

T-Synergy

H.320 / H.323 Videoconferencing

IMPACT[®]

Product Guide

Carrier & Enterprise Grade

Network Management & Operation Support System

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Network Management and Operation Support System

Network Management & Operation Support

What Makes a Good System

- Scalability
- Fault & Alarm Monitoring
- Technology & Vendor Independent User Interface
- Reactive Troubleshooting
- Proactive Network Management
- Function Oriented User Interface
- Historical Data Analysis

Network Management & Operation Support

Scalability

- Thousands of Endpoints
- Multiple Subnetworks
- Multiple Simultaneous Users
 - Networked Workstations
 - Centralized, remote, and localized network testing
 - Automatic resource allocation
- Multiple Simultaneous Tests
 - Automatic resource optimization

Network Management & Operation Support

Fault & Alarm Monitoring

- Communications Failures
- Endpoint Device Status & Alarms
- Network Element Status & Alarms
- Test and Protocol Alarms

Network Management & Operation Support Technology & Vendor Independent User Interface

- Select origination and destination endpoints
- Test equipment is just another endpoint
- Data transport, protocols, and interworking handled automatically
- E.164 alias and firewall transparency

Network Management & Operation Support

Reactive Troubleshooting

Fast, easy response to videoconference problem reports:

- Selection of endpoint automatically determines appropriate test equipment and network elements
- Selection of endpoint(s) automatically includes other participating devices in an in-progress conference
- Fast and easy test result interpretation with knowledge-base assistance
- More powerful for advanced network operators, easier for new network operators.

Network Management & Operation Support

Proactive Network Management

Proactive Preventive Diagnostics:

- Automatic pre-conference endpoint and network element testing
- Automatic interval testing of endpoints and network elements

Network Management & Operation Support

Function Oriented User Interface

- Tests and monitors “transactions,” not “components”
- Fast and easy administration of endpoints, network elements, and test equipment
- Select origination and destination endpoints
 - Associated monitoring equipment selected automatically
 - Test equipment settings filled in automatically

Network Management & Operation Support

Historical Data Analysis

- Searchable database
 - History of test results
 - History of alarms
 - Search by device, date, type, severity

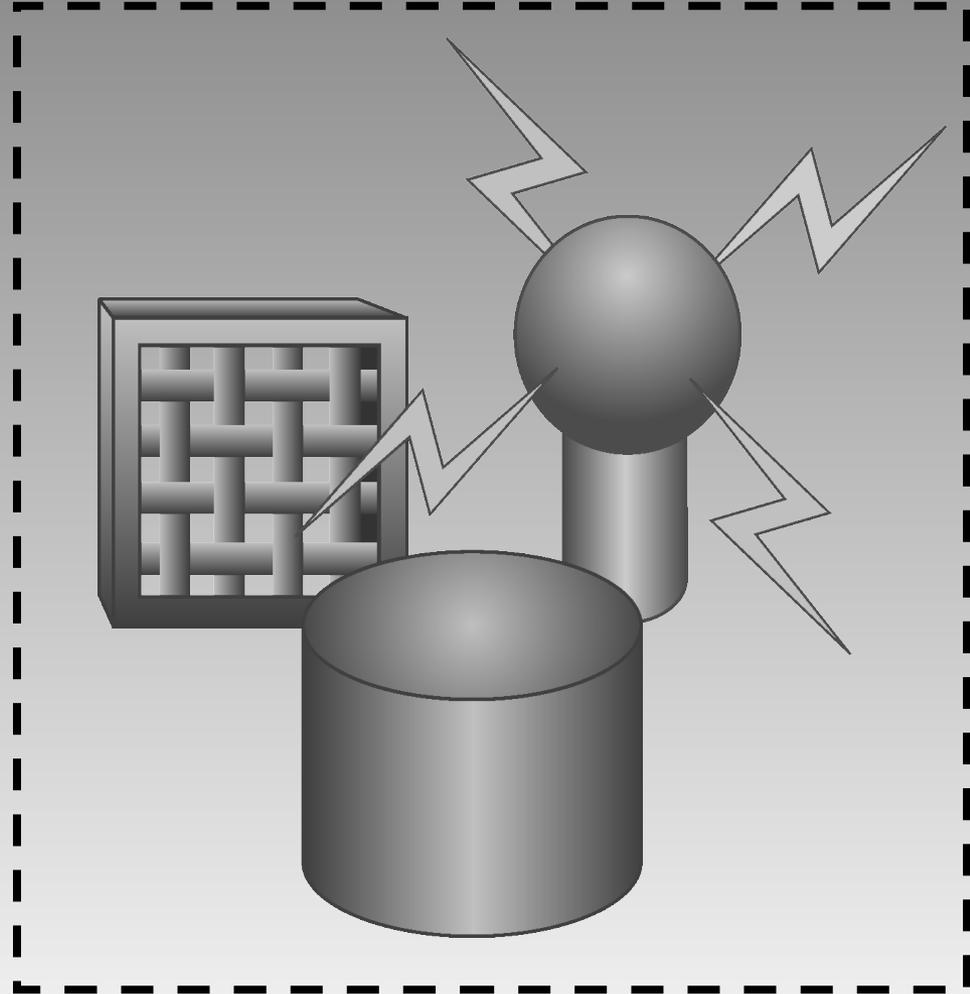
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Capabilities Overview

