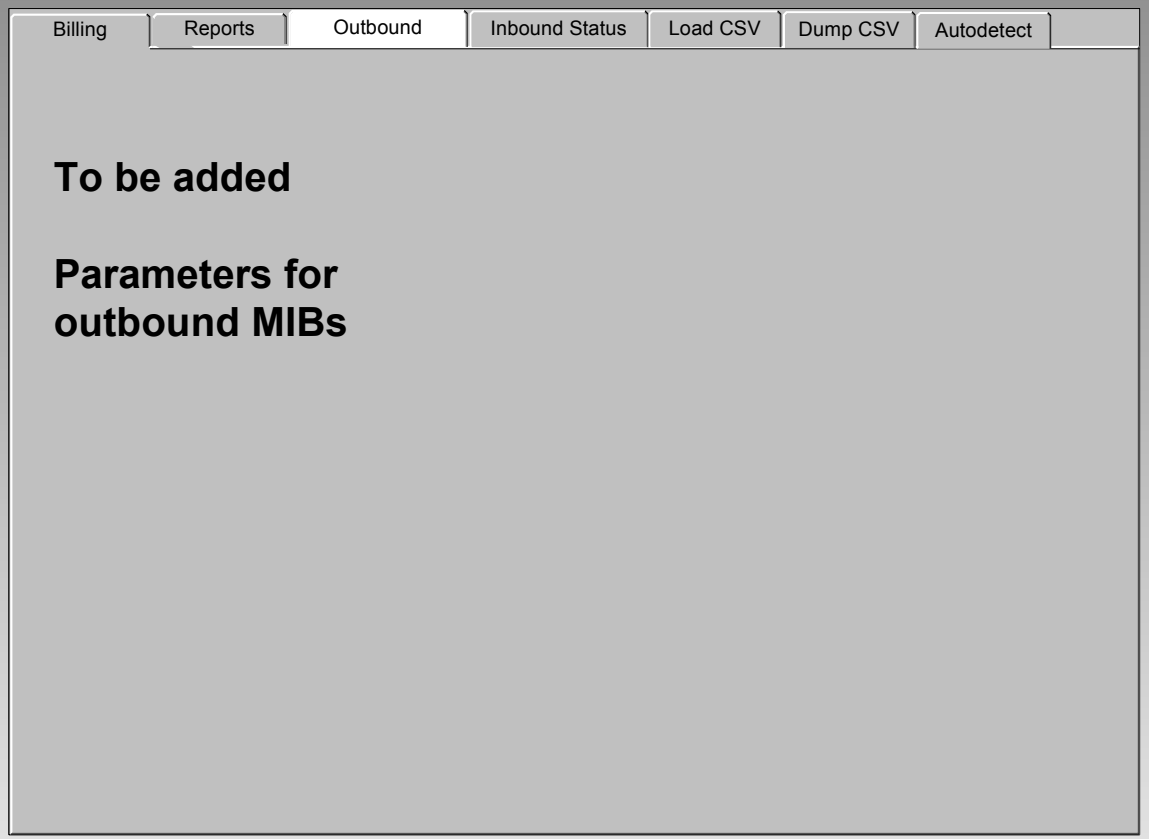



The working pane contains the Set Schedule popup used for all scheduling activities. Selecting an event from the list pane populates the working pane.

# 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.

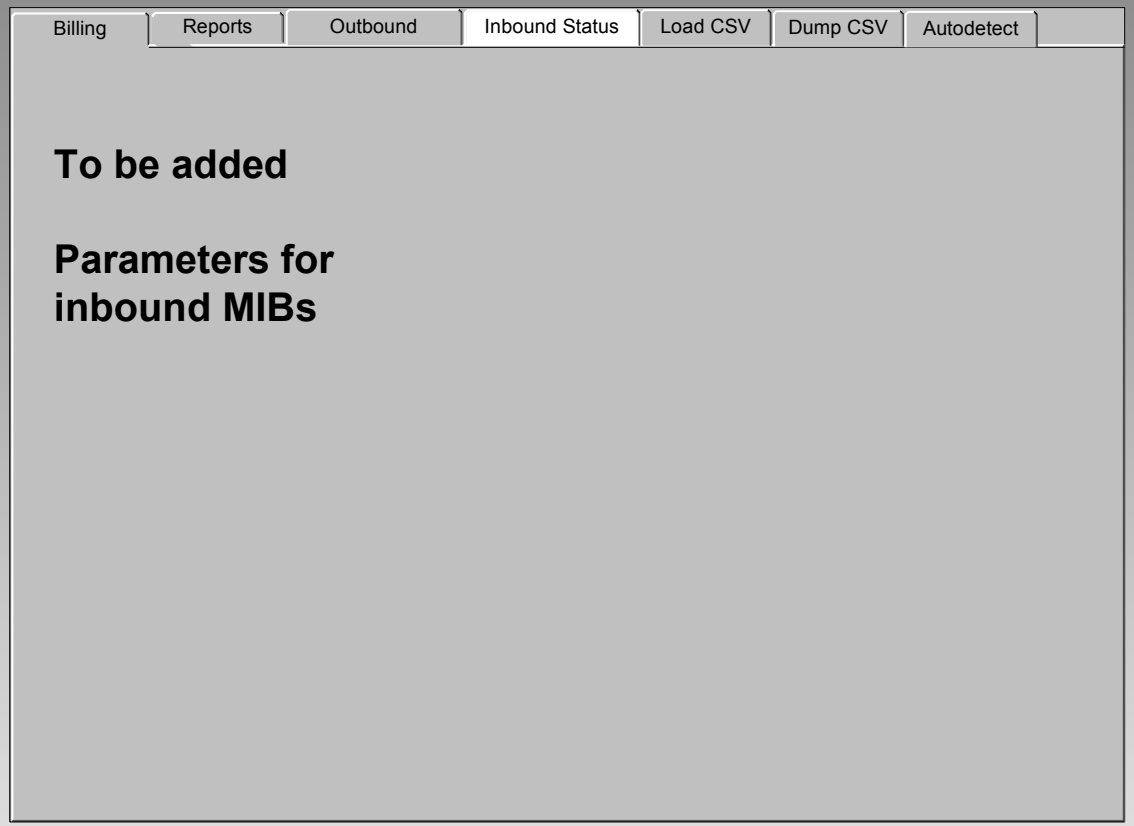
Changes in service state can also be sent to external systems.



## 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.



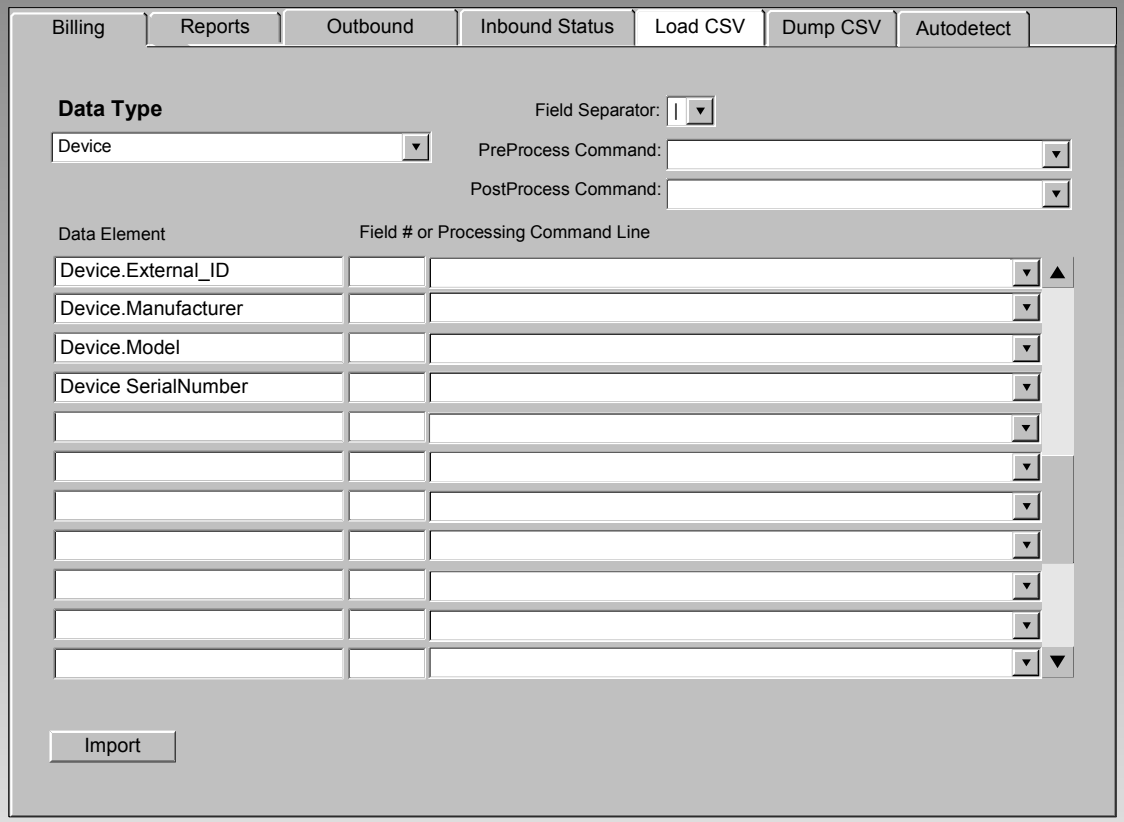
## System Administration

# 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.



## System Administration

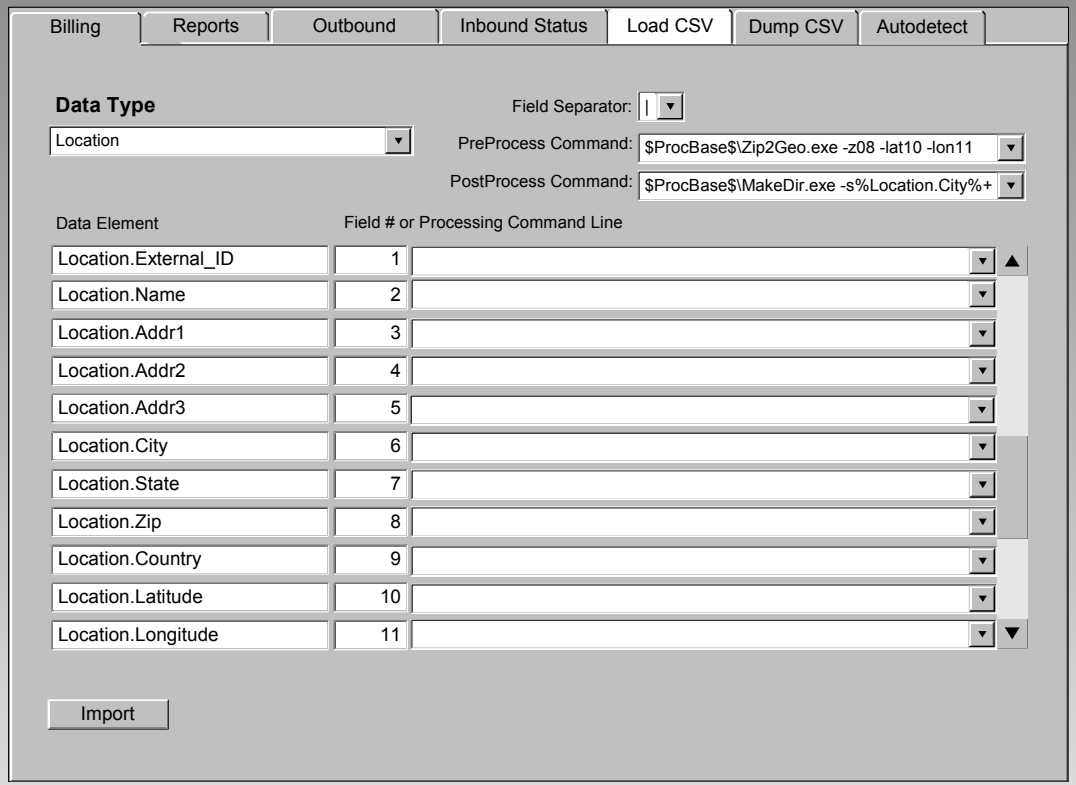
# Database Load (Example)

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.



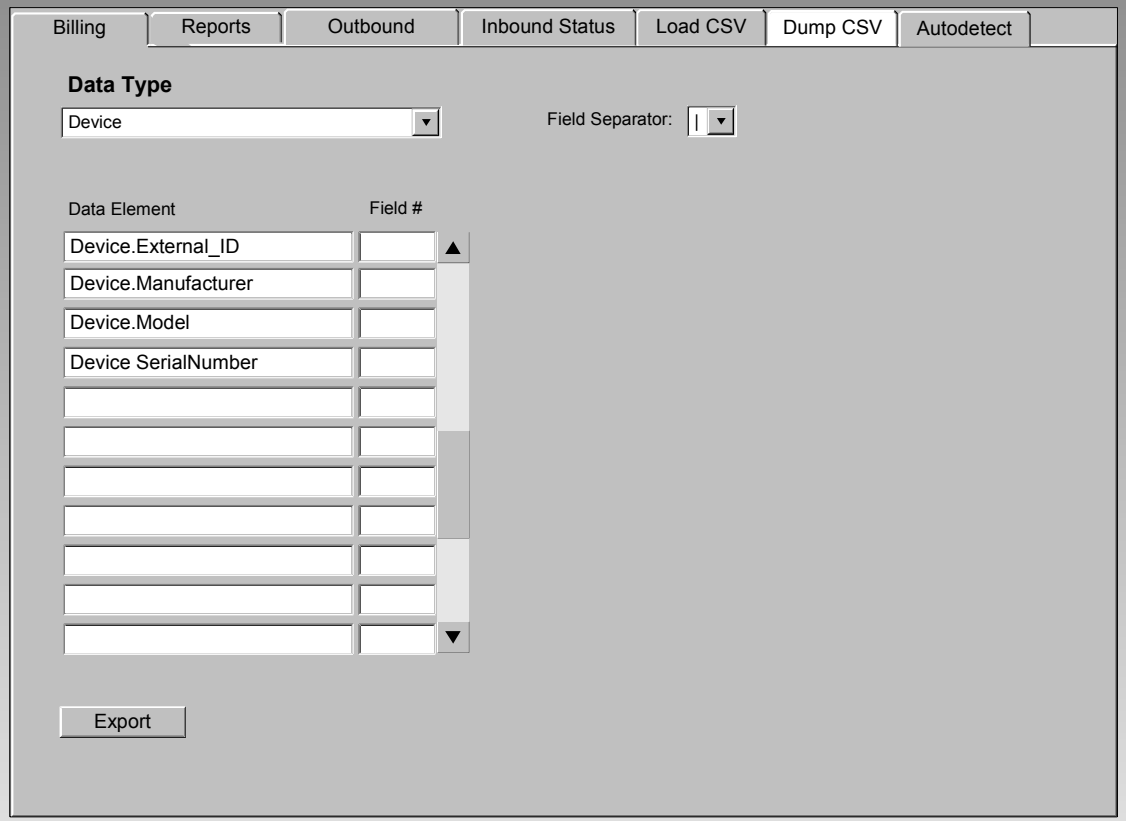
## System Administration

# 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.



## System Administration

# Device Autodetect

Auto-detect finds compatible devices on the specified network segment.

