



# Software Product Description

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**PRODUCT NAME: Compaq TeMIP Alarm Handling V4.1 for Windows NT®      SPD 70.64.02**

## DESCRIPTION

TeMIP is a set of solutions for the management of telecommunications and corporate networks, including fixed wire and mobile/cellular voice and data, multivendor, multi-technology networks. The TeMIP solution sets are built on top of the TeMIP Framework, and fully benefit from the object oriented and truly distributed software architecture.

TeMIP offers a high degree of openness and adherence to standards, supporting the International Standards Organization (ISO) management standards ISO 10164-x and 10165-x, and the TeleManagement Forum (TMF) component, system and ensemble sets. TeMIP and its features are applicable in the context of the International Telephone Union-Telecommunication Standards (ITU-T) X.73x.

In addition, TeMIP complies with the Telecommunication Management Network (TMN) M.3010, M3100 Recommendations and the Graphic Information Requirements for Telecommunications Management Objects TMF 046 Recommendation.

TeMIP integrates multiple management domains to provide complete network and service management facilities that include traffic monitoring, performance, transmission, SS7 and mobile management in infrastructures such as Switching, Data, IP and Broadband networks.

TeMIP gives network operators a global view of their networks, and enables them to activate management functions and operations from single or multiple workstations.

As part of the current solution sets, TeMIP is now delivering comprehensive off-the-shelf fault

management client applications running in the Windows NT environment. These applications provide Map Viewing, Real-Time Alarm Handling, Alarm History and Trouble Ticketing functions that can aid the prediction, identification and resolution of failures in a telecommunications network before they impact services.

TeMIP Alarm Handling for Windows NT is integrated into the Workspace environment of a running TeMIP Client and is composed of the following components:

- Real-Time Alarm Handling
- Alarm History

TeMIP Alarm Handling for Windows NT has been developed and integrated using the Client-Server version of the TeMIP Access Library (TAL) Toolkit, which allows a remote PC client GUI to access TeMIP services through a distributed Client-Server system, running under the NT Operating System.

## TeMIP WORKSPACE

This window is an application container that allows you to create and display Map Views, Real-time Alarm Handling Views, Alarm History Views and Trouble Ticketing Views in the same working area. This integrated environment is known as the Workspace.

For details of the TeMIP MapViewer for Windows NT, refer to the Software Product Description (SPD 70.64.xx) and for details of Clarify Liaison Trouble Ticketing refer to the Software Product Description (SPD 70.86.xx).

When the Workspace has been optimized for a particular task or way of working, the configuration that has been created can be saved so that the same configuration can be applied at some other time, or in another session. The options saved are known as the user Workspace.

### Customization

Specific customizations that can be carried out in the Workspace are:

- The user can set the colors that reflect the different levels of alarm severity. The color can apply to some fields or to the entire row and to Map Item decoration.
- Any view in the window can be moved inside or outside of the main window (for example, by docking toolbars or frames).
- Sound can be enabled or disabled.
- Help can be displayed on a default external browser.
- An exit box can be displayed when exiting an application.

### Management Windows

Management windows run in the Workspace and enable users to select, perform, and view the results of management operations on a selected entity or entities. Management windows can be used, for example, to display or set entity attributes, or to suspend/resume an Operation Context. Management windows form an integral part of the overall management system, enabling the operator to intervene and take action when necessary. Several different management windows can be displayed simultaneously and the following customizations can be carried out:

- Enable an automatic Show command.
- Hide success and failure messages sent to the console.
- Automatically hide the input area if there is no argument.
- Automatically hide the output area. If the operation is unsuccessful, a message is displayed in the console.
- Make selected attribute fields visible or invisible in the window.
- Change the order in which the attribute fields are displayed in the window.

### Message Console

Some of the activities performed in the Workspace generate messages. These are displayed in the Messages Console frame. When a message is posted to the Console for display it is prefixed with an icon identifying the severity and content of the message, and the date and time when the message was created.

### Help Browser

For on-line help.

## TeMIP ALARM HANDLING

TeMIP Alarm Handling collects and analyses problem information generated by the elements in a Telecommunications or Corporate Network.