IMPACT Capabilities Overview

Integrated Functionality

- **Testing**
- **Scheduling**
- **Database**



IMPACT Capabilities Overview

Basic IMPACT®

– Full Test Device Capability

- Automated Testing
- Automated Monitoring
- Alarm Export

– Scheduler

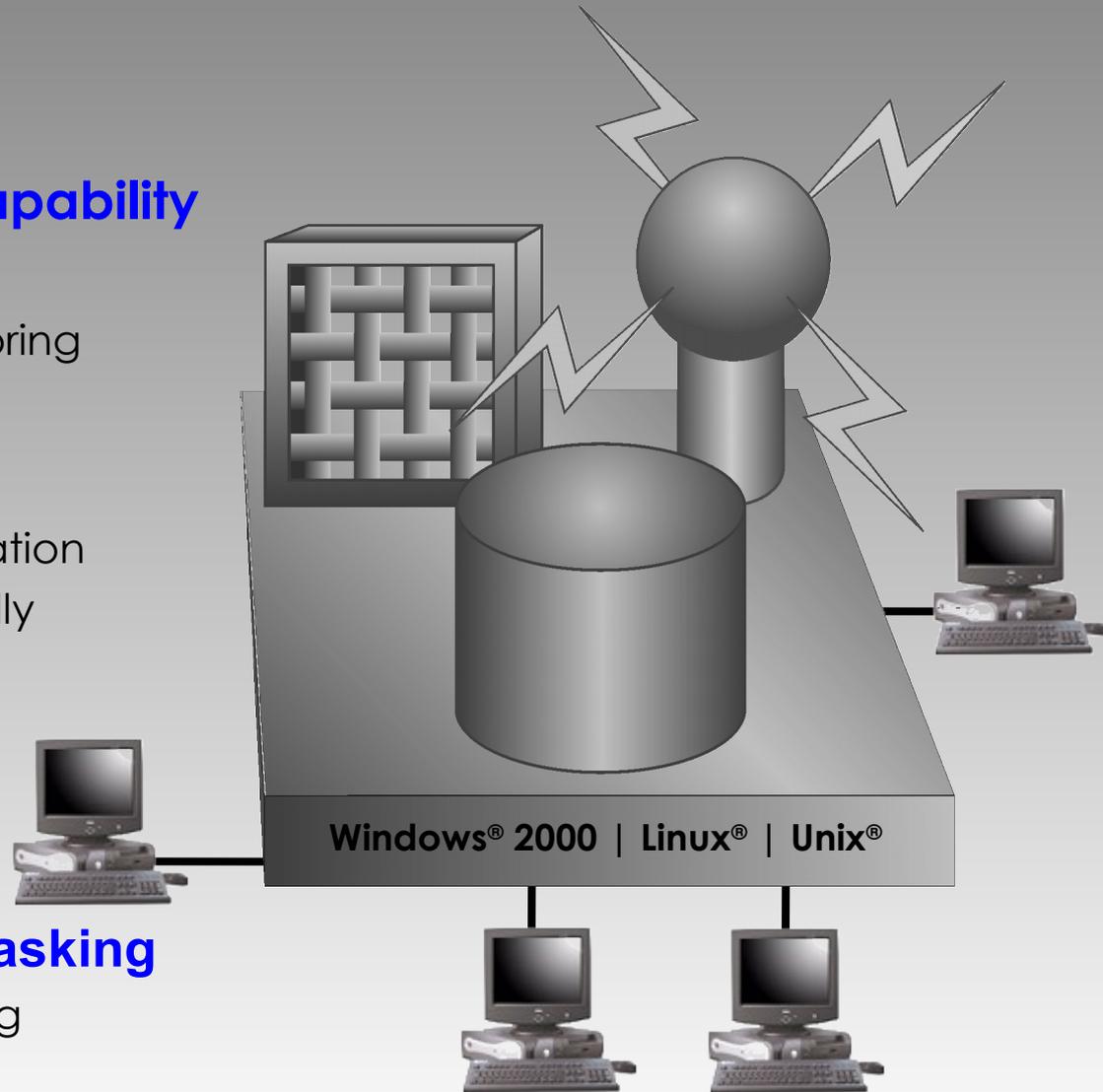
- Unattended Operation
- Once or Repeatedly