# Introduction to Configuration

# Device Pointers

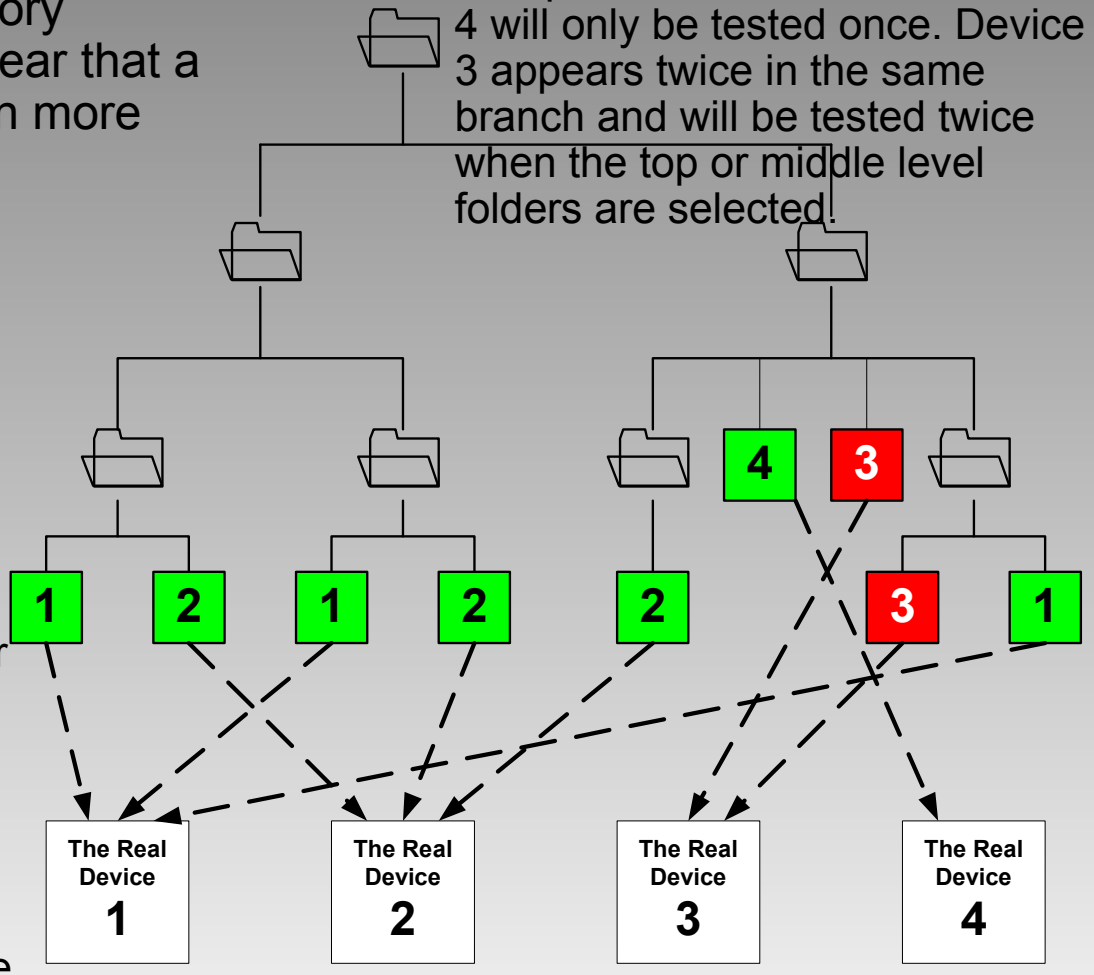
The hierarchical directory structure makes it appear that a device can be stored in more than one place.

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.

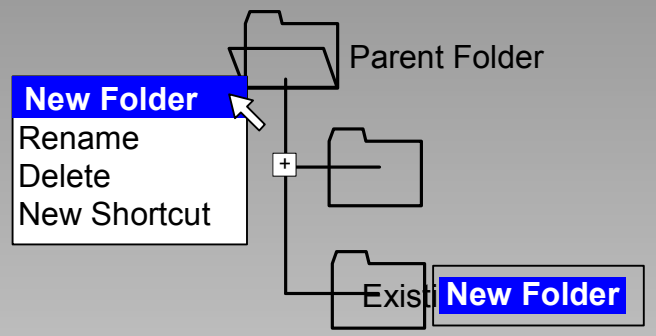
When a device appears more than once in the same branch, selecting the higher folder may result in testing the device multiple times. Devices 1, 2, and 4 will only be tested once. Device 3 appears twice in the same branch and will be tested twice when the top or middle level folders are selected!



## 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.

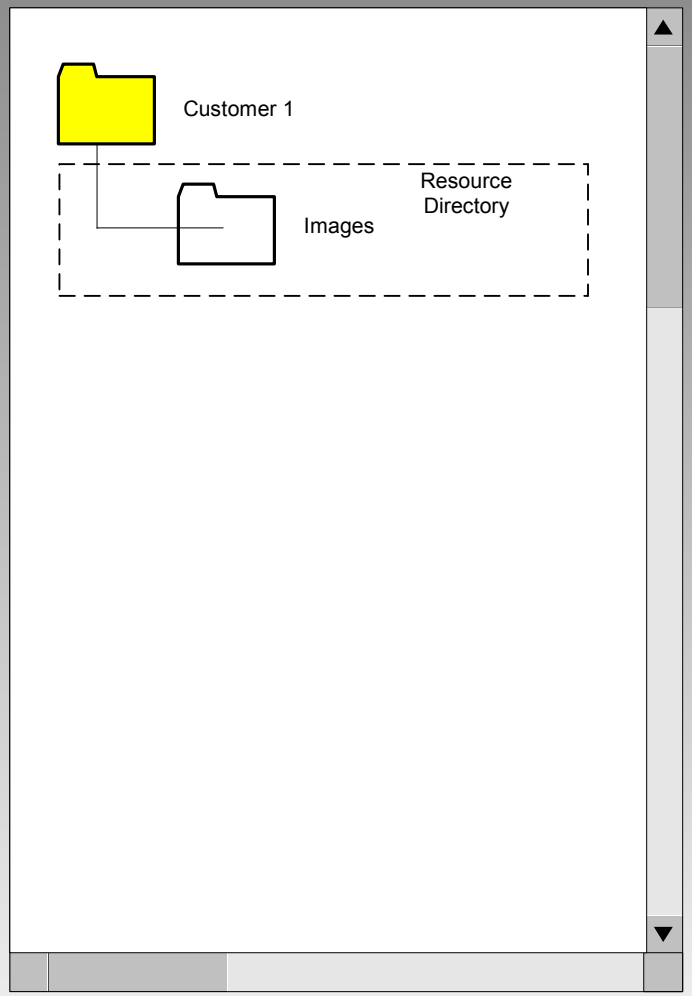
# Image Administration

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

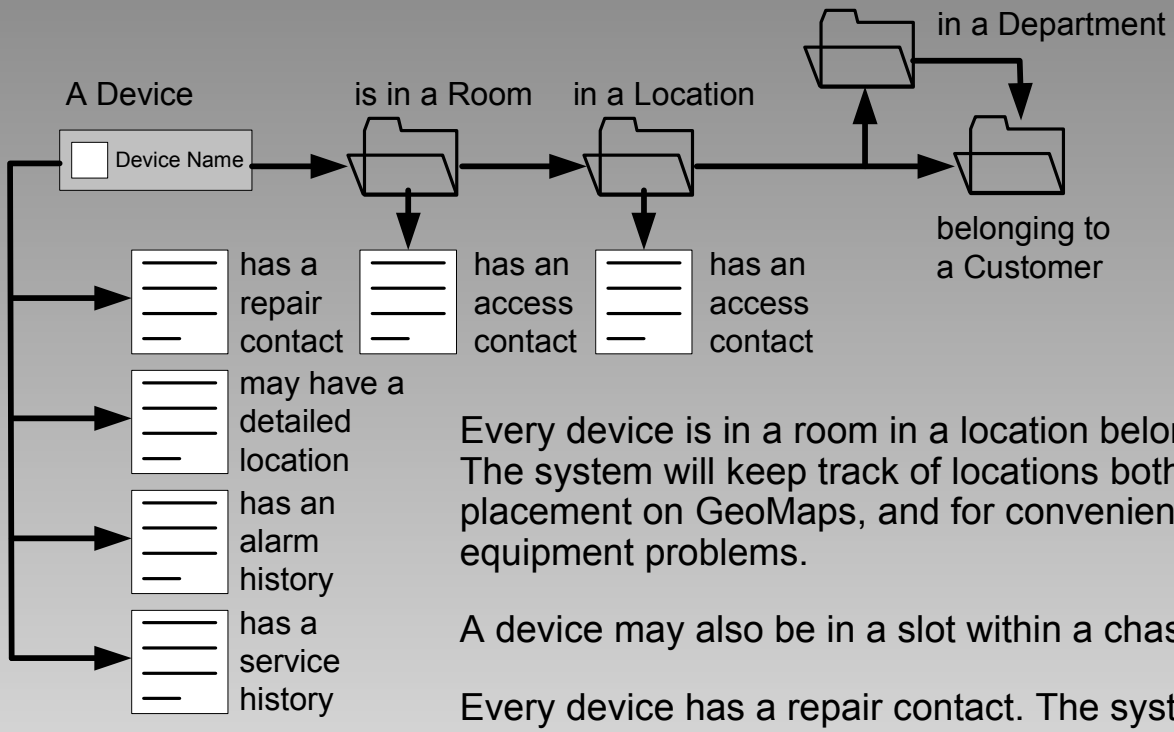
Any GIF, JPG, or PNG image can be used. It is copied into a resource image library and can then be associated with a folder.

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

Resource directories are visible when the user needs them.



# 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.

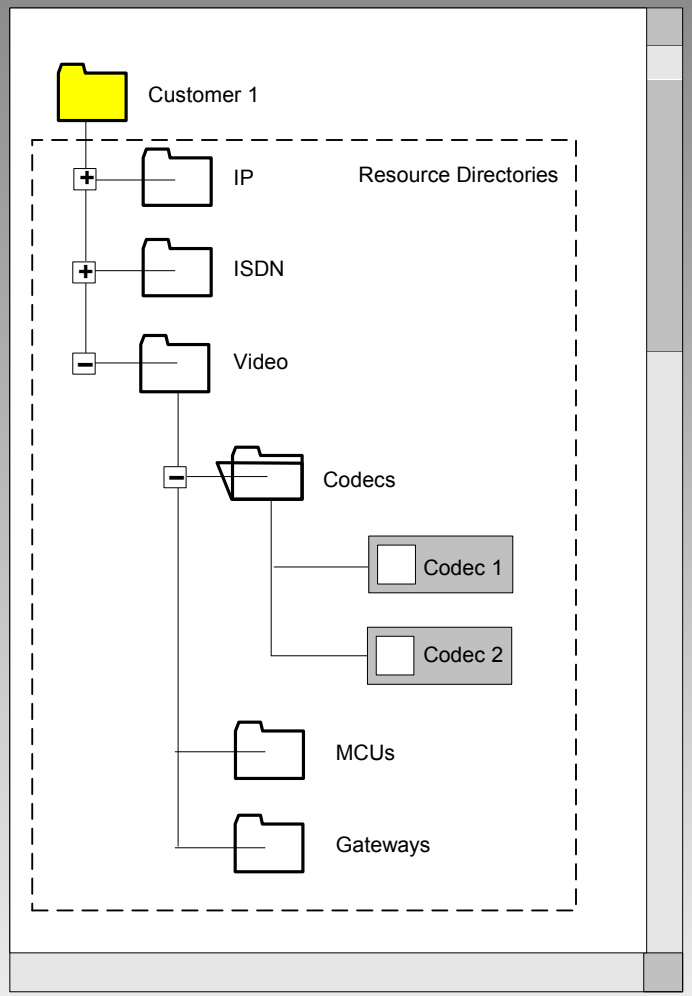
# Device Administration

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.



# Service State

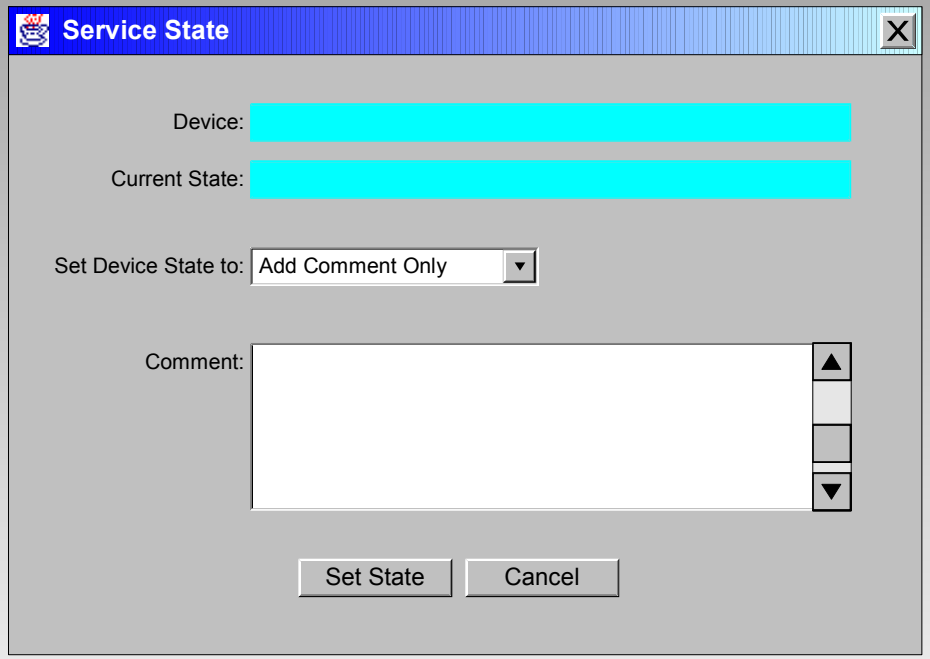
Each device has a service state that is tracked in the Service History Log and can be reported to an external system.

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:

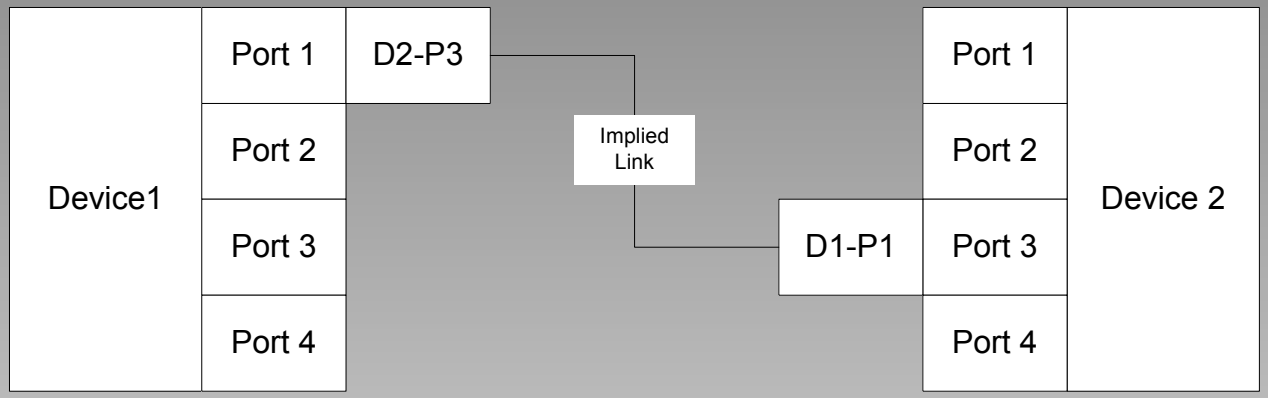
- In Service
- OOS – Pre-Service
- OOS – Administrative
- OOS – Maintenance
- OOS – Called for Repair
- OOS – Repaired
- OOS – Repair Verification

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



## 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.

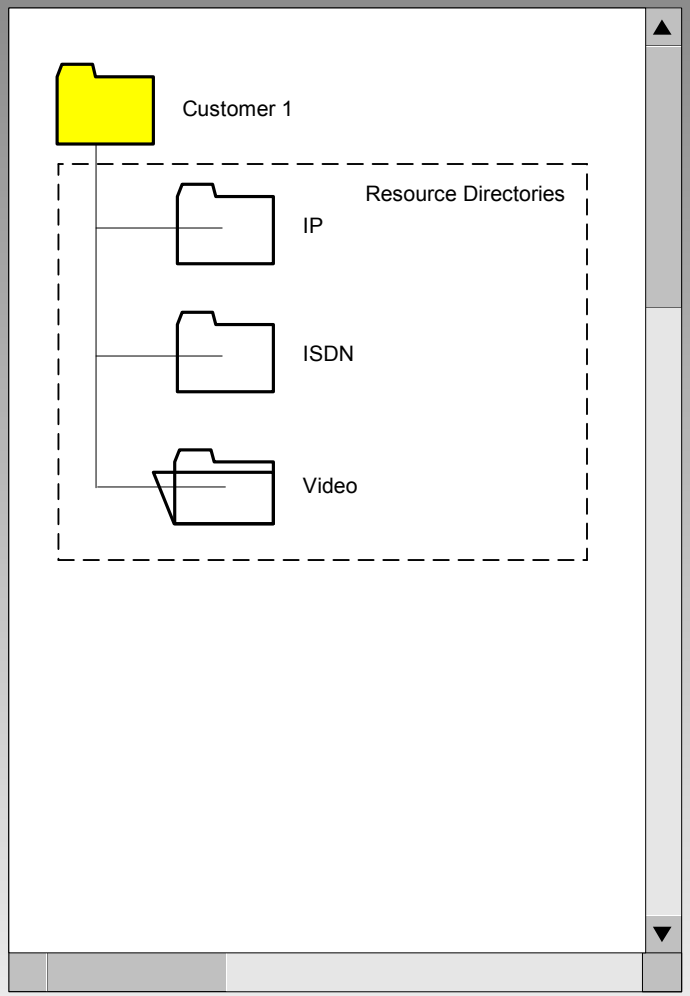
# Introduction to Test Administration

# 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.

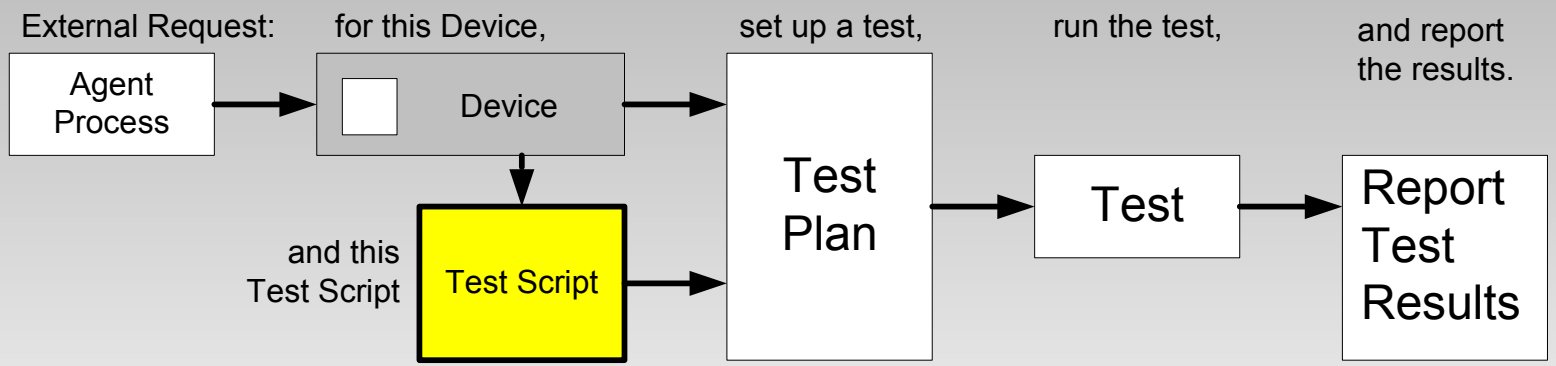


# Default Script Administration

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.