This application is a true client of the already deployed TeMIP Alarm Handling on Compaq Tru64 UNIX functionality. It provides presentation capabilities with the familiar look and feel of Windows applications.

Refer to the TeMIP Fault Management Software Product Description (SPD 45.24.xx) for detailed information on TeMIP Fault Management architecture and functional concepts.

Alarm Handling is defined as the collection and analysis of problem information contained in Alarm Objects (AO). Alarm in ISO terminology is a specific type of event, whose purpose is to enable real-time monitoring and management. An Alarm Object is the result of the conversion of volatile alarm data into an Object Instance. As an object, the alarm can be handled and processed by the application.

Operation Contexts (OC) are used to "collect", classify and filter alarm data.

OCs are the TeMIP Alarm Handling objects that collect and filter OSI alarms and create AOs within a collection domain.

Alarm Handling on Windows NT (AH NT) performs operations on a Windows NT client GUI that manages alarm information from a TeMIP Alarm Handling Function Module (TeMIP AH) running a remote TeMIP Director under Compaq Tru64 UNIX. This includes the day-to-day handling of alarm information, general administration of the OCs, and controlling the display of alarm information.

Note that OC definitions cannot be created or monitored using the AH NT.

The AH NT performs real-time operations on AOs created by selected OCs. The OCs must be selected

and enabled in the AH NT before the associated alarms are displayed in the real-time view.

The day-to-day use of the AH NT can be divided into two main areas:

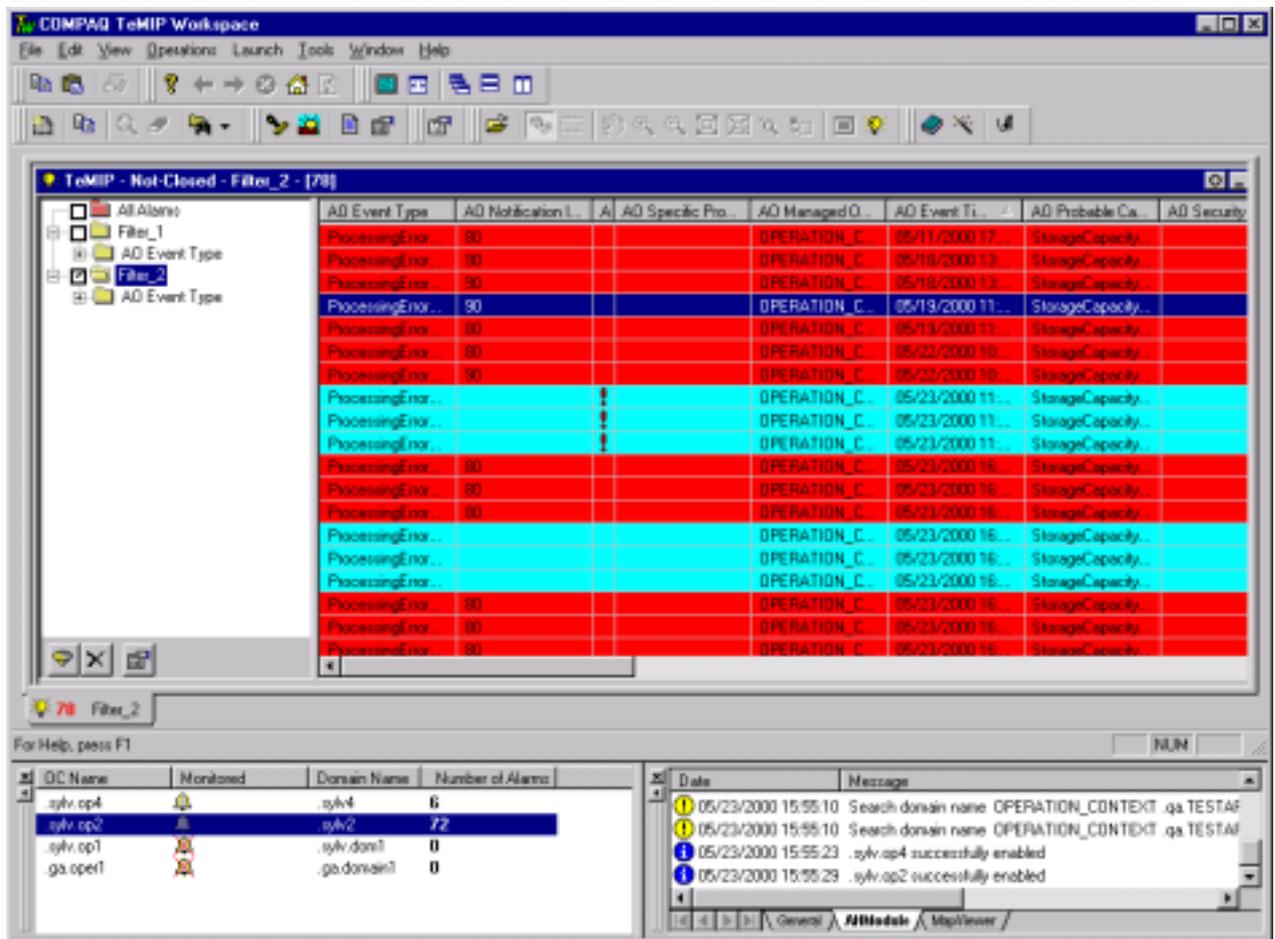
- The Real-Time Alarm Handling (RTAH) application, for real-time monitoring of alarms
- The Alarm History, providing retrospective analysis of alarm data.

