

IBM® Tivoli® Netcool/OMNIbus Probe for
Lucent ITM-SC
6.0

Reference Guide
March 31, 2011



Note

Before using this information and the product it supports, read the information in [Appendix A, “Notices and Trademarks,”](#) on page 17.

Edition notice

This edition applies to version 6.0.5852 of IBM Tivoli Netcool/OMNIBus Probe for Alcatel-Lucent ITM-SC (SC23-7877-03) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC23-7877-02.

© **Copyright International Business Machines Corporation 2006, 2011.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Document control page.....	v
Chapter 1. Probe for Alcatel-Lucent ITM-SC.....	1
Summary.....	1
Installing probes.....	2
Internationalization support.....	3
Example multi-byte character set on Solaris.....	3
Configuring the probe.....	4
Data acquisition.....	4
Peer-to-peer failover functionality.....	4
Event data.....	5
Lucent ITM-SC Alarm Messages.....	5
Exclusions.....	7
Probe Operation.....	7
Login State.....	8
Lucent ITM-SC Resynchronization State.....	9
Normal State (Alarm Monitoring).....	10
Loss of Connection Between the Probe and Lucent ITM-SC.....	10
Reconnection Between the Probe and the Lucent ITM-SC.....	10
Properties and command line options.....	11
Elements.....	13
Error messages.....	14
Appendix A. Notices and Trademarks.....	17
Notices.....	17
Trademarks.....	18

Document control page

Use this information to track changes between versions of this guide.

The IBM Tivoli Netcool/OMNIBus Probe for Alcatel-Lucent ITM-SC documentation is provided in softcopy format only. To obtain the most recent version, visit the IBM® Tivoli® Information Center:

http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/index.jsp?topic=/com.ibm.tivoli.nam.doc/welcome_ptsm.htm

Table 1. Document modification history		
Document version	Publication date	Comments
SC23-7877-02	December 31, 2008	First IBM publication.
SC23-7877-03	March 31, 2011	Installation section replaced by “Installing probes” on page 2.

Chapter 1. Probe for Alcatel-Lucent ITM-SC

Lucent G2 is a protocol common to Lucent management solutions. It is used by the Lucent XMC interface to collect data from the IBM Tivoli Netcool/OMNIBus Probe for Alcatel-Lucent ITM-SC. The Probe for Alcatel-Lucent ITM-SC collects data from the Lucent XMC interface.

The Lucent XMC interface can also collect data from the Lucent Integrated Transport Management - Network Manager (ITM-NM). For details of the probe that can acquire this data, see the Probe for Lucent ITM-NM guide.

This guide contains the following sections:

- [“Summary” on page 1](#)
- [“Installing probes” on page 2](#)
- [“Data acquisition” on page 4](#)
- [“Event data” on page 5](#)
- [“Probe Operation” on page 7](#)
- [“Properties and command line options” on page 11](#)
- [“Elements” on page 13](#)
- [“Error messages” on page 14](#)

Summary

Each probe works in a different way to acquire event data from its source, and therefore has specific features, default values, and changeable properties. Use this summary information to learn about this probe.

The following table provides a summary of the Probe for Alcatel-Lucent ITM-SC.

Table 2. Summary	
Probe target	Lucent ITM-SC versions 4.4.1 and 10.0 using the G2 Protocol
Probe executable name	nco_p_lucent_g2itm_sc
Package version	6.0
Probe supported on	For details of supported operating systems, see the following Release Notice on the IBM Software Support Website: https://www-304.ibm.com/support/docview.wss?uid=swg21414864
Properties file	\$OMNIHOME/probes/archlucent_g2itm_sc.props
Rules file	\$OMNIHOME/probes/archlucent_g2itm_sc.rules
Requirements	A currently supported version of IBM Tivoli Netcool/OMNIBus probe-compatibility-3.x (for IBM Tivoli Netcool/OMNIBus version 3.5 or 3.6)
Connection method	TCP/IP

Table 2. Summary (continued)	
Remote connectivity	The Probe for Alcatel-Lucent ITM-SC can connect to a device on a remote host. Details of the remote host are specified using the Host and Port properties in the properties file.
Multicultural support	Available
Peer-to-peer failover functionality	Available
IP environment	IPv4 and IPv6 The probe is supported on IPv6 when running on IBM Tivoli Netcool/OMNIBus V7.3.0, 7.3.1 and 7.4.0 on all UNIX and Linux operating systems.
Federal Information Processing Standards (FIPS)	IBM Tivoli Netcool/OMNIBus uses the FIPS 140-2 approved cryptographic provider: IBM Crypto for C (ICC) certificate 384 for cryptography. This certificate is listed on the NIST website at http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401val2004.htm . For details about configuring Netcool/OMNIBus for FIPS 140-2 mode, see the <i>IBM Tivoli Netcool/OMNIBus Installation and Deployment Guide</i> .