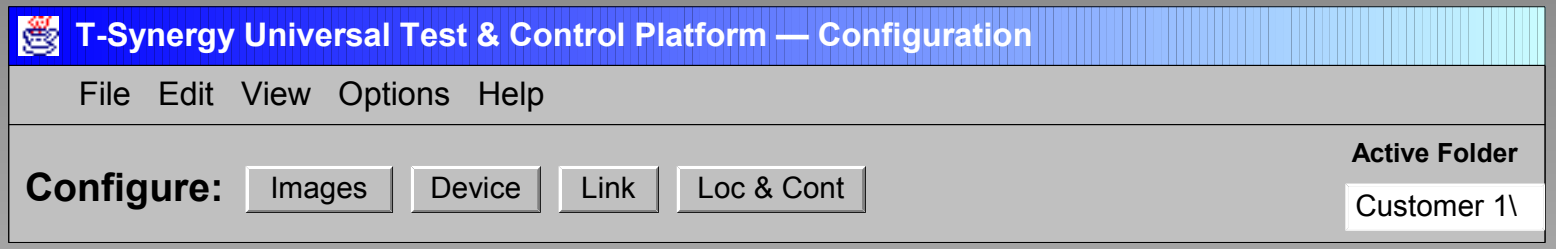
In UTP+, the API used by the scheduler to run tests is exposed. If the script is not specified, the default script is used.



# 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.

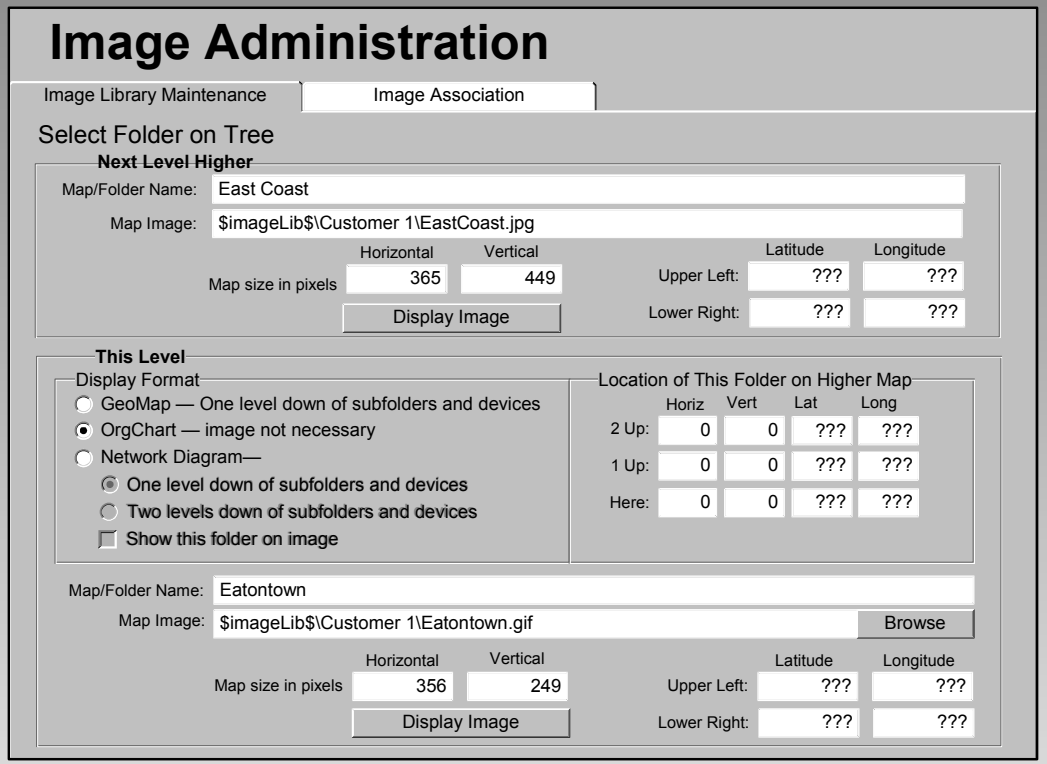

GeoMaps show one level of folders and devices. NetDiags can show the current folder and two levels down of folders and devices.

## 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.




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

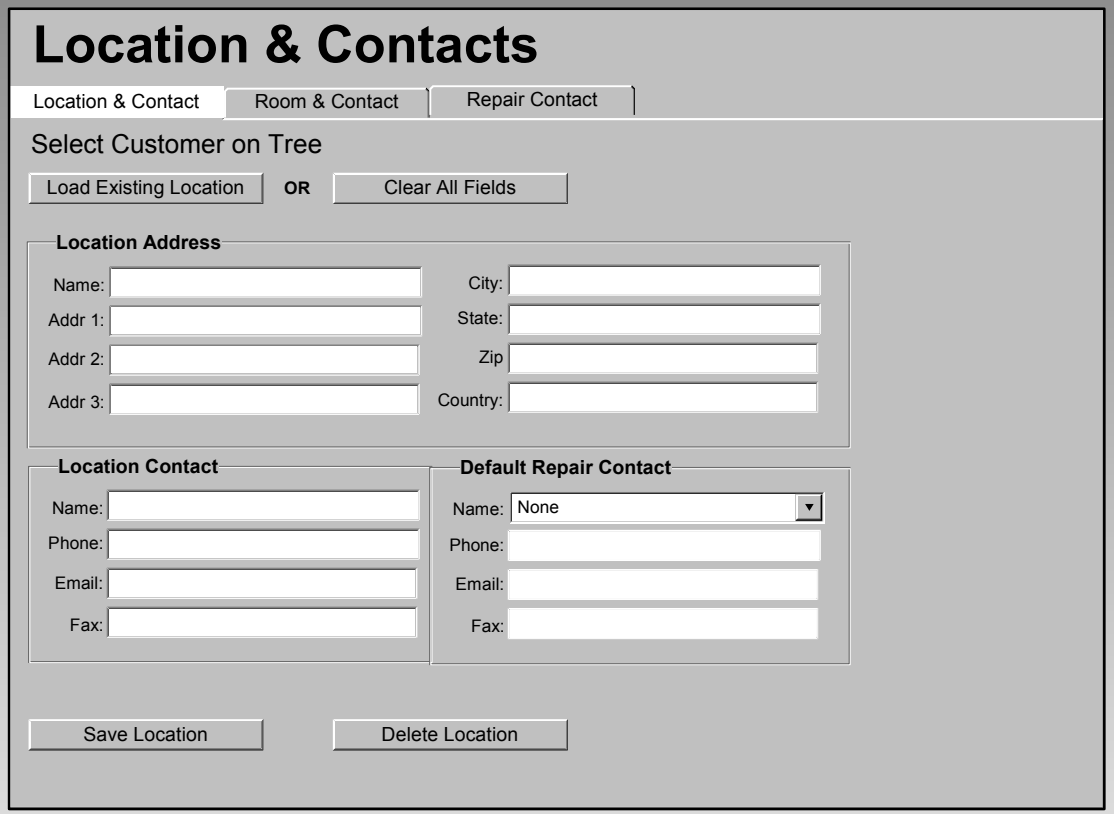
# Location & Contact Administration

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.

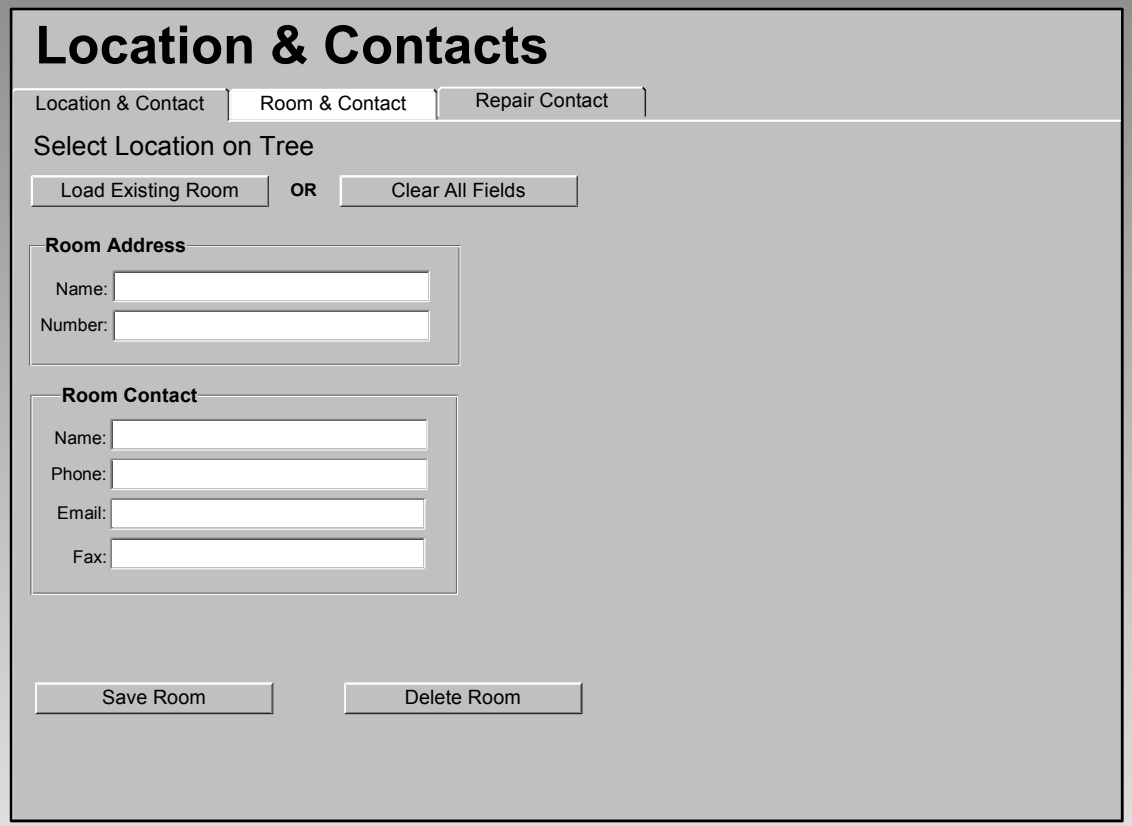


## Configuration Features

# Room & Contact Administration

A Room is associated with a location.

A Room has a contact for access.