The Real-Time and History applications can be run as

two separate and distinct applications, or 'integrated' to represent one single user interface. Integration also allows the two applications to interact. For example, an alarm search can be initiated from the Alarm History window and the resulting alarm list displayed in the Real-Time workspace, that is the operator's display view.

Figure 1 illustrates an example of the Alarm Handling main window showing the current alarm list, the active filters and Operation Contexts, and the message console.

Figure 1 Alarm Handling Main Window



**Real-Time Alarm Handling**

The AH NT performs real-time operations on AOs created by selected OCs. The OCs must be selected and enabled in the AH NT before the associated alarms are displayed in the real-time view.

The main AH window displays a detailed list of in-scope alarms for the selected and monitored OCs, including information such as *Event Time*, *Probable Cause* and *Perceived Severity*.

Users with administrator privileges can change the scope of the alarm data, which changes the behavior of the Real-Time window. The default scope is *Not-closed*, other possibilities are *Not-handled*, *Outstanding* and *Not-terminated*.

The available operations and counters in the Real-Time Alarm View include:

- **Enable Operation Context**, select and enable an OC from a dedicated OC List in order to display the corresponding alarms in an Alarm List. This also updates any open Map Views that contain this OC.
- **Disable Operation Context**, disable an OC in the OC List and reflect the change in the Alarm List.
- **Show Full Information**, display detailed information on the alarm.
- **Acknowledge the Alarm**, change the state of the alarm(s) to *Acknowledged/Not-handled*.
- **Terminate the Alarm**, change the state of the alarm(s) to *Terminated/Closed*.
- **Add or Modify an Operator Note to the Alarm**, add a note to the alarm(s), or modify an existing note to assist maintenance personnel.
- **Set Additional Text, Perceived Severity, User Identifier and User Text**
- **Edit Operations, Copy**, copy the alarm information to the clipboard.
- **Edit Operations, Select All**, select all the alarms in the list.
- **Launch Application**, start an external NT application.
- **Find Entity**, integrated with the Map Viewer **Find...** option. Searches for the requested entity in the displayed hierarchy and centres the Map View on the entity. If several instances are found, the hierarchy of Map Views containing the entity is listed.
- **Alarms Found Counter**, a total count of the alarms found and displayed in the list.
- **Filtered Alarms Counter**, a total count of the alarms satisfying an applied filter and displayed in the list.
- **New Filtered Alarms Counter**, a count of the alarms added to the filtered list after a "reset".
- **Alarm Filtering**

The AH NT offers filtering features that allow the display list to be refined. Alarm data can be filtered

using a comprehensive set of pre-defined criteria and logical operators.

Users' filter definitions can be saved, re-used and deleted by user operators. Furthermore, administrators can define, modify and delete 'system-wide' filters that can be shared by other operators. Filter types are distinguishable by the color of their retaining folder.

Different filters (N-stage filtering) can be activated at the same time to allow further refinement of the filtered alarms.