Installing probes

All probes are installed in a similar way. The process involves downloading the appropriate installation package for your operating system, installing the appropriate files for the version of Netcool/OMNIBus that you are running, and configuring the probe to suit your environment.

The installation process consists of the following steps:

1. Downloading the installation package for the probe from the Passport Advantage Online website.

Each probe has a single installation package for each operating system supported. For details about how to locate and download the installation package for your operating system, visit the following page on the IBM Tivoli Knowledge Center:

http://www-01.ibm.com/support/knowledgecenter/SSSHTQ/omnibus/probes/all_probes/wip/reference/install_download_intro.html

2. Installing the probe using the installation package.

The installation package contains the appropriate files for all supported versions of Netcool/OMNIBus. For details about how to install the probe to run with your version of Netcool/OMNIBus, visit the following page on the IBM Tivoli Knowledge Center:

http://www-01.ibm.com/support/knowledgecenter/SSSHTQ/omnibus/probes/all_probes/wip/reference/install_install_intro.html

3. Configuring the probe.

This guide contains details of the essential configuration required to run this probe. It combines topics that are common to all probes and topics that are peculiar to this probe. For details about additional configuration that is common to all probes, see the *IBM Tivoli Netcool/OMNIBus Probe and Gateway Guide*.

Internationalization support

The probe supports multibyte character sets (for example, Japanese) and character sets that contain individual multibyte characters (for example German, French, and Spanish). To view the character sets correctly, you must configure the locale settings on the host machine correctly.

If you are using a language that contains multibyte characters, you must set the LANG environment variables to the name of your character set, and export the LC_ALL environment variable. For example, if you are using Japanese, set these environment variables to ja_JP.UTF-8; if you are using German, set these environment variables to de_DE.UTF-8. This will enable the probe to recognise the multibyte characters used by your character set when they occur in any network events.

The probe supports the following language locales:

Table 3. Supported language locales				
Languages	AIX	HP-UX	Solaris	Linux
English (US)	en_US	en_US	en_US	en_US
Simplified Chinese	zh_CN	zh_CN	zh_CN	zh_CN
Traditional Chinese	zh_TW	zh_TW.eucTW	Zh_TW.big5	zh_TW.big5
Czech	cs_CZ	cs_CZ	cs	cs_CZ
French (standard)	fr_FR	fr_FR	fr	fr_FR
German (standard)	de_DE	de_DE	de	de_DE
Hungarian	hu_HU	hu_HU	hu	hu_HU
Italian (standard)	it_IT	it_IT	it	it_IT
Japanese	ja_JP	ja_JP	ja	ja_JP
Korean	ko_KR	ko_KR	ko	ko_KR
Polish	pl_PL	pl_PL	pl	pl_PL
Portuguese (Brazilian)	pt_BR	pt_BR	pt	pt_BR
Russian	ru_RU	ru_RU	ru	ru_RU
Spanish	es_ES	es_ES	es	es_ES

Example multi-byte character set on Solaris

The following steps describe how to configure Solaris to use the Japanese character set:

1. Install the necessary components for Japanese on to the host machine using the Solaris CD.
2. Set the LANG and LC_ALL environment variables to ja_JP PCK. This uses SJIS encoding.

Note : You may have to set the LANG in the host machine's default settings file and reboot it to make the changes take effect.

3. Make sure that the file `$OMNIHOME/platform/arch/locales/locales.dat` has the following entry:

```
locale = ja_JP PCK, japanese, sjis
```

Where `ja_JP PCK` is the vendor locale, `japanese` is the Sybase language, and `sjis` is the Sybase character set.

Configuring the probe

After installing the probe, you need to make various configuration settings to suit your environment.