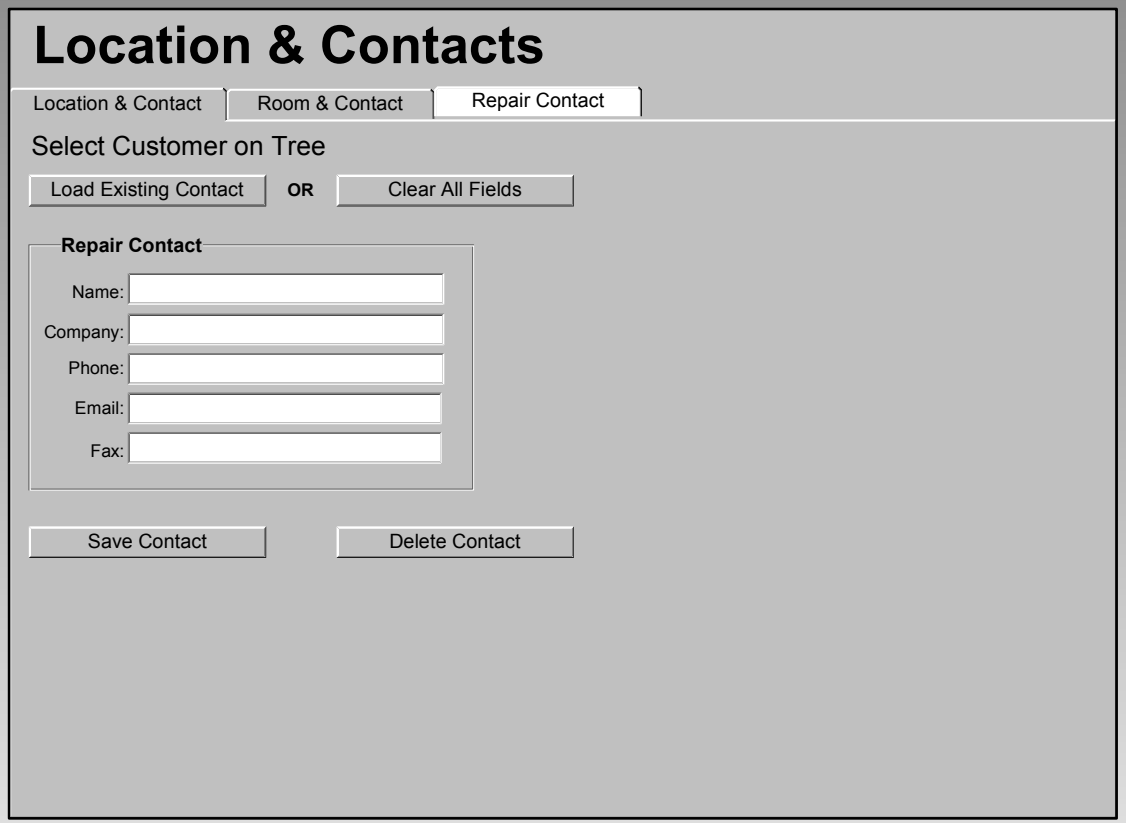
## Configuration Features

# 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.

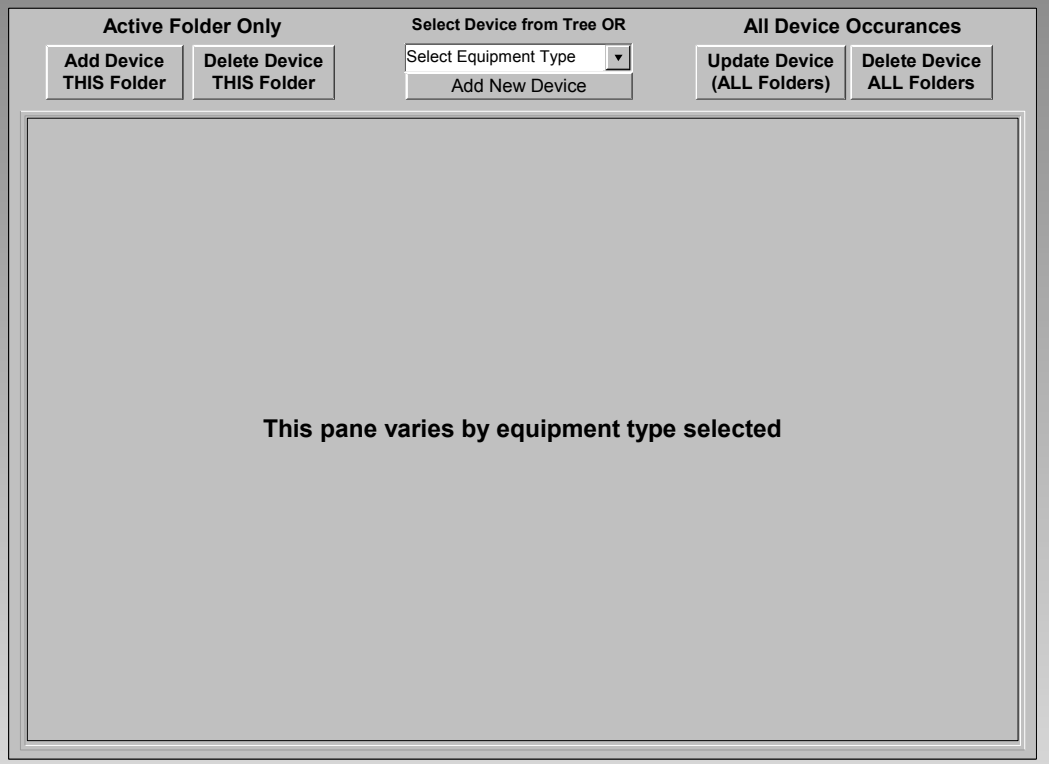


## Configuration Features

# 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.

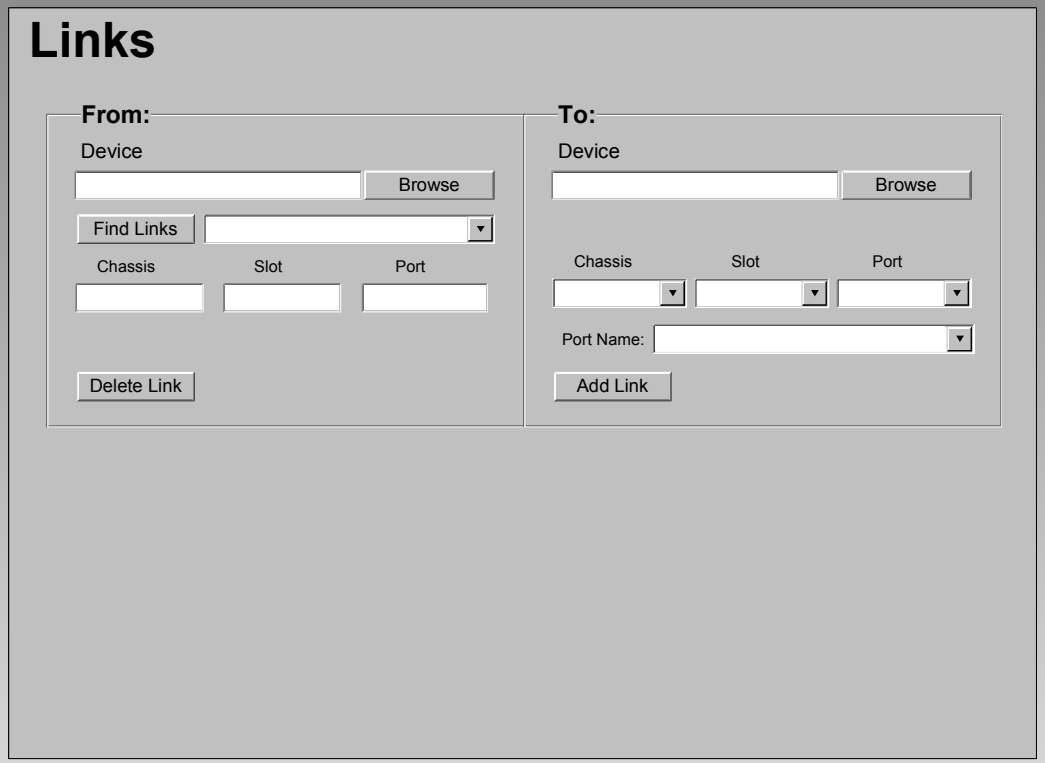


## Configuration Features

# Link Administration

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

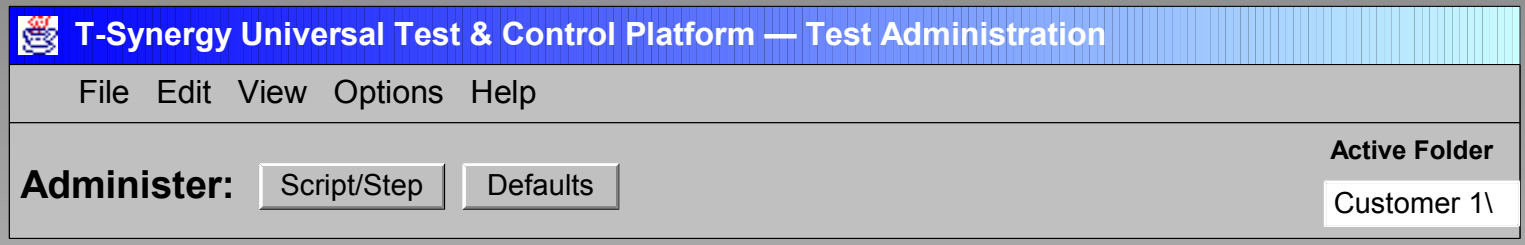
Links are explicitly defined by identifying both endpoints.



# Test Administration Features

## Test Administration Features

# Screen Selection

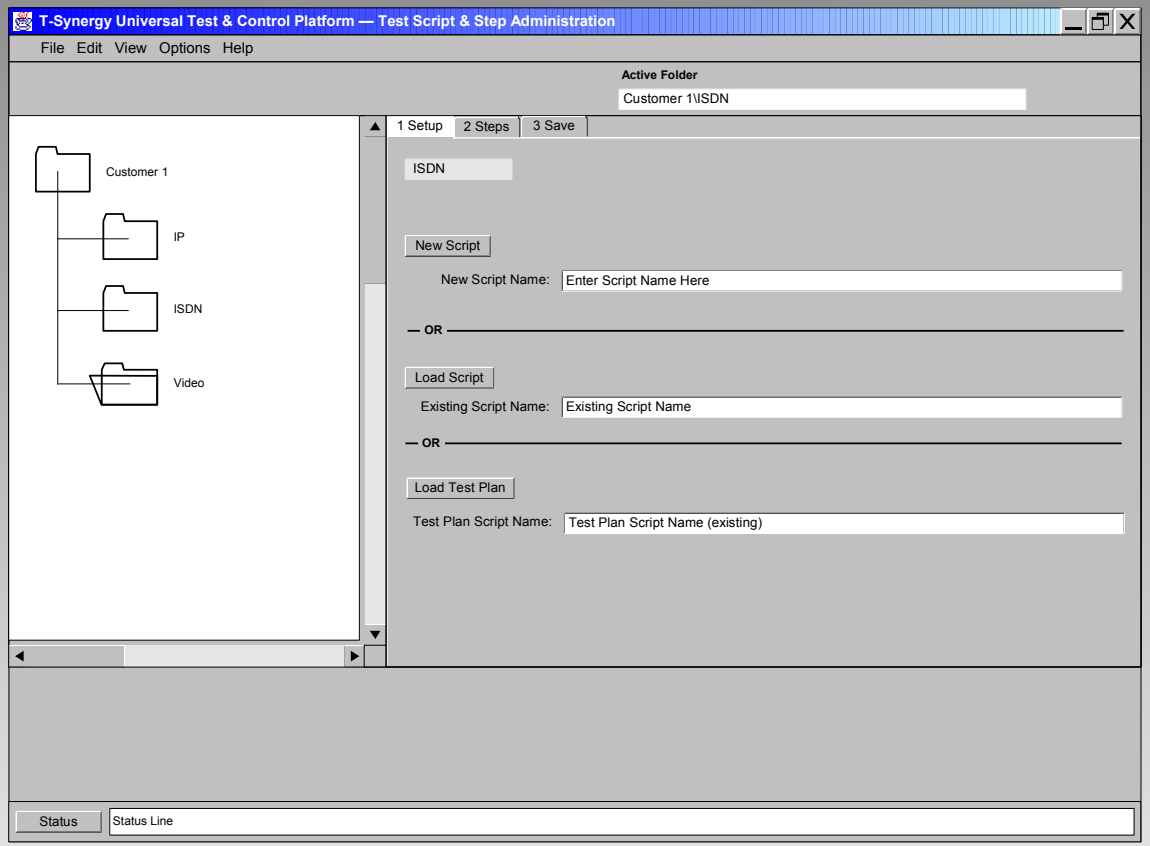



Buttons in the **Control Area** select which of the Test Administration screens display in the Working pane. For UTP and UTP+, only Defaults can be administered.

# Test Administration Features

# Network Selection

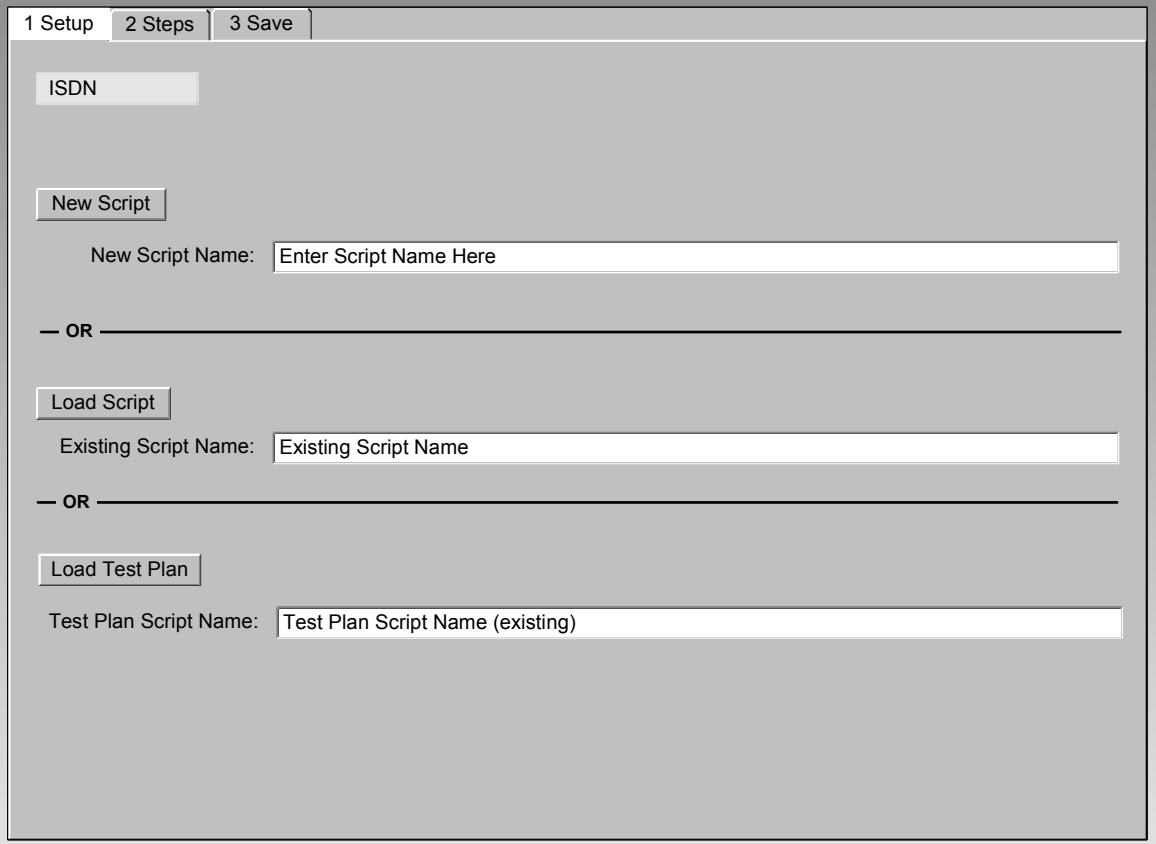
Select the network / protocol within those defined for the domain.



## Test Administration Features

# Script Setup

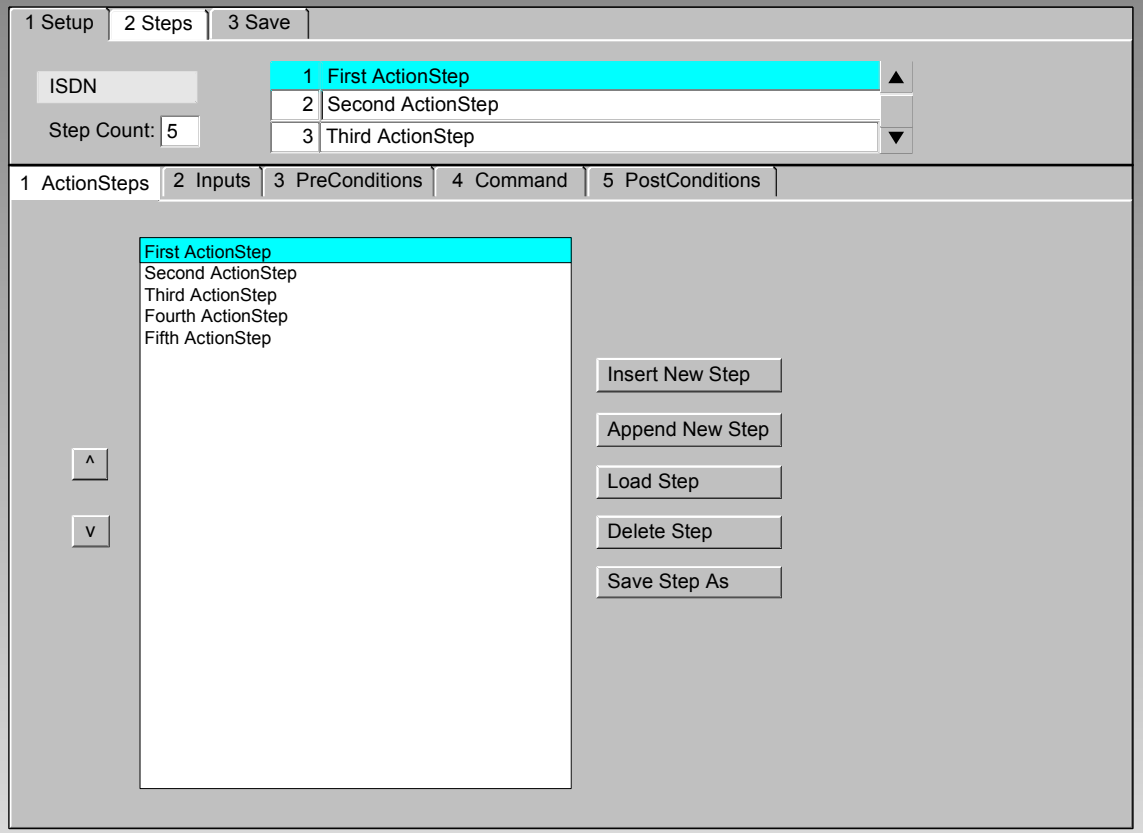
Load an existing script or create a new script.



# Test Administration Features

# Step-ActionSteps

Set the order of existing and new steps.



# 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

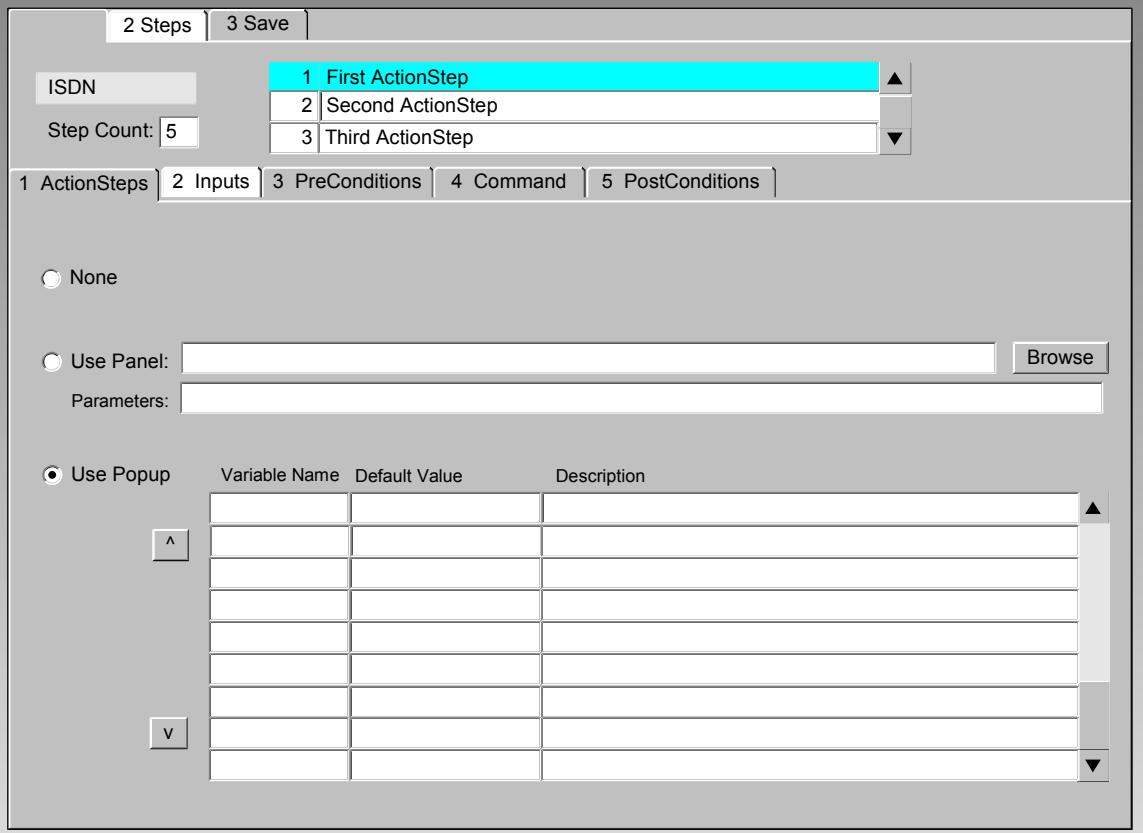
  If the step uses an interactive control panel, the test remains active and under the control of the panel until the user clicks the **Continue** button on the test screen.