– Database:

- Equipment
- Equipment History
- Test History

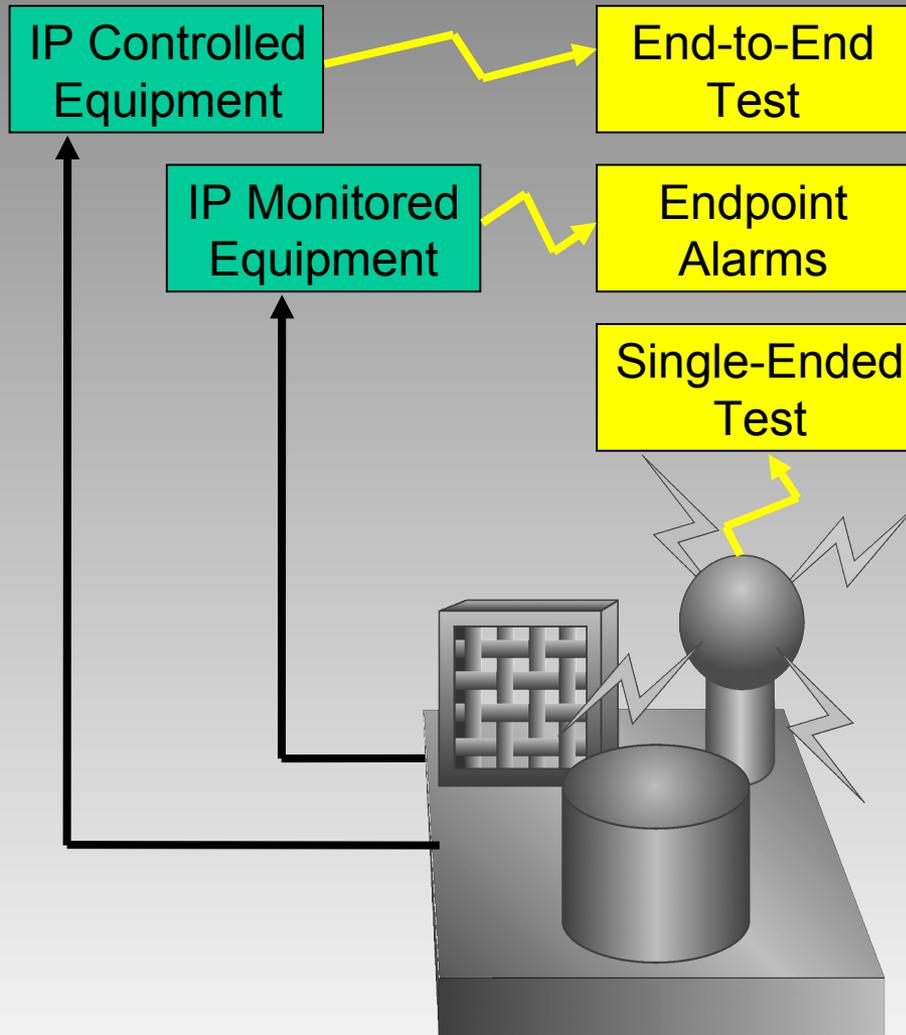
– Multi-User, Multi Tasking

- Resource Balancing
- Java / XML



IMPACT Capabilities Overview

Equipment Selection



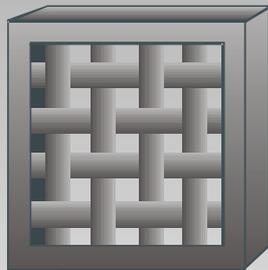
Selection:

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

IMPACT Capabilities Overview

Scheduling

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

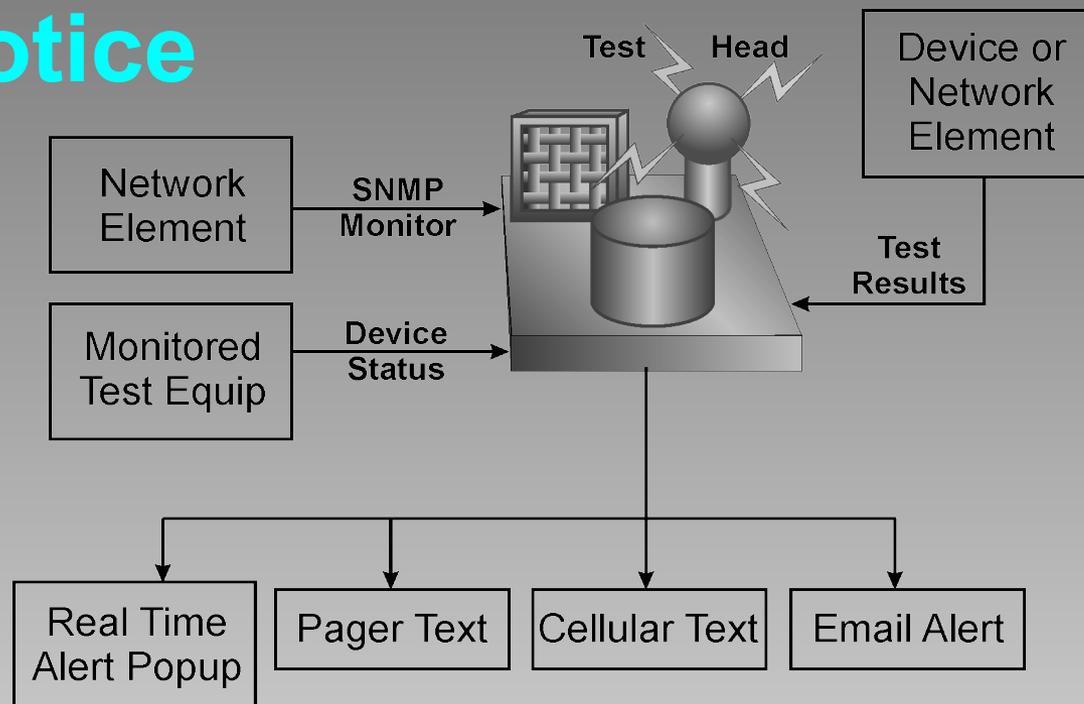


Schedule assurance tests before using components to insure equipment and link availability

A screenshot of the IMPACT Scheduling configuration window. The window has tabs for 'Configuration' and 'Schedule', with 'Schedule' selected. Below the tabs are sub-tabs for 'Frequency' and 'Send Alert'. The main area contains a 'Test Name' field, a 'Select Schedule' section with radio buttons for 'Once', 'Hourly', 'Daily', 'Weekly', 'Monthly', and 'Soak', and various input fields for time, date, and frequency. The 'Once' option is selected, and the start time is set to 12:18 on 01/08/2003. The 'Until' option is also selected, with the end time set to 01/08/2003. The 'Run' option is also selected, with the number of times set to 0. The window is titled 'Configuration Schedule'.

IMPACT Capabilities Overview

Alarms & Notice



- **Alarms In**

- Network Element SNMP Status
- Monitored Test Equipment Status
- Test and Protocol Alarms

- **Notice Out**

- Real Time Alert popup, pager text, cell phone text, and/or email wherever it needs to go for rapid response and repair

IMPACT Capabilities Overview

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.

3 Testing Strategies

Reactive Troubleshooting

Fast, easy response to videoconference problem reports:

- Make direct interactive test calls on the same network (ISDN/IP).
- Make call as reported by the user, including any ISDN/IP interworking and any network elements such as routers, switches, gatekeepers, gateways, and MCUs.
- Schedule automated retesting at intervals (including “soak” stress testing).
- Fast and easy test result interpretation with knowledge-base assistance.

Proactive Network Maintenance

Proactive Preventive Diagnostics:

- Set up automatic interval testing of endpoints and network elements
 - Daily
 - Weekly
 - Monthly
- Set up scheduled pre-conference endpoint and network element testing for regularly scheduled conferences
- Use real-time alert or email notification when problems are found.

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Using IMPACT®

Using IMPACT

Permission Groups

The available features groups for each network operator, and the screens within some groups, depend on the specific user permission:

1. **Monitoring & Testing** (General Users)
 - User can Monitor device status and alarm state, and Test devices in the network interactively (reactive) or proactively.
1. **Network Configuration**
 - User defines Companies, Locations, Rooms, and Devices in the network.
1. **Application Administration**
 - User controls application parameters such as backup.
1. **User Administration**
 - User can Add/Change/Delete other users.

When a user is assigned more than one permission group, the features are active simultaneously.