Before running the probe, you must ensure that the machine on which the probe is running is listed in the following Lucent configuration file:

```
/usr/dacscan/oam/config_data/cm/ccpm/ccpconfig
```

After adding the machine on which the probe is running to this configuration file, you must shut down and restart the TIM interface using the following commands in the order shown:

1. `/opt/tuxedo/bin/tmshutdown -s TIMIF`
2. `/opt/tuxedo/bin/tmshutdown -s NTNC`
3. `/opt/tuxedo/bin/tmboot -s NTNC`
4. `/opt/tuxedo/bin/tmboot -s TIMIF`

Data acquisition

Each probe uses a different method to acquire data. Which method the probe uses depends on the target system from which it receives data.

The Probe for Alcatel-Lucent ITM-SC acquires data from the XMC interface on the Alcatel-Lucent ITM-SC using the TCP/IP protocol. The data is parsed into Netcool/OMNIBus events and forwarded to the ObjectServer. The interface must be set up correctly by a qualified Lucent engineer for the probe to work with Alcatel-Lucent ITM-SC. The Alcatel-Lucent ITM-SC platform has the interface embedded, but it requires licensing and configuration.

Data acquisition is described in the following topics:

- [“Peer-to-peer failover functionality” on page 4](#)

Peer-to-peer failover functionality

The probe supports failover configurations where two probes run simultaneously. One probe acts as the master probe, sending events to the ObjectServer; the other acts as the slave probe on standby. If the master probe fails, the slave probe activates.

While the slave probe receives heartbeats from the master probe, it does not forward events to the ObjectServer. If the master probe shuts down, the slave probe stops receiving heartbeats from the master and any events it receives thereafter are forwarded to the ObjectServer on behalf of the master probe. When the master probe is running again, the slave probe continues to receive events, but no longer sends them to the ObjectServer.

Example property file settings for peer-to-peer failover

You set the peer-to-peer failover mode in the properties files of the master and slave probes. The settings differ for a master probe and slave probe.

Note : In the examples, make sure to use the full path for the property value. In other words replace `$OMNIHOME` with the full path. For example: `/opt/IBM/tivoli/netcool`.

The following example shows the peer-to-peer settings from the properties file of a master probe:

```

Server      : "NCOMS"
RulesFile   : "master_rules_file"
MessageLog  : "master_log_file"
PeerHost    : "slave_hostname"
PeerPort    : 6789 # [communication port between master and slave probe]
Mode        : "master"
PidFile     : "master_pid_file"

```

The following example shows the peer-to-peer settings from the properties file of the corresponding slave probe:

```

Server      : "NCOMS"
RulesFile   : "slave_rules_file"
MessageLog  : "slave_log_file"
PeerHost    : "master_hostname"
PeerPort    : 6789 # [communication port between master and slave probe]
Mode        : "slave"
PidFile     : "slave_pid_file"

```

Event data

When initialization is complete the Alcatel-Lucent ITM-SC Alcatel-Lucent ITM-SC starts to generate a log file of all alarms. When the Probe for Alcatel-Lucent ITM-SC successfully logs into the XMC interface on the Alcatel-Lucent ITM-SC host machine, a synchronization process starts and the content of the log file is sent to the XMC interface. This interface generates an alarm event for each alarm message received. The alarm events use the G2 format and are acquired by the Probe for Alcatel-Lucent ITM-SC. When synchronization is complete all the new messages are sent to the XMC interface and are then acquired by the Probe for Alcatel-Lucent ITM-SC.

The Alcatel-Lucent ITM-SC sends two types of messages to the XMC interface:

- Alarm messages
- Heartbeat messages

The following section describes the format of the alarm events that the XMC interface sends when these messages are received.

Note : After sending the alarm event the XMC interface does not provide an acknowledgement to the Alcatel-Lucent ITM-SC.

Lucent ITM-SC Alarm Messages

Alcatel-Lucent ITM-SC alarm messages are sent to the XMC interface under the following conditions:

- During the synchronization following a successful login by the Probe for Lucent ITM-SC
- When a new active alarm occurs
- When a clear operation on a previous alarm occurs

The XMC interface then generates alarm events. There are several different alarm events generated; this section contains examples for two of these. Other event headers are recognized according to the setting of the AlarmHeaders property. For more detailed descriptions of the following alarm events and their values, refer to your Lucent G2 documentation.