  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.

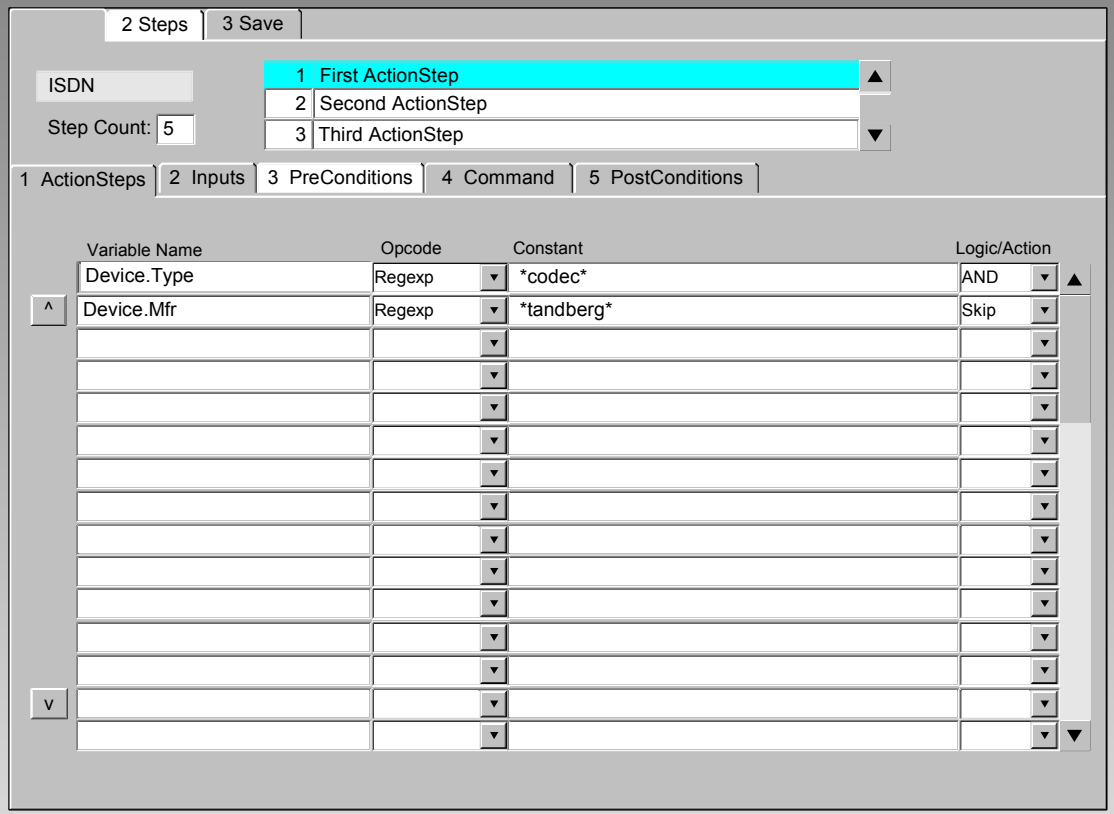


# Test Administration Features

# Step-PreConditions

Define preconditions for the step.

Variables include current Device.<variable> and StepID.<variable> (input or output)




Opcodes include:

- LT
- LE
- EQ
- GE
- GT
- NE
- Match
- RegExp
- Exists
- IS NULL
- Etc.

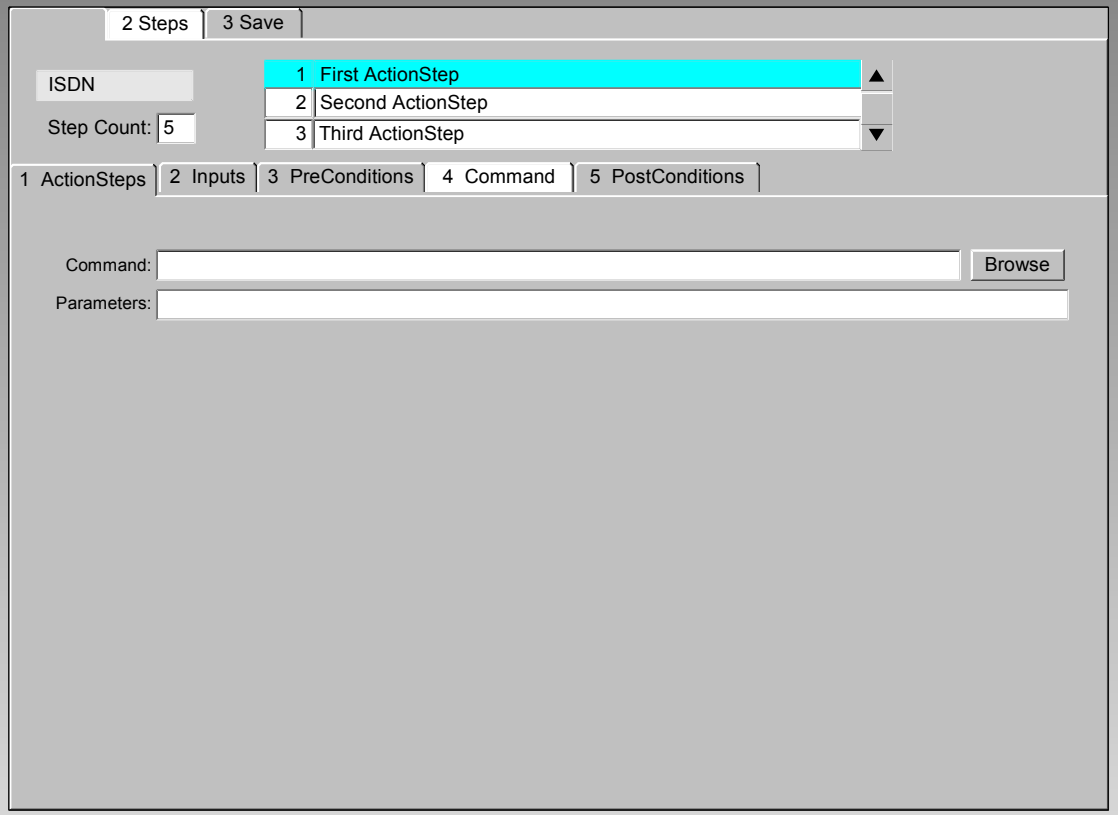
Logic/Action includes:

- AND
- OR
- NOT
- AND NOT
- SkipStep
- RunStep

# Test Administration Features

# Step-Command

Specify command and parameters for the step.




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

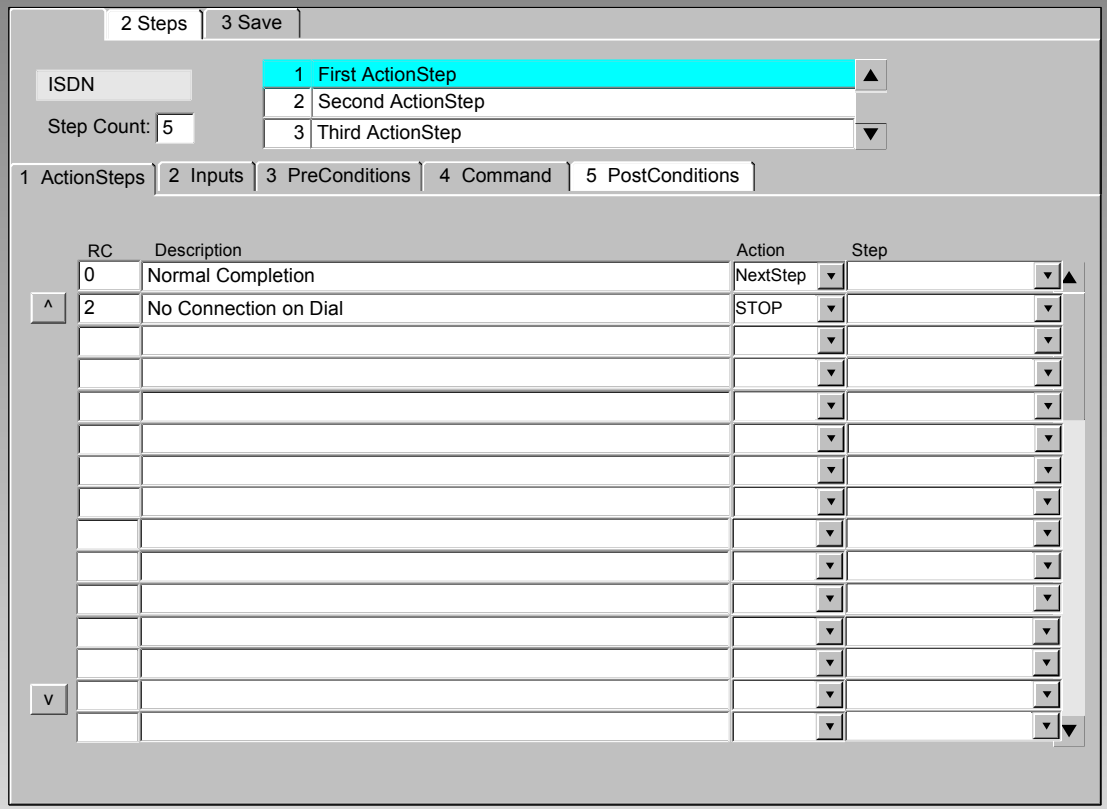
- Ping – parameter is IP address from Device.
- Status – result of a status inquiry on Device.
- Reset – Device specific command.
- Analyse-D – look at output of D-Channel trace in the log window and make a recommendation.
- Run ksh with script file using *awk* and *sedd* to analyze ActionStep log or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