Using IMPACT

Monitoring & Testing

The **Monitoring & Testing** permission group includes:

- Monitor device and Network Element status and alarms.
- Run interactive diagnostic tests of registered and off-net endpoints
- Run preventive and verification (scheduled) tests of registered and off-net endpoints
- Search device history, alarm history, and test history files for useful diagnostic or repair information

Monitoring & Testing

Status Monitoring

Device Tree

- Company
- State
- City
- Location
- Room
- Device

Status by Color
Propagates Upward

Critical
Major
Minor
Normal
Unknown

List Panel

The screenshot shows the TSYNERGY IMPACT Video Network Management Console. On the left is a 'Device Tree' showing a hierarchy: IMPACT > Company A, T-Synergy, Z Company > GA > Atlanta > Headquarters > Conference Room C > Escort 137, Tandberg 112, Test Lab > Cosine Router, Test Head 103, Test Head 104, Test Head 105. On the right is a 'Grid Status by Color' showing a grid of device icons categorized by company: Company A (Tandberg 1..., Test Head ...), T-Synergy (Accord MCU, Cisco Router, Escort 134, EthernetSw..., FVC MCU, Gateway, H323 Analy..., H323 Analy..., LVG GK+GW, PictureTel..., Sony - HW..., Test Head ..., VTel Codec), and Z Company (Cosine R0..., Escort 137, Tandberg 1..., Test Head ..., Test Head ..., Test Head ...). At the bottom, a 'List Panel' shows 'Detail Status for Selected Room/Device' for Escort 137: Device Type: [Icon], Device Name: Escort 137, Make and Model: VIGO, System ID: 22, Control State: Normal, SNMP State: Unknown, Device Alarms: Minor, ISDN Alarms: Unknown, IP Alarms: Normal, Test Alarms: Major, Location: Headquarters.

Monitoring & Testing

Alarm Monitoring

Alarm Filters
subset the display

The screenshot shows the TSYNERGY IMPACT Video Network Management Console interface. At the top, there are menu options (File, Help) and tabs (Status, Alarms, Testing, User Preferences). Below the tabs is a 'Filter Alarms' section with dropdown menus for 'Alarm Sev' (All), 'Alarm Type' (All), and 'System ID' (All), along with a 'Filter Alarm List' button.

The main area displays an 'Active Alarm List' table with the following data:

De	System ID	Device Name	Make and Model	Location	Severity	Alarm Type	Active	Cleared	Description
23	Escort 134	VIGO	T-Synergy ...	T-Synergy ...	Major	Test	10:16:08 01-08...		Test Failure
18	VTel Codec	384	T-Synergy ...	T-Synergy ...	Major	Test	07:49:06 01-08...		Test Failure
20	Tandberg 110	1000	T-Synergy ...	T-Synergy ...	Major	IP Transport	12:18:22 01-08...		Gatekeeper Registration Failure
23	Escort 134	VIGO	T-Synergy ...	T-Synergy ...	Minor	Device	10:16:08 01-08...		Test Failure on this Device
18	VTel Codec	384	T-Synergy ...	T-Synergy ...	Minor	Device	07:49:06 01-08...		Test Failure on this Device
20	Tandberg 110	1000	T-Synergy ...	T-Synergy ...	Minor	Device	12:18:22 01-08...		Gatekeeper Registration Failure on this Device

Below the table is a 'Detail Panel' for the selected alarm. It contains two main sections: 'Identification' and 'Alarm Details'. The 'Identification' section includes fields for Device Name (Tandberg 110), System ID (20), Company (T-Synergy), Serial No., Make & Model (Tandberg - 1000), Room (Test Lab), Equip Location, Street (Industrial Way East), City (Eatontown), State/Prov. (NJ), Country (US), and Postal Code (07724). The 'Alarm Details' section includes Severity (Major), Went Active (12:18:22 01-08-2003), Alarm Clearing Code, Alarm Type (IP Transport), Description (Gatekeeper Registration Failure), and Alarm Detail (This device failed to register to gatekeeper at 192.168.237.88.). There are buttons for 'Show Control Panel' and 'Clear Test Alarm'.

At the bottom of the console is an 'Alarm History Search Criteria' section with fields for Start Time (12/08/01 - 07/2003), End Time (12/08/01 - 08/2003), Alarm Sev (All), Alarm Type (All), System ID (All Devices), and Sort By (Device, Active Time). A 'Retrieve Alarm History' button is also present.