Alarm Example 1 - alarm-event

The following is an example alarm event:

```

alarm-event
tid <string>
portl <string>
porth <string>
status <char>
category <string>

```

```

cond_type <string>
time <long integer>
i2000_tid <string>
sa_status <char>
severity <char>
msp <char>
equip_id <char>
resync <char>
alarm_id <string>
<012><012><012>

```

The following table describes the format of this example alarm event.

Table 4. Example Alarm Event 1 Field Descriptions		
Field Name	Values	Description
tid	<i>string</i>	Name of Lucent ITM-SC in XMC.
portl	<i>string</i>	Port identifier. Maximum of 50 characters.
porth	<i>string</i>	Port identifier.
status	<i>char</i>	Alarm status.
category	<i>string</i>	Field category.
cond_type	<i>string</i>	Condition type of the alarm.
time	<i>long integer</i>	Field type integer for UNIX time.
i2000_tid	<i>string</i>	Lucent ITM-SC host name.
sa_status	<i>S N</i>	Service Affecting status.
severity	<i>P D I</i>	Alarm severity. Possible values are: P: Prompt D: Deferred I: Information These values are related to major, minor, and warning, respectively.
msp	<i>Y N</i>	Possible values are Yes (Y) and No (N).
equip_id	<i>char</i>	Equipment identifier. Maximum 50 characters.
resync	<i>char</i>	Alarm resynchronization. Possible values are Y or a space.
alarm_id	<i>string</i>	Field alarm identifier.

Alarm Example 2 - dcs-tevnt

The following is an example alarm event:

```
dcs_tevnt
tid <string>
model <string>
dcs_gen <string>
action <char>
status <char>
time <long integer>
i2000_tid <string>
orig_ems <string>
confirm <char>
<012><012><012>
```

The following table describes the format of this example alarm event.

Table 5. Example Alarm Event 2 Field Descriptions		
Field Name	Values	Description
tid	<i>string</i>	Name of Lucent ITM-SC in XMC.
model	<i>string</i>	Possible values are: WS_OLS80G_SE WS_OLS80G_DF WS_OLS80G_REPEATER
dcs_gen	<i>string</i>	Maximum of 12 characters.
action	<i>A U D R</i>	Alarm action.
status	<i>I O U D</i>	Alarm status.
time	<i>long integer</i>	Field type integer for UNIX time.
i2000_tid	<i>string</i>	Lucent ITM-SC host name.
orig_ems	<i>string</i>	Maximum of 20 characters.
confirm	<i>char</i>	Alarm confirmation.

Exclusions

The following alarms are not forwarded as alarm events from the XMC interface:

- Equipment alarms that cannot be related to (physical) ports (for example, power failure).
- Threshold Crossing Alerts whose reporting can be configured per port.
- Loss of communication between NM and managed entities.

Probe Operation

The probe receives alarms events from Alcatel-Lucent ITM-SC workstations using the XMC interface.

XMC Interface

The XMC interface is a software interface on Alcatel-Lucent ITM-SC workstations that allows communication with Netcool/OMNIbus. The XMC interface and the Probe for Alcatel-Lucent ITM-SC communicate through a TCP/IP connection.

The XMC interface provides for a unidirectional transfer of alarm data from the Alcatel-Lucent ITM-SC to the Probe for Alcatel-Lucent ITM-SC. When the probe logs in to the interface a session starts. All current active alarms in the Alcatel-Lucent ITM-SC are transferred to the probe by means of a synchronization procedure. Subsequent alarms are forwarded as they occur. Alarm and alarm-clears are supported.

A heartbeat message is sent by the Alcatel-Lucent ITM-SC to allow monitoring of the communication link. A session is terminated by (voluntarily or involuntarily) disconnection of the TCP/IP communication link.

Alarms are sent once, and are not re-transmitted. Re-transmission of alarms may occur because of synchronization after recovery from failure. Threshold Crossing Alert data (TCAs) are not forwarded through the XMC interface. The XMC interface provides no mechanisms to acknowledge alarms.

XMC Operational States

The Probe for Alcatel-Lucent ITM-SC operates in the following states:

- Login
- Initialization
- Normal

The following sections describe the process sequence of the probe through each of the states. When the probe starts, it reads the rules and properties files, and then enters the Login state.

Login State

For security reasons, access to Alcatel-Lucent ITM-SC is protected by a login process. Alcatel-Lucent ITM-SC sends a denial message and drops the connection if the login process fails. The following section describes the login protocol.