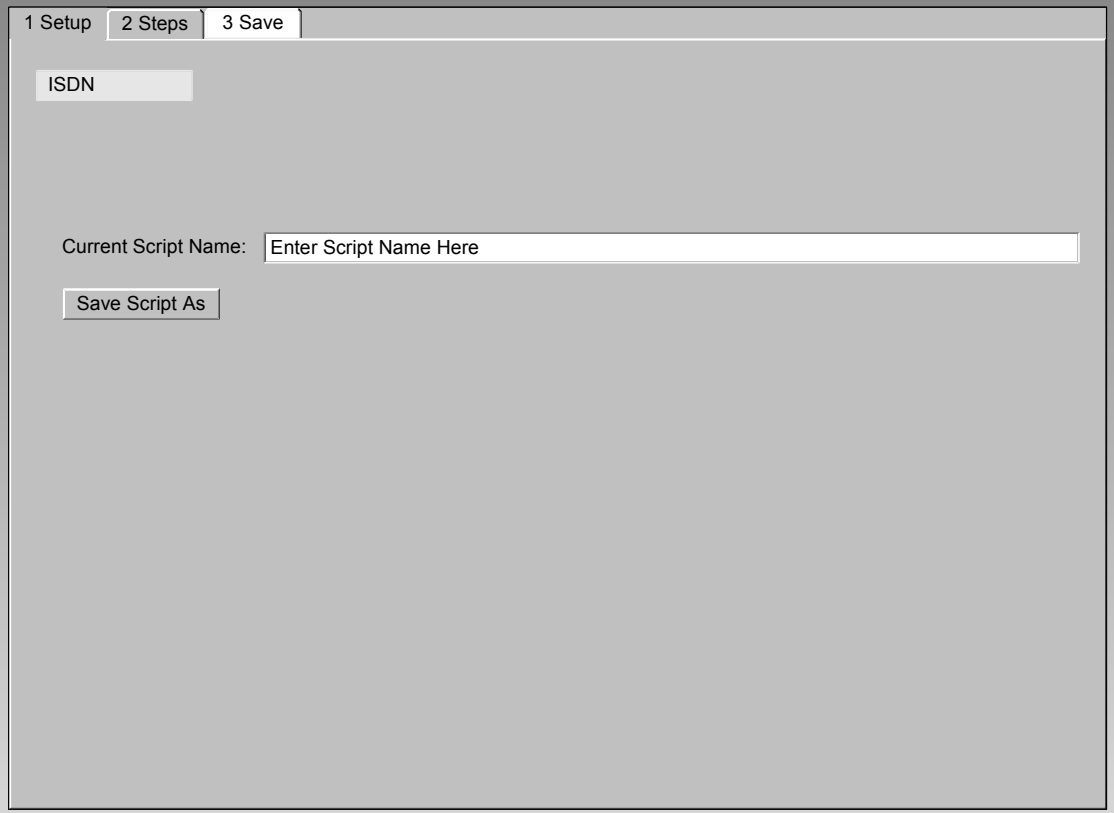



Action may include

- NextStep
- Stop
- GotoStep
- Pause

# Script Save

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

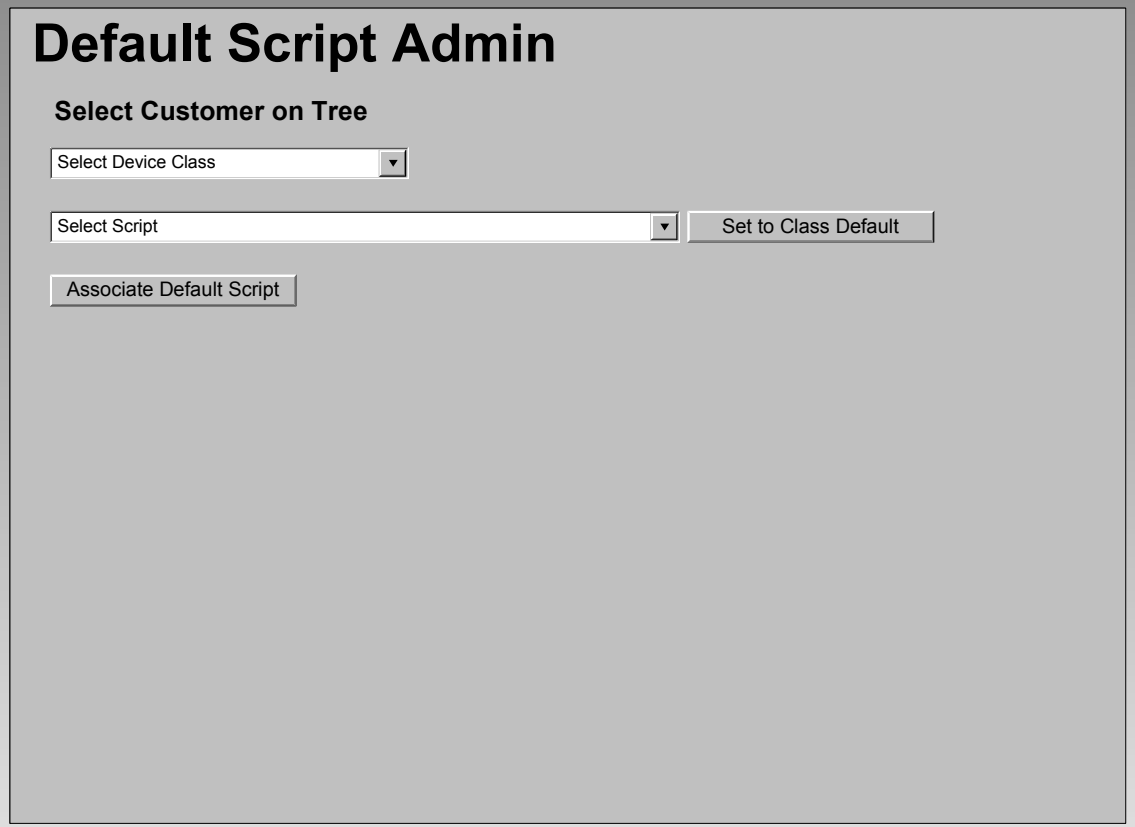


## Test Administration Features

# 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.



UTCP, IMPACT Only

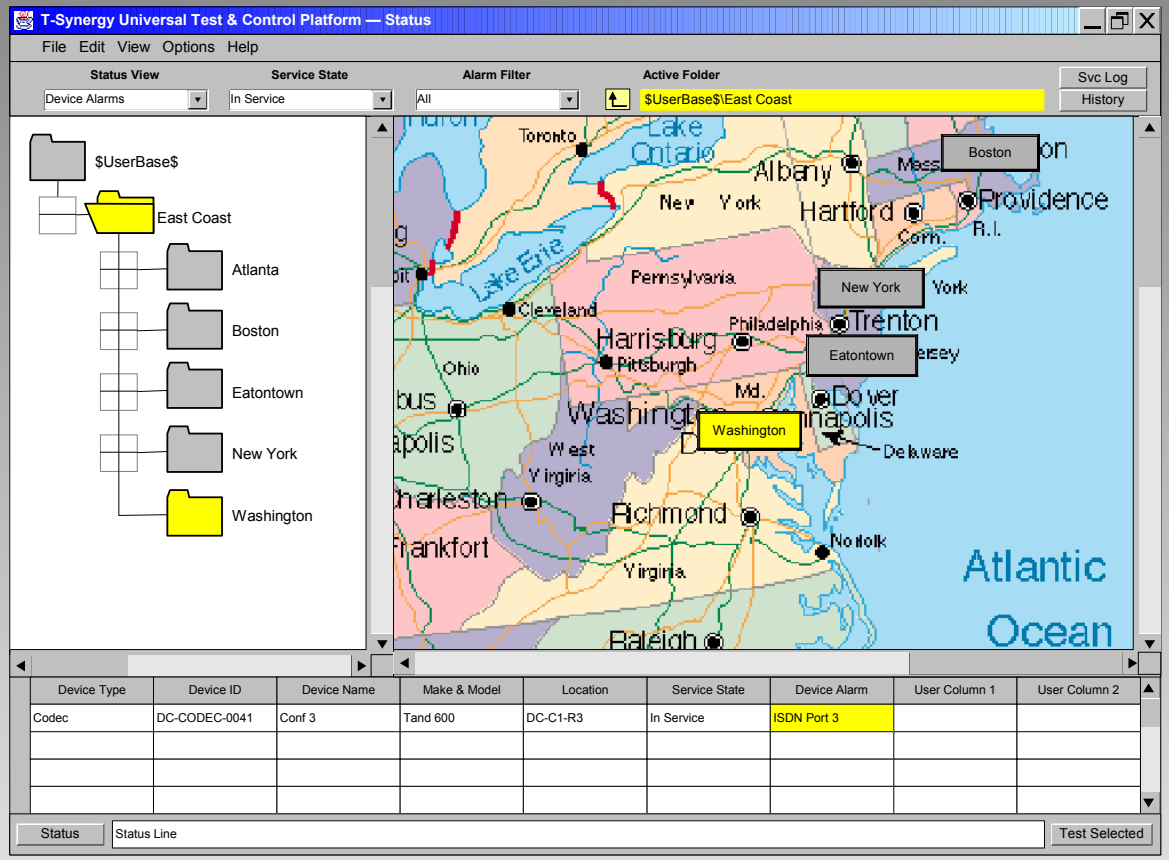
# Monitoring Features

# 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.



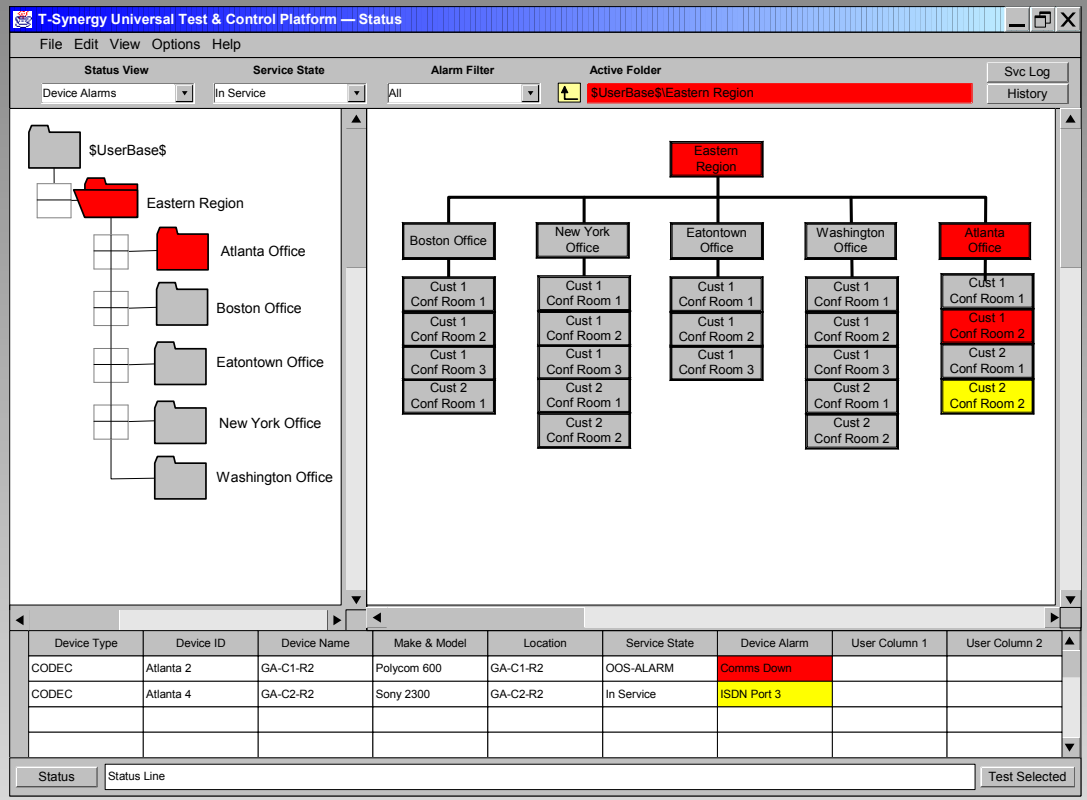
# Status (Map) – OrgChart

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.



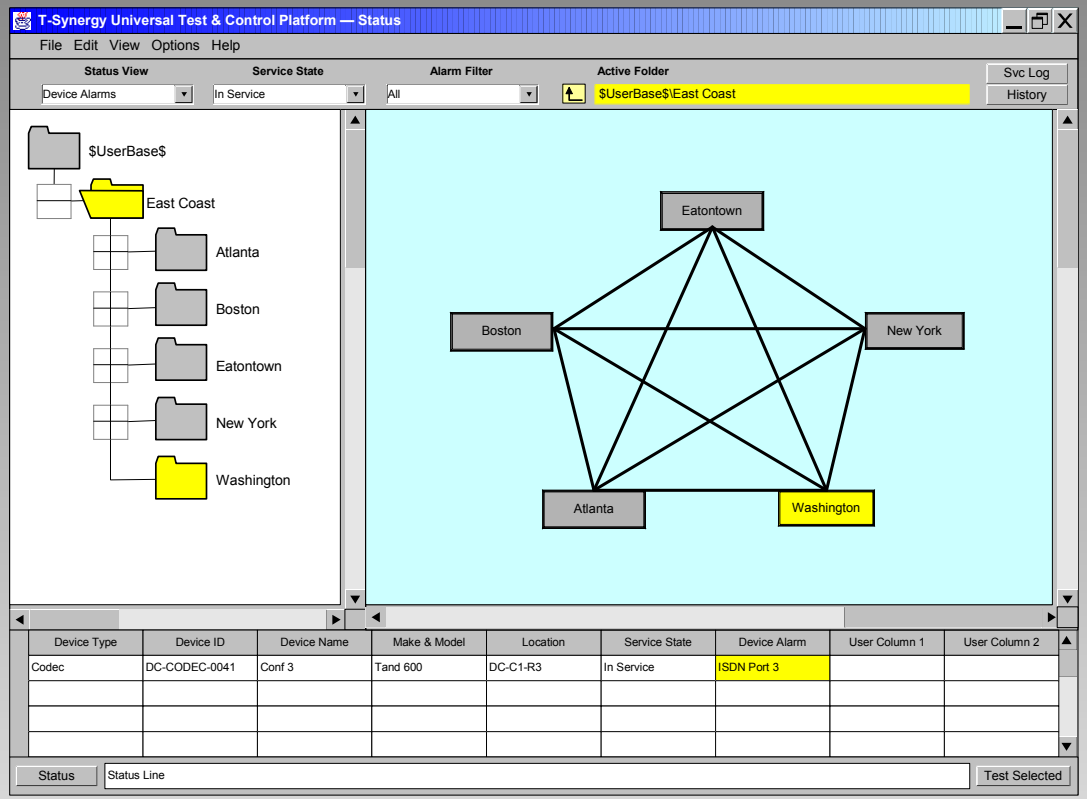
# Status (Map) – Network

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.




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

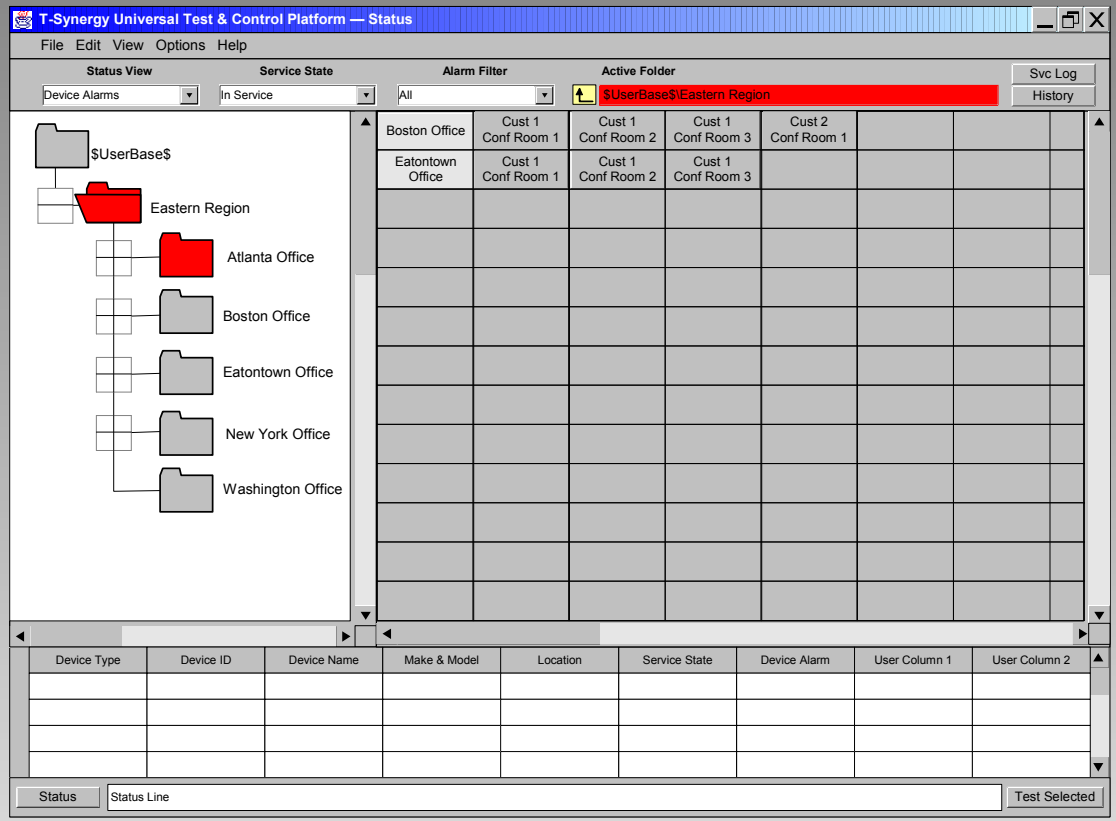
Select a device from the list and double-click it (or use Test Selected button) to test it.

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 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.

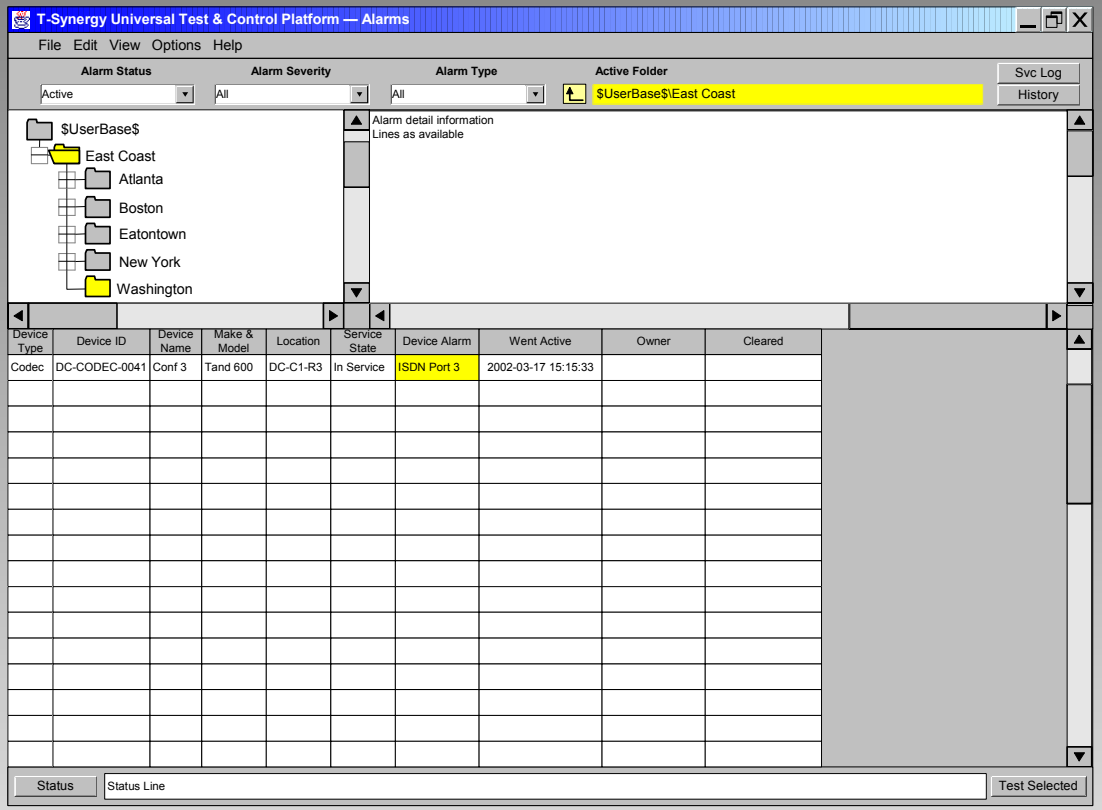
# Tabular Alarms

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 alarmed devices in the List.

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

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




The folder selected in the tree is the highest level. Every device in any subfolder below it is included in the status/alarm color.

Filters at the top of each screen determine which of the subfolder information will show.

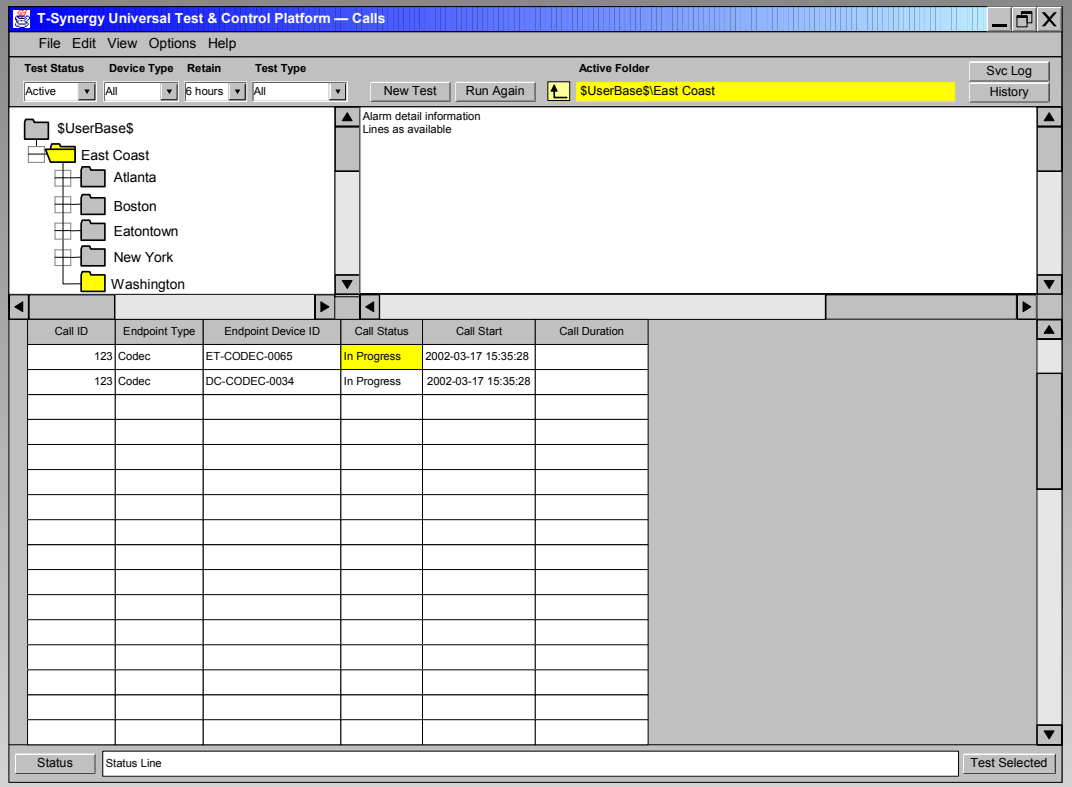
# Calls

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.