Alarm List

Select to see detail

Double-click to open Test Console

Detail Panel

Shows complete detail
of selected alarm

Search History

By date, filter, and/or device

Monitoring & Testing Testing Console

Call Controls
filled in automatically

Select Originating
& Destination Devices
from Device Tree

Monitoring
Points added
automatically

ISDN/IP
Interworking
automatically

The screenshot displays the TSYNERGY IMPACT Video Network Test Center interface. The main window is titled "TSYNERGY IMPACT Video Network Test Center TestID=45 Test Started for 65 seconds".

Left Panel: Device Tree
A hierarchical tree structure showing the network topology. The root is "IMPACT", which branches into "Company A" and "T-Synergy". "Company A" includes "NY" (with "Albany" and "Headquarters" sub-nodes) and "Tandberg 110". "Tandberg 110" includes "Test Lab" and "Test Head 102". "T-Synergy" includes "NJ" (with "Eatontown" sub-node) and "T-Synergy Eatontown", which includes "Server Room", "Accord MCU", "Cisco Router", "EthernetSwitch", "FVC MCU", "Gateway", and "Test Lab". "Test Lab" includes "Eocort 134", "H323 Analyze", "H323 Analyze", "LVG GK+GW", "PictureTel - SV", and "Sonn - HW Lab".

Center Panel: Call Progress Indicator
A vertical panel with "Call Progress Indicator" text. It features two main sections: "Origination" and "Destination". Each section has a "Test Head" or "H323 Analyz..." button with a right-pointing arrow and a vertical progress bar.

Top Right Panel: Origination End Point
This panel shows "Test Head 102" with tabs for "Control", "Status", and "Configuration". It includes a "D-Ch Trace" window with a list of messages (M) and a "Call Data" section with fields for Direction, Type, Speed, Far End, Far End IP, Action, and Service. A "VIEW:" section shows "Channel ch 19 (crw=54)". Below is a "BERT" section with "Start", "Clear", and "Inject Error" buttons.

Bottom Right Panel: Destination Monitor Point
This panel shows "H323 Analyzer-2" with tabs for "Control", "Status", and "Configuration". It includes a "Video LAN Monitor" and "H.323 Call Trace" window. A table displays protocol messages with columns for Time, Source Address, Destination Address, Packet Data Unit (PDU), and Type. The table shows several RAS messages (RAS_UNREGISTRATION_REQUEST, RAS_UNREGISTRATION_CONFIRM, RAS_REGISTRATION_REQUEST, RAS_REGISTRATION_CONFIRM, H225_SETUP, RAS_ADMISSION_REQUEST, RAS_ADMISSION_CONFIRM, H225_ALERTING). To the right is a "Call Data" section with "Origination" and "Destination" fields.

Monitoring & Testing Scheduling

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

Configuration Schedule

Frequency Send Alert

Test Name

Select Schedule

Once Start at:(hh:mm) on 2003
MM DD YYYY

Hourly Start at: minutes after the hour

Daily Start at:(hh:mm) on Monday Friday
 Tuesday Saturday
 Wednesday Sunday
 Thursday

Weekly Start at:(hh:mm) every Sunday

Monthly Start at:(hh:mm) on the day of the month

Soak Start at:(hh:mm) 12:18 01 08 2003
MM DD YYYY

Every minutes apart

Until (hh:mm) 2003
MM DD YYYY

Run times (executed 0 times)

Monitoring & Testing

Real Time Alerts

User Settable Threshold

Real Time Popup Alert
Real Time Email Alert

Test Failure Notification

send email

Use ; as separator when typing email addresses

To:

CC:

Subject:

Format:

Notes:

Use 24-hour clock to set all times

Send Alert

If test failed times in a row

To whom

Send Email

If test failed times in a row

Use ; as separator when typing email addresses

To:

CC:

Subject:

Format:

Specify a short warning message Maximum 1000 Characters

Using IMPACT

Network Configuration

The **Network Configuration** permission group includes:

- Add/change/delete Companies
- Add/change/delete Facilities (Locations)
- Add/change/delete Rooms
- Add/change/delete Endpoint Devices & Network Elements