Lucent ITM-SC Login

The Probe for Alcatel-Lucent ITM-SC initiates the communication to Alcatel-Lucent ITM-SC by setting up the TCP/IP connection and sending out a login request message.

The format of the Alcatel-Lucent ITM-SC login message is:

```
logreq
i2000_tid <string>
dscan_tid <string>
dscan_version <string>
msgno <string>
<012><012><012>
```

The following table describes the login request fields and corresponding values.

Table 6. Lucent ITM-SC Login Request and Response Fields		
Field Name	Values	Description
i2000_tid	<i>string</i>	Lucent ITM-SC hostname.
dscan_tid	<i>string</i>	Identifier.
dscan_version	<i>string</i>	Version.
msgno	<i>long integer</i>	Message number.

Table 6. Lucent ITM-SC Login Request and Response Fields (continued)		
Field Name	Values	Description
i2000_version	<i>string</i>	Lucent ITM-SC version.
time	<i>long integer</i>	Time.
stat	<i>C D S</i>	Status. Possible values are: C: Login completed D: Login denied S: Login suspended
errcode	<i>string</i>	Error code.

The Alcatel-Lucent ITM-SC responds with a login response message. The format of the response is:

```
logrsp
i2000_tid <string>
dscan_tid <string>
i2000_version <string>
dscan_version <C | D | S>
time <string>
msgno <>
stat <>
errcode <>
<012><012><012>
```

Communication is terminated by disconnecting the TCP/IP communication link. A new session may be started by the client by re-establishing the TCP/IP connection and completing a login procedure.

On successful completion of the Login state, the probe proceeds to the Initialization state.

Lucent ITM-SC Resynchronization State

After a successful login the Alcatel-Lucent ITM-SC sends all active network events across the XMC interface. The Alcatel-Lucent ITM-SC sends the network events that are active at the time the start resynchronization message is sent to the probe.

The start resynchronization message has the following format:

```
resync_event
ne_tid <string>
resync_type <D | F>
phase <string>
msgno <long integer>
<012><012><012>
```

The following table describes the start resynchronization message fields and corresponding values.

Table 7. Lucent ITM-SC Start and End Resynchronization Fields		
Field Name	Values	Description
ne_tid	<i>string</i>	Network element identifier.
resync_type	<i>D F</i>	Type of resynchronization.
phase	<i>string</i>	Event phase.
msgno	<i>long integer</i>	Message number.

Table 7. Lucent ITM-SC Start and End Resynchronization Fields (continued)

Field Name	Values	Description
i2000_tid	<i>string</i>	Lucent ITM-SC identifier.
time	<i>long integer</i>	Time.
stat	<i>C D S</i>	Status. Possible values are: C: Login completed D: Login denied S: Login suspended
errcode	<i>string</i>	Error code.

If new alarms occur when the resynchronization procedure is in progress, those alarms are notified after the resynchronization process is completed.

On successful completion of the Resynchronization state, the probe proceeds to the Normal state.

Normal State (Alarm Monitoring)

The Normal state is the standard operating state of the probe. All new events generated by the Alcatel-Lucent ITM-SC are monitored by the probe and forwarded as alerts to the ObjectServer.

Once all of the synchronization events have been sent, the Alcatel-Lucent ITM-SC starts to send network events and heartbeat messages to indicate the current status of the managed network.

Alerts are sent to the ObjectServer for events that indicate alarms being raised, cleared or acknowledged.

Loss of Connection Between the Probe and Lucent ITM-SC

If the Alcatel-Lucent ITM-SC or the LAN develops a fault, the socket connection between Alcatel-Lucent ITM-SC and the Probe for Alcatel-Lucent ITM-SC is lost.

If no events have been received, including the heartbeat events, within the period set by the property **G2IdleHeartbeatTimeout**, the Probe for Alcatel-Lucent ITM-SC assumes the socket connection has been lost. The probe sends the ProbeWatch message *We've been idle for xx seconds* (where xx is the defined timeout period).

After the **G2IdleHeartbeatTimeout** period has elapsed the probe checks the property **G2RestartOnIdleTimeout**. If this property is set to 0, the probe restarts the timeout period. If it is set to 1, the probe disconnects from the Alcatel-Lucent ITM-SC.