- **Pseudo Alarms**

Pseudo alarms are generated when a real-time alarm of severity *Clear* is correlated with one or more *Not-handled* alarms. Pseudo alarms do not produce alarm objects, but they are counted as part of the total number of alarms not yet handled for a given OC.

- **Filter out alarms prior to the last reset counter operation**

The active filter is augmented with a sub-pattern, which filters all the alarms whose Event Time is later than the reset counter time

- **Alarm Reduction**

Similar alarms computed at the Alarm Handling FM level can be displayed and allow a reduction in the number of alarms displayed. A counter representing the number of similar alarms associated with a given Original Alarm is provided by the Alarm Handling FM and displayed in a new column.

- **Perceived Severity Charts**

Different graphical representations of alarm statistics can be displayed in real-time. These graphical representations include bar or pie charts per operation context or managed object.

### Alarm History

The Alarm History feature displays alarm information retrieved from the AO databases. The Alarm History View displays a "snapshot" of alarm information from when the view was called or when the last search operation was performed.

When a search is initiated, TeMIP begins to retrieve alarm records from the selected OC repositories. If no search criteria are applied to the initial search, TeMIP starts to retrieve all alarm records in the repositories of the selected OC(s). Users can stop a search at any time or wait until the search is completed.

The available operations are similar to those used in the Real-Time view with the exception of the filtered alarm

counters and OC List, which do not apply to the Alarm History View:

- **Show Full Information**, display detailed information on the alarm.
- **Acknowledge the Alarm**, change the state of the alarm(s) to *Acknowledged/Not-handled*.
- **Terminate the Alarm**, change the state of the alarm(s) to *Terminated/Closed*.
- **Add or Modify an Operator Note to the Alarm**, add a note to the alarm(s), or modify an existing note to assist maintenance personnel.
- **Edit Operations, Copy**, copy the alarm information to the clipboard.
- **Edit Operations, Select All**, select all the alarms in the list.
- **Launch Application**, start an external NT application.
- **Alarms Found Counter**, a total count of the alarms found and displayed in the list.
- **Alarm Searching**, search for alarms defined by selected criteria.

The Alarm History application has an alarm search facility that allows the alarm list to be refined. Search patterns can be defined using a comprehensive set of pre-defined criteria and implicit logical operators: OR (for values inside an attribute), and AND (for values between attributes). For example:

```
Search Severity = Critical, Major State = Outstanding, Acknowledged
```

... results in a search for alarms with severity Critical OR Major AND with state Outstanding OR Acknowledged.

Users' search definitions can be saved, re-used and deleted. In addition, administrators can define 'system-wide' search patterns that can be shared by other operators, these search patterns can also be modified or deleted but only by an administrator.

### Alarm Handling User Interface

The AH NT has a typical Windows browser-type interface. The main window consists of a menu bar, toolbars, various frames that contain different views of the data, and a status bar.

The Real-Time Alarm View comprises three main sections: the Filter Tree, the Filter Toolbar and the Alarm List.

### Alarm List

The Alarm List contains a list of in-scope alarms for all the active OCs. Only those alarms that satisfy the selected filter criteria are displayed. The list contains details of the alarms, their characteristics and status. The amount of information that can be displayed for each alarm is fully customizable (for example, Reorganizing Columns, Alarm sorting attribute, Alarm sorting order, ...).

Additional Alarm Columns, specifying the additional fields, where the additional field details are retrieved from the Additional Text information using configurable parsing rules.

The sorting on alarms can be defined on non-visible columns and also on additional columns.

### Filter/Search Pattern Tree

This viewer contains a Filter Pattern Tree for the RTAH and a Search Pattern Tree for the Alarm History. This displays the filter/search patterns that are associated with the selected Workspace and available for use with the Alarm List.

Regular expressions can be used in filter patterns with attributes that are converted to a String, for example, Operator Note.

### OC List

The Workspace's OCs that are currently available for selection are listed in this frame, together with their selection and monitored state (Enabled, Disabled or Degraded), Domain Name and number of alarms.

The Alarm History window does not contain an OC List, instead a 'browse edit control' allows you to select OCs from a list accessed from the main toolbar or **File/OC List** command.