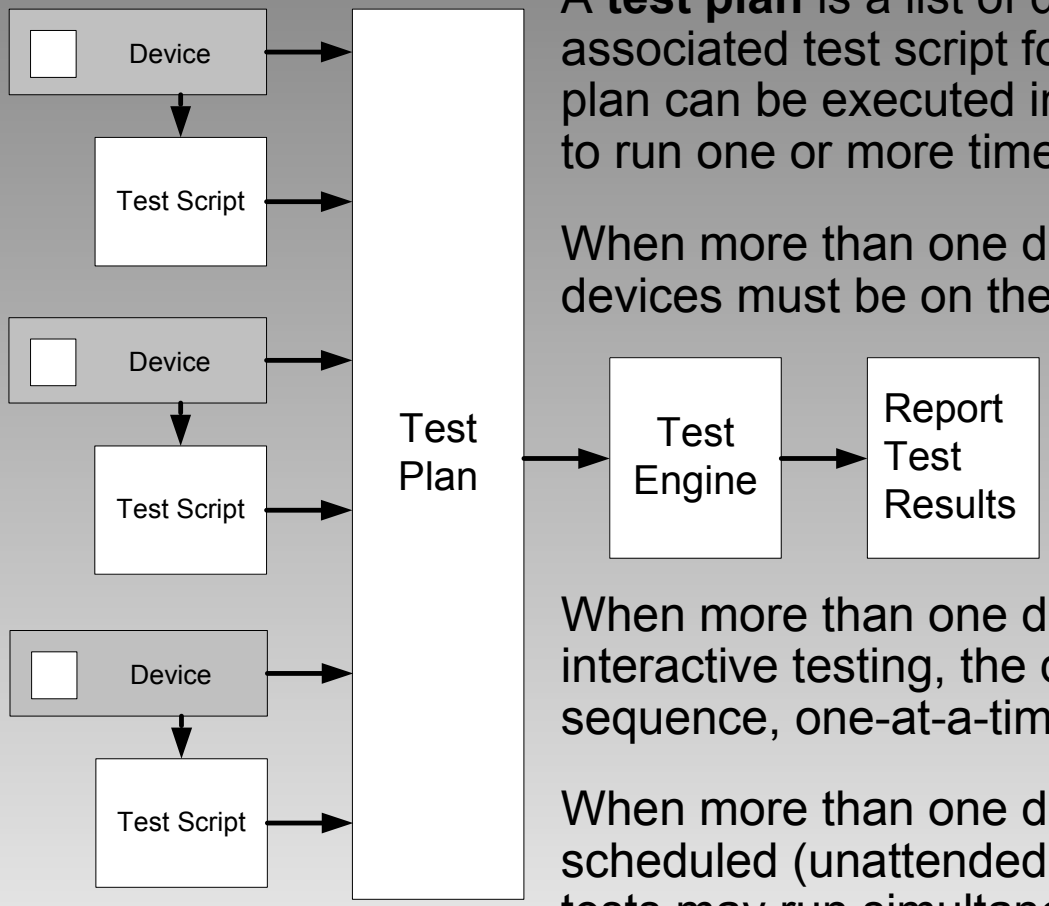



This screen is available only when customer equipment notifies us of calls. It is useful for selecting devices to test based on complaints from callers.

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

# Testing Features

# 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

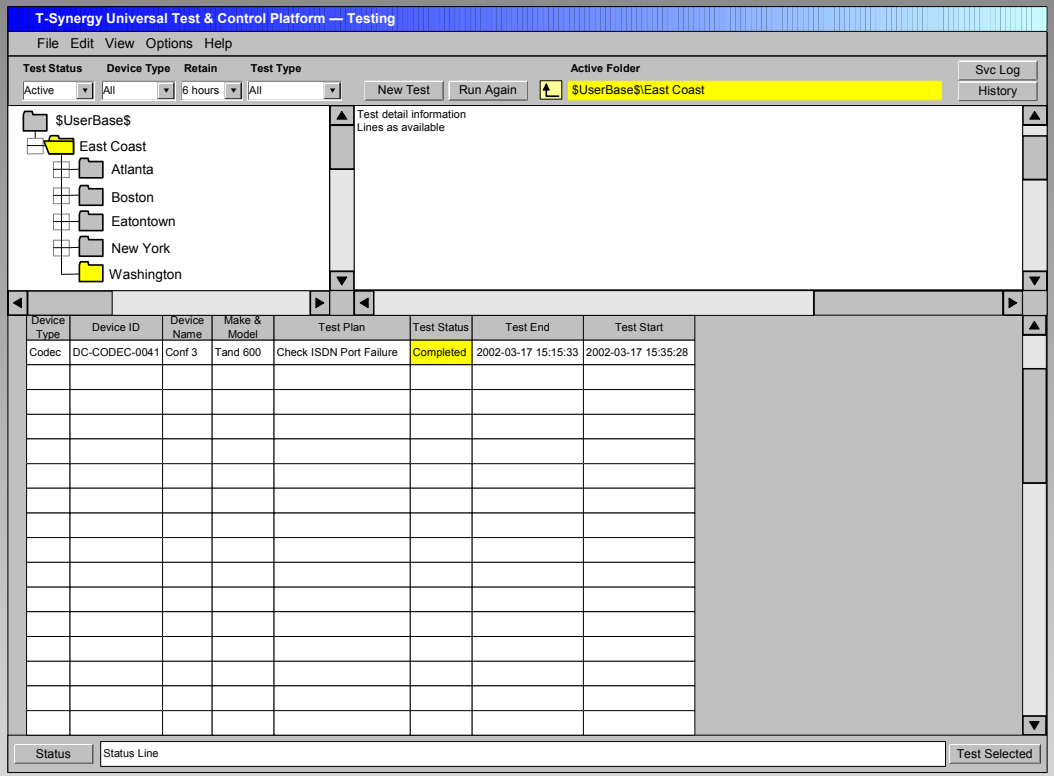
# Test Status Screen

This screen tracks running, scheduled, and completed test plans in the List pane.

You can set how long competed test plans are retained.

Select a test plan from the List pane. Click it for details in the Working pane. Double-click it, or use the **Test Selected** button or the **Run Again** button to run the same test plan again.

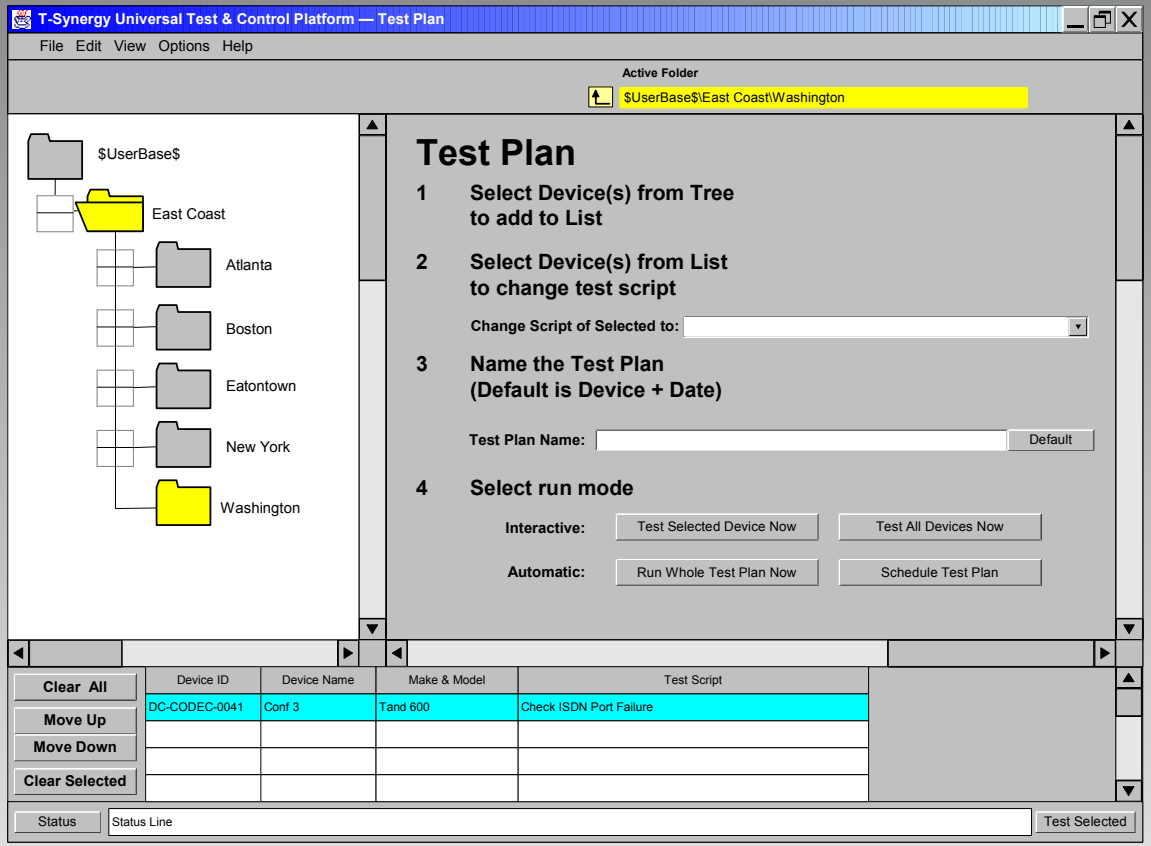
Select a device or folder from the Selection Tree and click New Test to create a new test plan.



# 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.



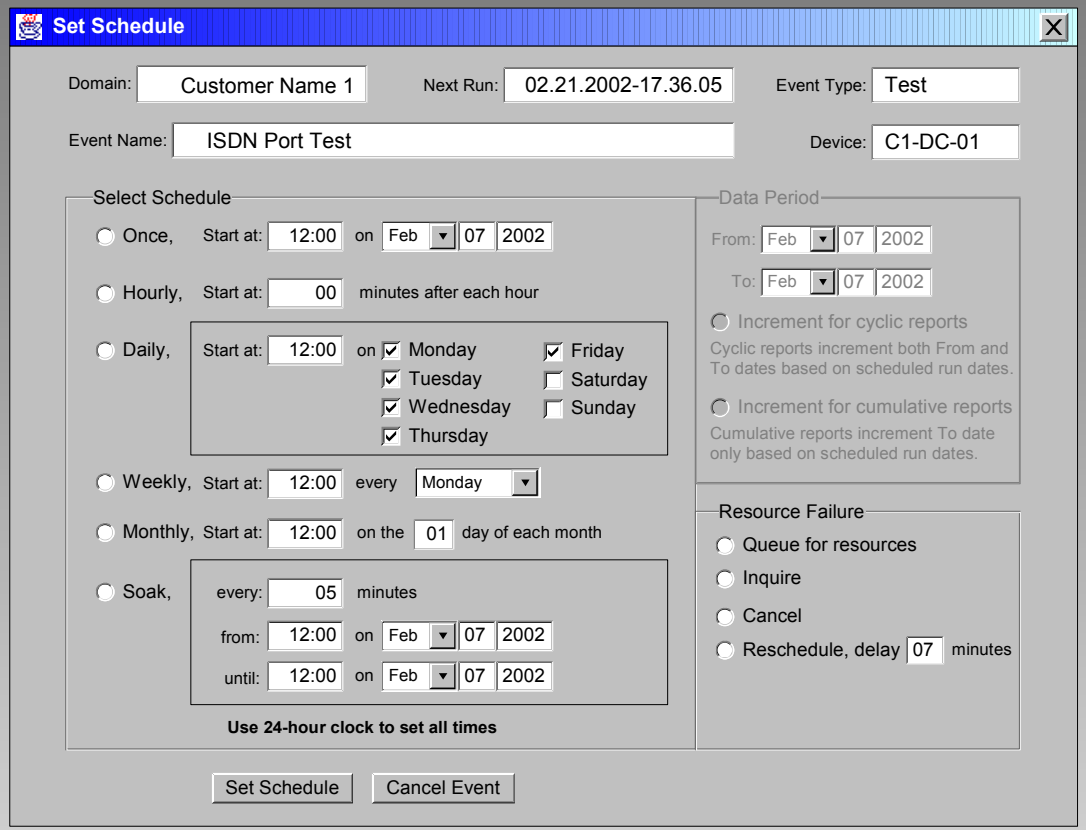

You can run one device interactively, all devices interactively (one-after-another), or all devices on a schedule.

# Testing Features

# Scheduling

Event Type is ‘Test’.

Event Name is the test plan name.

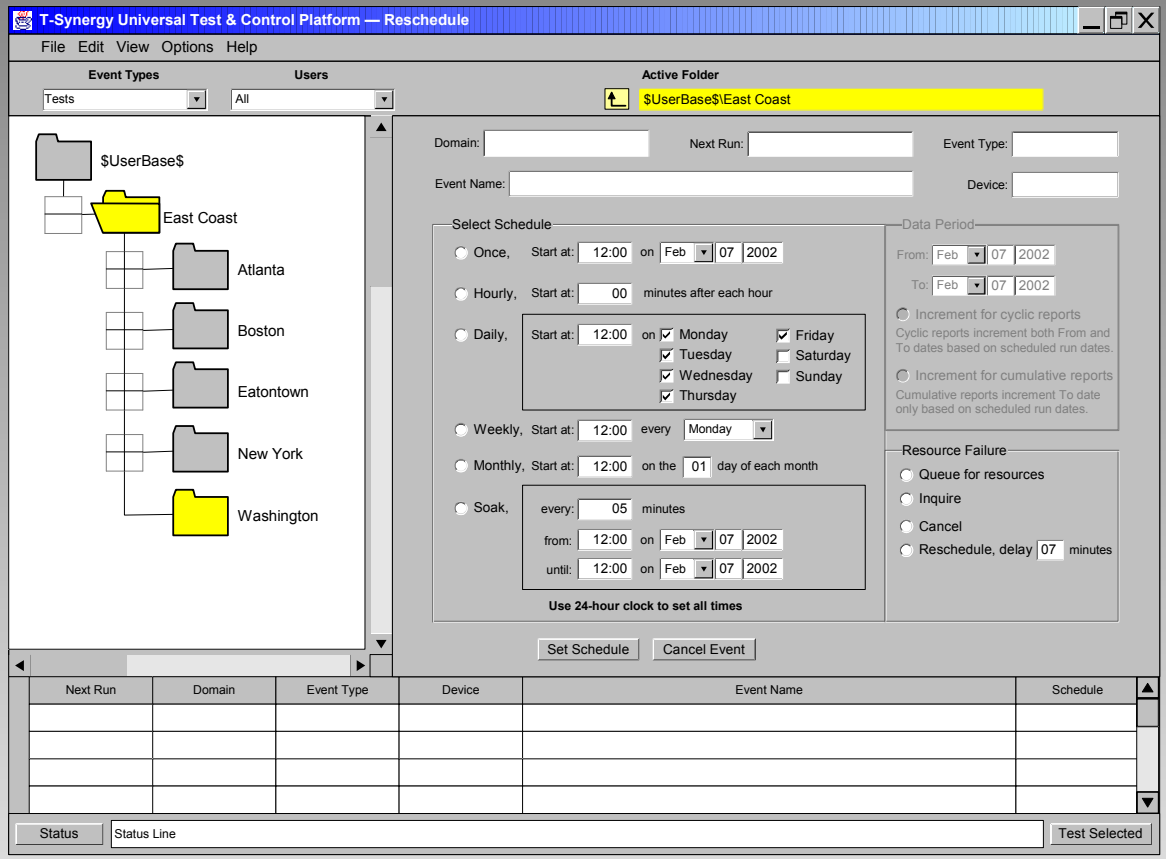



- The same Set Schedule popup is used for all scheduling activities.
- Repetitive events are scheduled one-at-a-time. (For example, Tuesday’s test is scheduled when Monday’s test completes.) The Next Run timestamp will be set when the prior event completes and reschedules. (A periodic cron job backs 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.