Reconnection Between the Probe and the Lucent ITM-SC

After the **G2RestartOnIdleTimeout** property has caused the probe to disconnect from the Alcatel-Lucent ITM-SC machine, the probe checks the **G2ReconnectTimeout** property. If this property has been set to a time period greater than 0, the probe waits for this period and then restarts itself. During the restart the probe tries to establish a new connection to the Alcatel-Lucent ITM-SC machine. As the probe is restarted the ProbeWatch message *Restarting idle connection* is sent. When the connection has been made, the Probe for Alcatel-Lucent ITM-SC logs in and receives all of the current network events from the Alcatel-Lucent ITM-SC machine. Each event received by the Probe for Alcatel-Lucent ITM-SC during the initialization process is sent to the ObjectServer to re-synchronize the event list.

Properties and command line options

You use properties to specify how the probe interacts with the device. You can override the default values by using the properties file or the command line options.

The following table describes the properties and command line options specific to this probe. For information about default properties and command line options, see the *IBM Tivoli Netcool/OMNIBus Probe and Gateway Guide*, (SC14-7530).

Table 8. Properties and command line options		
Property name	Command line option	Description
AlarmHeaders <i>string</i>	-alarmheaders <i>string</i>	Use this property to indicate the header of an event. The default is login_event\n alarm_event\n port_event\n ndcs_tevnt\n.
G2IdleHeartbeat <i>integer</i>	-g2idleheartbeat <i>integer</i>	Use this property to set the time (in seconds) the probe allows the system to be idle before a ProbeWatch message is sent to the ObjectServer. The default is 0 (probe does not send idle ProbeWatch messages).
G2ReconnectTimeout <i>integer</i>	-g2reconnecttimeout <i>integer</i>	Use this property to set the time (in seconds) the probe waits before trying to reconnect to the system. The default is 0 (probe does not attempt to reconnect to the system).
G2RestartOnIdleTimeout <i>integer</i>	-g2norestartonidle timeout <i>integer</i> (equivalent to G2RestartOnIdleTimeout with a value of 0). -g2restartonidle timeout (equivalent to G2RestartOnIdleTimeout with a value of 1)	Use this property to specify whether the probe disconnects from the device after an idle timeout. 0: The probe disconnects. 1: The probe sends a ProbeWatch message and restarts the idle timer. The default is 0.
Host <i>string</i>	-host <i>string</i>	Use this property to specify the host to which the probe connects. The default is localhost.
ITM_CommandKey <i>string</i>	-itm_commandkey <i>string</i>	Use this property to specify the Lucent ITM-SC command key for the login request (Login Request Field 4). The default is 1000.

Table 8. Properties and command line options (continued)

Property name	Command line option	Description
ITM_EMSTargetID <i>string</i>	<code>-itm_emstargetid string</code>	Use this property to specify the Lucent ITM-SC target identifier of the NMS (Login Request Field 2). The default is "".
ITM_NMSVersion Number <i>string</i>	<code>-itm_nmsversionnumber string</code>	Use this property to specify the Lucent ITM-SC NMS version number (Login Request Field 3). The default is 2.5.
LineFormat <i>string</i>	<code>-lineformat string</code>	Use this property to format each line of the event. The default is <code>\t%f\t%v\n</code> . Note : <code>%f</code> indicates a field; <code>%v</code> indicates a field value.
MessageTerminator <i>string</i>	<code>-messageterminator string</code>	A regular expression used to indicates the end of the message. The default is <code>\n\n</code> .
OutputTerminator <i>string</i>	<code>-outputterminator string</code>	A regular expression added by the probe to outgoing G2 messages to indicate the end of the message. The default is <code>\n\n</code> .
Port <i>integer</i>	<code>-port integer</code>	Use this property to specify the port to which the probe connects. The default is 9057.
Resync <i>integer</i>	<code>-resync integer</code>	Use this property to specify whether the probe sends a resynchronization message. 0: The probe does not send a resynchronization message. 1: The probe sends a resynchronization message. The default is 1. Note : If you set this property to 1, you must specify the resynchronization details using the <code>ResyncMsgno</code> , <code>ResyncPhase</code> and <code>ResyncType</code> properties.