### Full Information

Double-clicking on an alarm in a management window in the alarm list displays all its known attributes in the Full Information window. An alarm's Full Information window can also be accessed from the toolbar, or from a Pop-up menu.

### Drag and Drop

You can drag alarms from the list and drop them into various destinations:

- Filter Tree - drag and drop alarm attributes into the filter frame to create or modify a filter definition
- Export text - drag and drop one or more alarms into an editor, or a Mail composer, to export "text" information associated with the selected alarms. This feature can be used to create printouts of alarm information.

**Set Operator Note**

The Set Operator Note window is used to attach an operator note to an alarm to assist maintenance personnel. This operation can be started by clicking on the corresponding toolbar button or from the Operation menu.

**External CORBA Interface**

An external CORBA interface providing Alarm Handling, Alarm History and OC control services by means of a customer-defined application. Functions such as Get OC List, Add/Remove OC, Enable/Disable OC, Get Filter Pattern List, Display Associated Alarms, Display Alarm History... are available.

**TeMIP Synonyms**

TeMIP entities can be displayed as TeMIP Synonyms. This feature provides a facility offering a platform wide instance naming alternative, including user friendly names, support of alternate identifiers and naming issues for SNMP, OSI and CORBA. The synonym service allows a TeMIP application to associate a synonym of a given type with an Entity Specification.

**Display Options**

The user can change the display options of the different windows. These options can be set by a couple of mouse clicks in a way that is similar to any other NT application. The following are examples of settable options:

- The user can set the colors that reflect the different levels of alarms, the color can apply to some fields or to the entire row.
- Optionally, the sound on alarm occurrence can be set globally or when an alarm passes a specific filter. The alarm sound can be defined on a per filter basis.
- Column field names can also be changed.
- User can choose the information to display by hiding some alarm/OC fields.
- The visibility and order of the Full Information Window can be modified.
- Any view in the window can be moved inside or outside the main window (for example, by docking toolbars or frames).

**DOCUMENTATION**

*Compaq TeMIP Client for Windows NT Installation and Configuration Guide*

*Compaq TeMIP Client for Windows NT User's Guide.*

**GROWTH CONSIDERATIONS**

The minimum hardware/software requirements for any future version of this product may be different from the current version requirements.

**YEAR 2000 READY**

This product is Year 2000 Ready.

"Year 2000 Ready" products are defined by Compaq as products capable of accurately processing, providing, and/or receiving date data from, into and between the twentieth and the twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the associated Compaq product documentation and provided that all hardware, firmware and software used in combination with such Compaq products properly exchange accurate date data with the Compaq products.

For additional information visit Compaq's Year 2000 Product Readiness web site located at: <http://www.compaq.com/year2000>

To ensure that this product is Year 2000 Ready, code assessment and system tests to verify the transition between December 31<sup>st</sup> 1999 and January 1<sup>st</sup> 2000 were utilised.

To ensure that this product interoperates properly with other hardware and software, the system tests involving Compaq's TeMIP V4.0 are applicable, as this product was verified as being Year 2000 Ready.

**HARDWARE REQUIREMENTS**

Any Intel Pentium 133MHz or higher based PC is supported.

**Disk Space:**

Disk space required for installation: 55MB.

**Memory Requirements:**

The minimum memory supported is 64MB.

Recommended configuration for running TeMIP Alarm Handling for Windows NT application:

Compaq Presario with 96MB memory and 4GB disk space.

**SOFTWARE REQUIREMENTS**

Windows NT V4.0 plus Service Pack 5

TeMIP Access Library Client for Windows NT

**Note:** To execute any TeMIP Access Library application such as TeMIP Alarm Handling on Windows NT, you

must ensure that at least one TeMIP Access Library Server for Compaq Tru64 UNIX is running on a TeMIP Director.

**ORDERING INFORMATION**

*Compaq TeMIP Alarm Handling for Windows NT:*

Software License: QM-69LAA-AA

Software Media : QA-6HP\*\*-H8

Software Documentation only: QA-69L\*\*-GZ

Software Product Services: QT-69LA\*-\*\*

**Note:** \* denotes variable fields. For additional information on available services, or hardware platform tiers, refer to the appropriate price book.

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