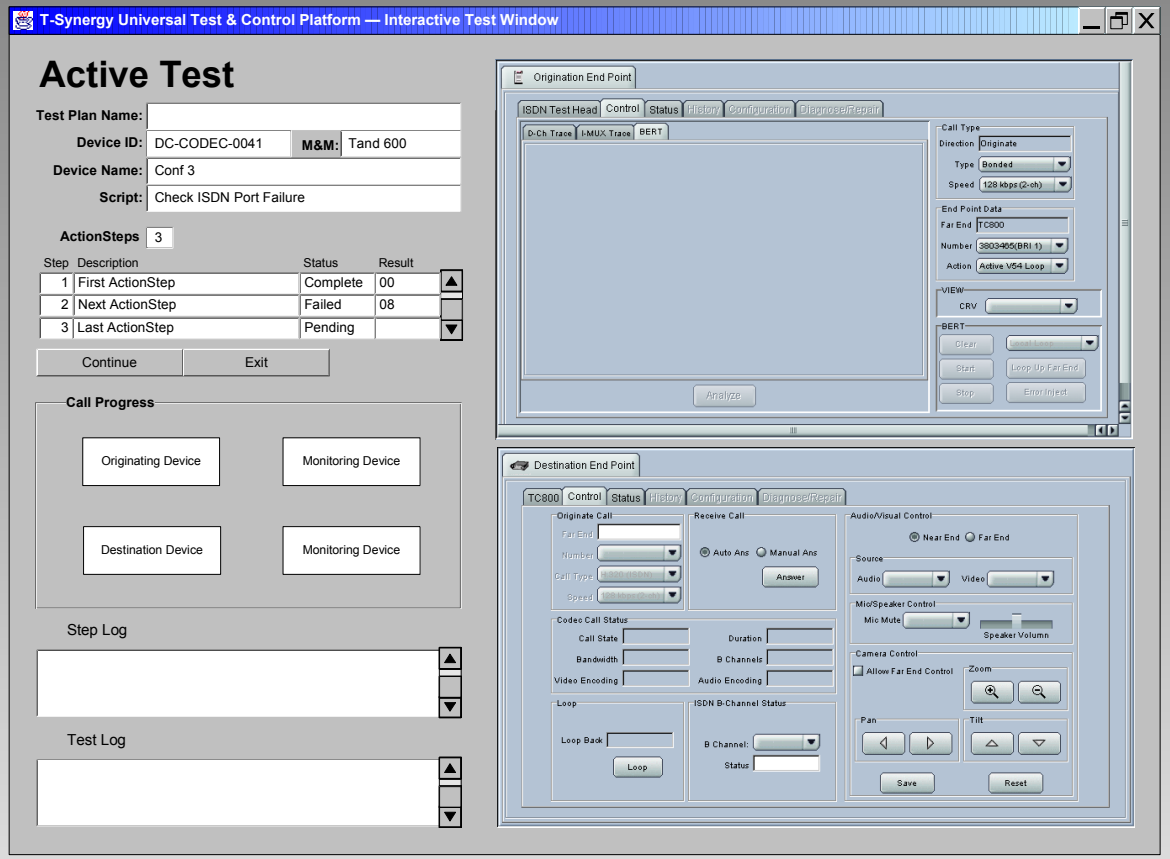



The working pane contains the Set Schedule popup used for all scheduling activities. Selecting an event from the list pane populates the working pane.

# 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.




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

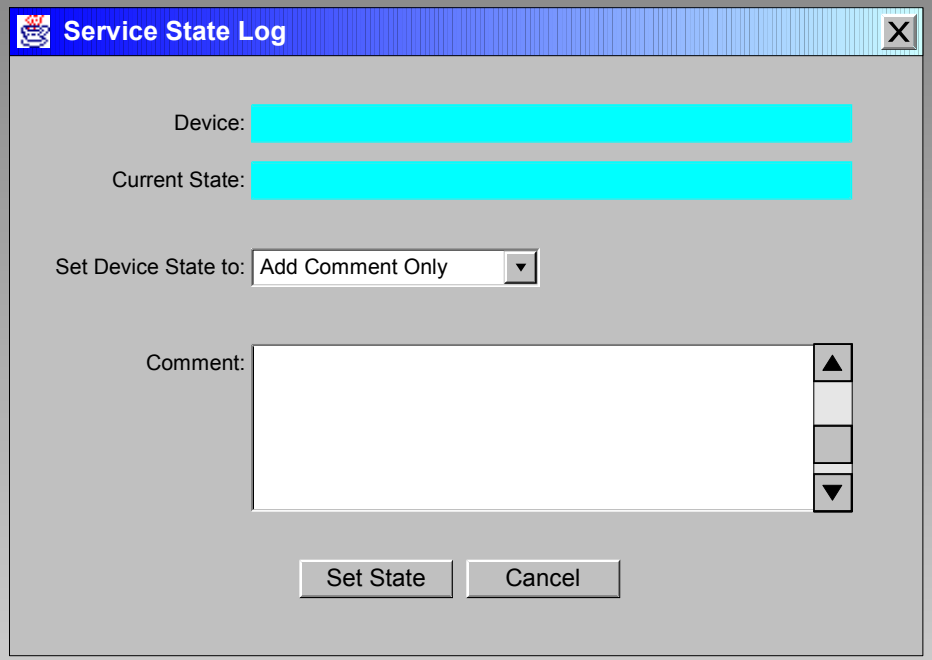
# Service State Log

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




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.

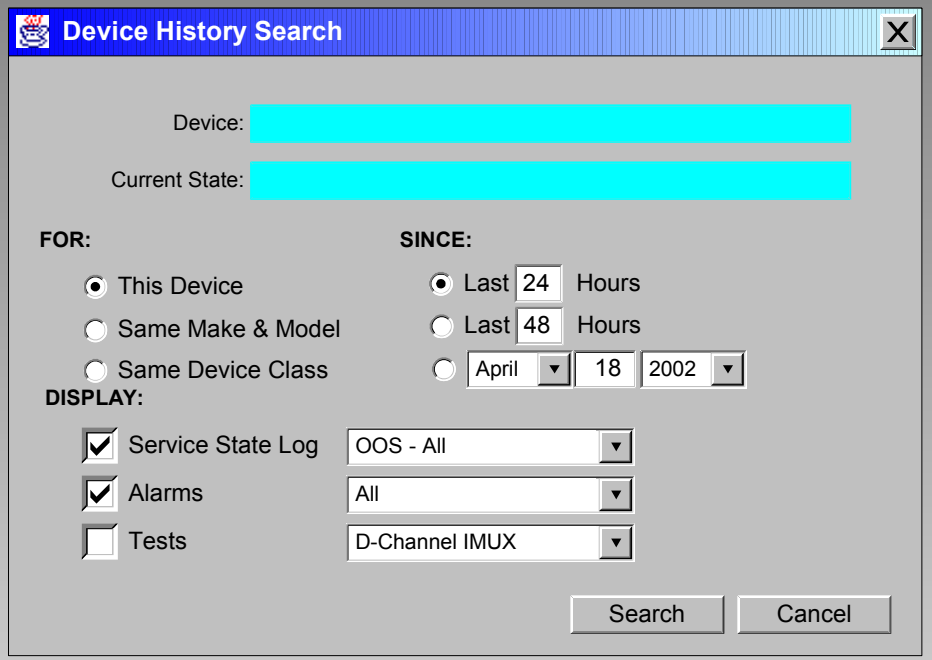
# History Search

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.




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.

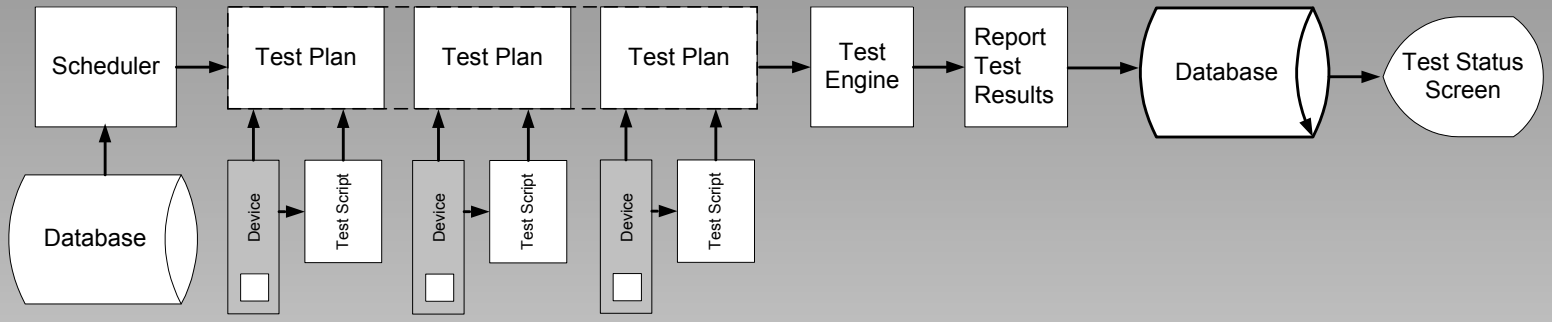
The selected information is presented in a separate window and can be resorted in that window.

# Application Programming Interface

## Application Programing 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.

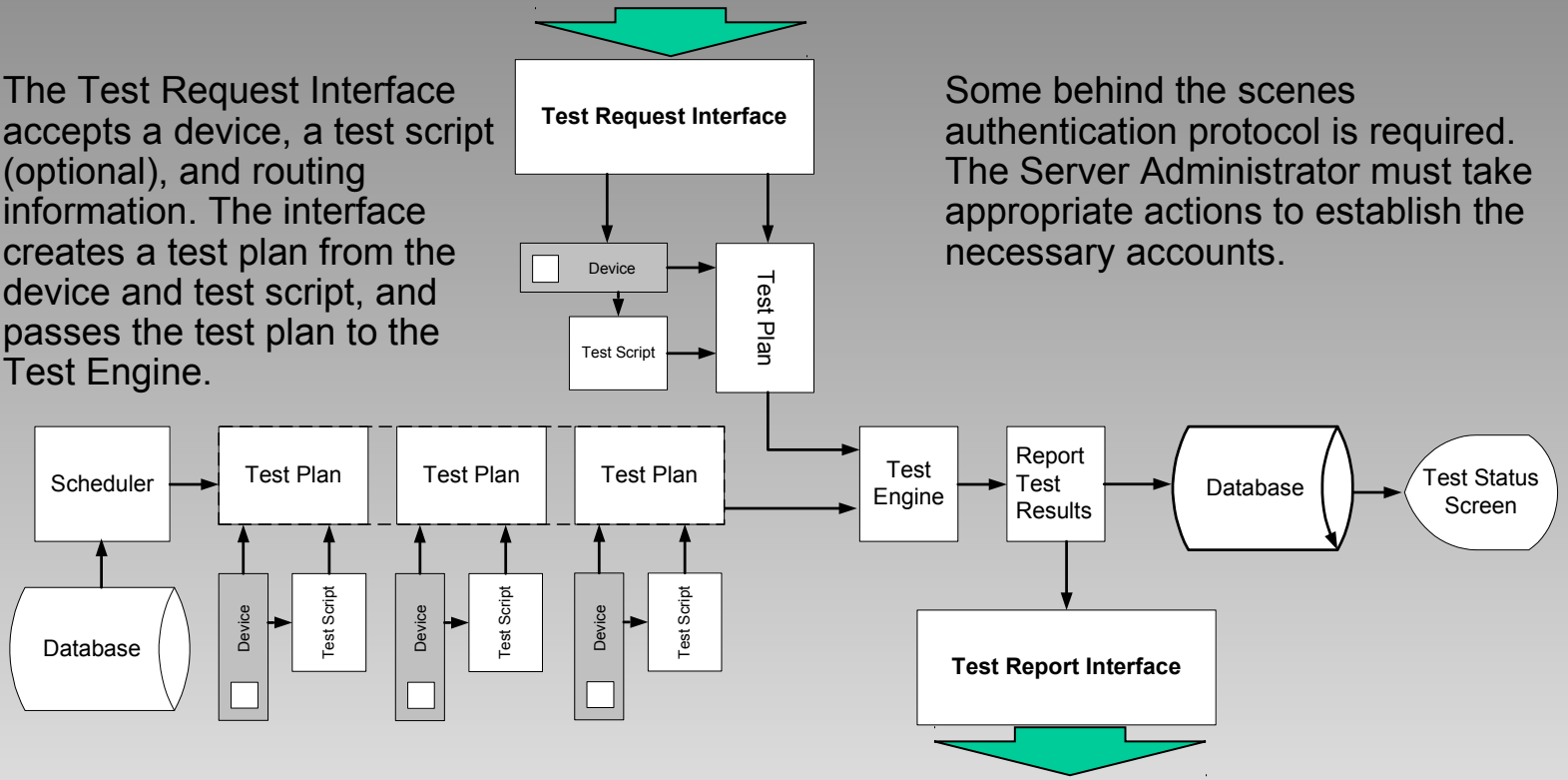
The **Remote Test Execution Interface** adds two modules with published SNMP MIB interfaces.

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

## Application Programing 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.



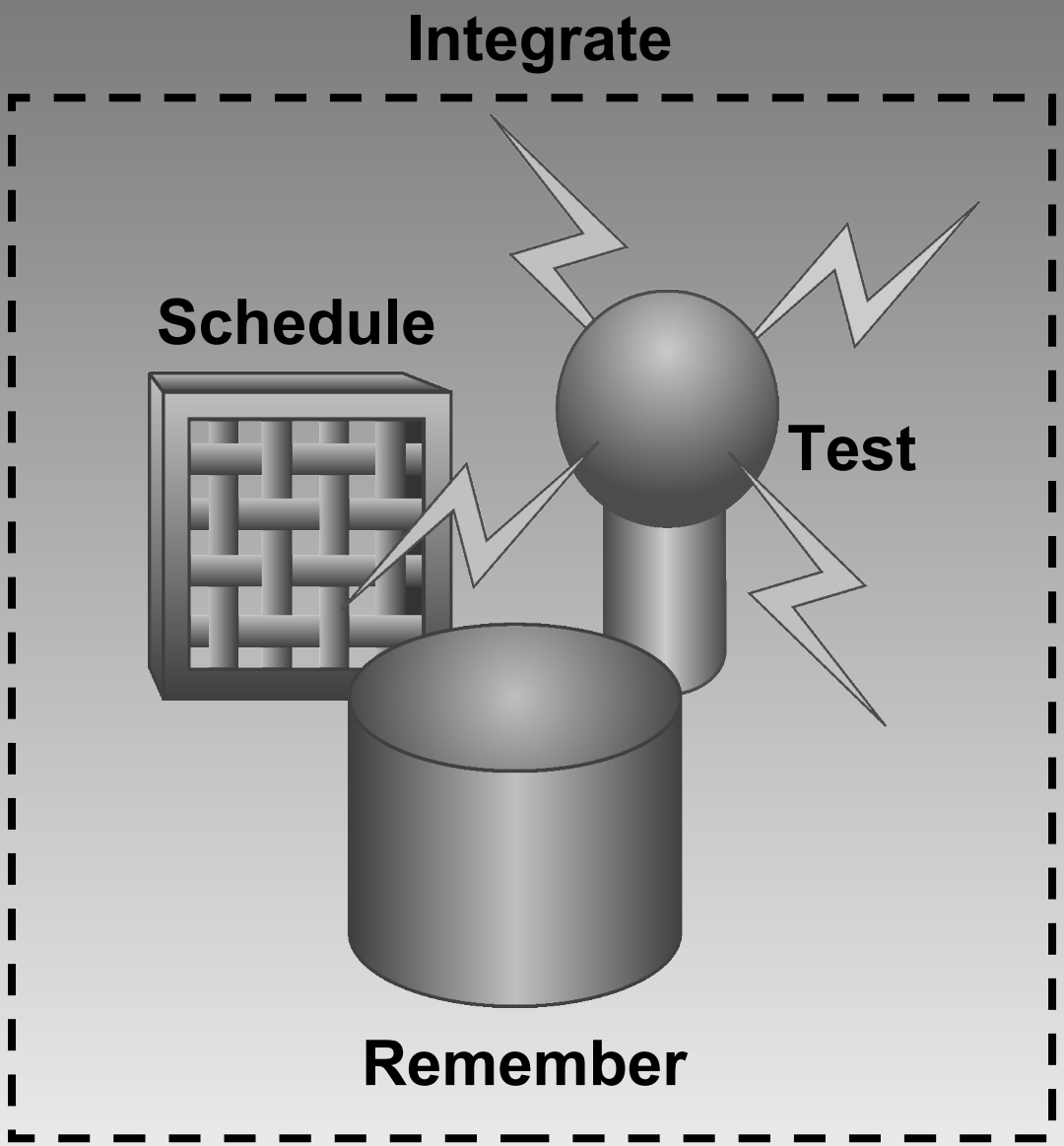

Some behind the scenes authentication protocol is required. The Server Administrator must take appropriate actions to establish the necessary accounts.

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.




**T-Synergy, Inc.**