Network Configuration

Companies, Locations, Rooms

Edit Location Information

Company

Location Names

Location Name

Street Address 1

Street Address 2

City **State**

Postal Code

Country

Edit Company Information

Company

Company Name

Contact Person

Contact Number

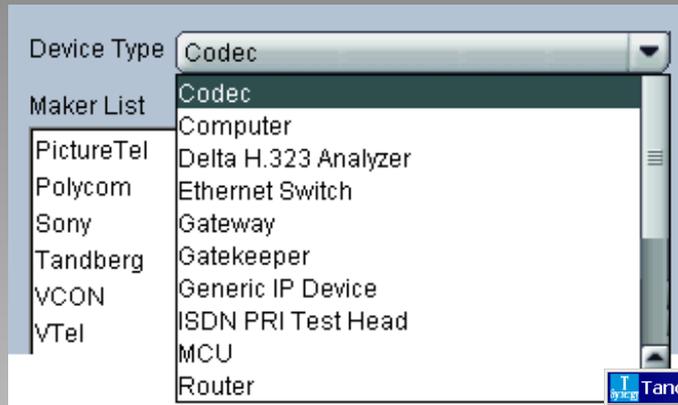
Contact Extension

Edit Room Information

Room

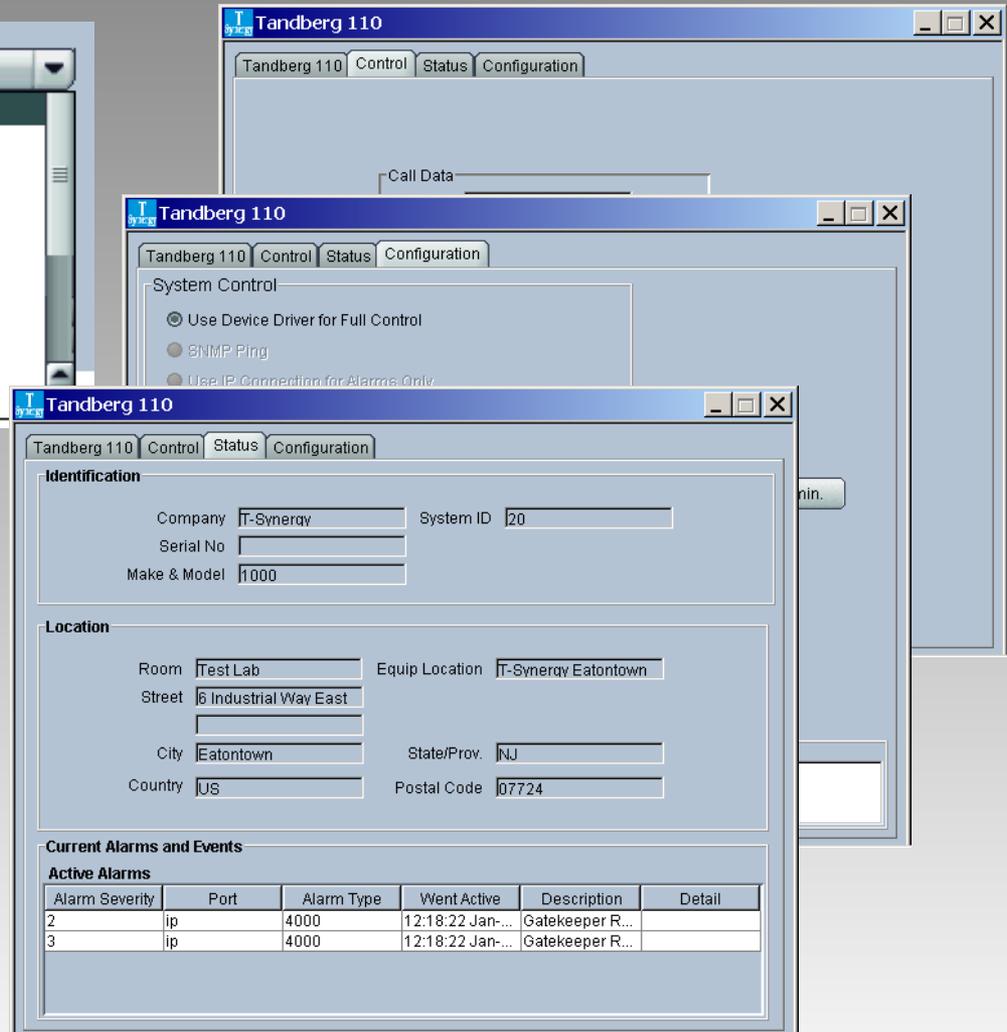
Network Configuration

Equipment Types & Control Panels



Configuration Wizard
assists in step-by-step definition of
different Endpoint Devices and
Network Elements

Device Control Panel
can be opened anytime



Using IMPACT

User Administration

The **User Administration** permission group includes:

- Add/change/delete Users
- Set each User's permissions
- Set each User's password

User Administration

Add/Change/Delete User

TSYNERGY IMPACT Video Network Management Administration Console --- IMPACT<TM> <Build 0.9.1.001 Client Module>

File Help

Users Company/Location Devices System Properties

User List

User List

- admin (admin)
- Jeff j Xia (xia)
- Jennifer j Yu (jyu)
- Jim M Winer (jwiner)
- Joe-E j Hu (jhu)
- Kevin k Tseng (ktseng)
- Linda Ong (long)
- Robin r Ying (rying)
- Steve s Akers (sakers)
- Sun s Wang (swang)
- Vera v Tang (vtang)

First Name

M.I.

Last Name

email

Phone Number ext.

Login ID

Password

Confirm Password

User Type

System Administrator

Application User

Privilege

User Admin

Device Admin

System Property

NM Application

Add User Modify User Delete User Clear

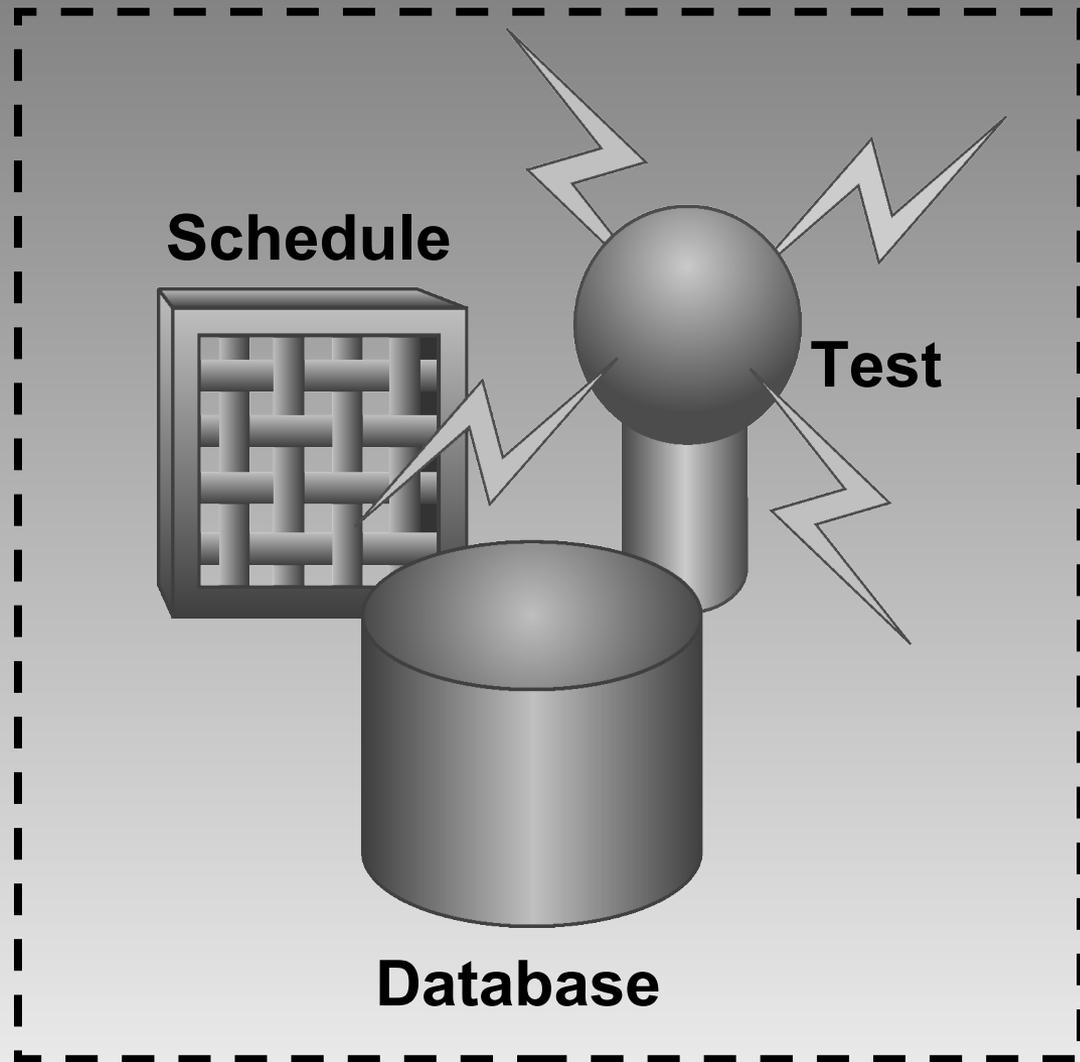
Using IMPACT

Application Administration

The **Application Administration** permission group includes:

- Schedule application backup.
- Upgrade license key

Integrated Functionality



T-Synergy, Inc.