Table 8. Properties and command line options (continued)		
Property name	Command line option	Description
ResyncMsgno <i>string</i>	-resyncmsgno <i>string</i>	Use this property to specify the Command key for the resynchronization request. The default is 1001.
ResyncPhase <i>string</i>	-resyncphase <i>string</i>	Use this property to specify resynchronization phase. The default is S (start).
ResyncType <i>string</i>	-resynctype <i>string</i>	Use this property to specify resynchronization type. The default is A (all).
StreamCapture <i>integer</i>	-streamcapture <i>integer</i>	Use this property to specify whether the probe captures all raw data sent from the device: 0: The stream capture is disabled. 1: The stream capture is enabled. The default is 0. Note : If you set this property to 1, you must specify the file to store the data using the StreamCaptureFilename property.
StreamCaptureFilename <i>string</i>	-streamcapturefilename <i>string</i>	Use this property to specify the file the probe uses to store the input stream log. The default is \$OMNIHOME/var/lucent_g2itm_sc.Stream. This property is required if you set the StreamCapture property to 1.

Elements

The probe breaks event data down into tokens and parses them into elements. Elements are used to assign values to ObjectServer fields; the field values contain the event details in a form that the ObjectServer understands.

The following table describes the elements that the Probe for Alcatel-Lucent ITM-SC generates. Not all the elements described are generated for each event; the elements that the probe generates depends upon the event type.

Table 9. Elements	
Element name	Element description
\$alarm_state	This element contains possible alarm states.

Table 9. Elements (continued)	
Element name	Element description
\$alarmtype	This element displays the type of PBA or threshold alarm.
\$ckts_XX	This element displays the name of the circuit in the NPC if the event is an NPC alarm. This element is repeated for each circuit in the alarming NPC. Value XX is 00 for the first circuit and is incremented for each following circuit.
\$condtype	This element displays the condition type.
\$dacsmsgno	This element displays the DACS output message number.
\$eqid	This element displays the number of the failed card.
\$eqtype	This element displays the type of equipment.
\$npc_id	This element displays the name of the NPC if it's an NPC alarm.
\$summary	This element displays the DACS summary message.
\$time	This element displays the UNIX time.

Error messages

Error messages provide information about problems that occur while running the probe. You can use the information that they contain to resolve such problems.

The following table describes the error messages specific to this probe. For information about generic error messages, see the *IBM Tivoli Netcool/OMNIBus Probe and Gateway Guide*, (SC14-7530).

Table 10. Error messages

Error	Description	Action
Failed to set Element \$ElementName: <i>reason</i> Cannot create alive timeout Cannot create idle timeout Failed to setup signals Failed to initialize heartbeat Failed to initialize Failed to define argument: <i>argument_name</i> Failed to initialize arguments	These are internal errors.	Refer to your support contract for information about contacting Technical Support.
Failed to set FirstOccurrence: <i>reason</i>	The probe is unable to set the first occurrence field.	Ensure that this field exists in the ObjectServer table.
Failed to read message, incorrect header.	The message header from the device does not match that specified in the properties.	Ensure that the AlarmHeaders and the MessageTerminator properties are set correctly.
Failed to allocate time stamp string: <i>string</i> Failed to create logreq message Failed to create logrsp message Failed to send login request Cannot create g2 message structure	The probe is unable to perform the specified operation because of memory problems.	Make more memory available.
Could not login: <i>reason</i> Failed to initialize TIM connection	The probe was unable to log in to the XMC interface. This message is generally preceded by more specific error messages.	Check any preceding messages. Also, check that the username and password refer to a valid user account.
SetEventTimes() failed: <i>reason</i>	The probe was unable to set the FirstOccurrence and LastOccurrence fields.	Check that the FirstOccurrence and LastOccurrence fields exist in the ObjectServer tables.
Unexpected EOF. Connection lost.	The connection to the remote system has been lost.	Check the network connection and the remote system.

Table 10. Error messages (continued)

Error	Description	Action
Cannot create retry timer. Continuing without retries.	The probe is unable to create a retry timer. This message is generally preceded by more specific error messages.	Check any preceding messages.
Failed to read property: <i>propertyname</i>	The probe was unable to start because the property indicated contains an incorrect value.	Check that you have set the properties and command line options correctly.
Failed to get correct login response Failed to read logrsp	The server did not respond.	Check the network connection and the remote system.
Failed to get correct login response Unknown logrsp	The server did not respond as expected.	Check that the AlarmHeaders property is set correctly.

Appendix A. Notices and Trademarks

This appendix contains the following sections:

- Notices
- Trademarks

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing 2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
Software Interoperability Coordinator, Department 49XA

3605 Highway 52 N
Rochester, MN 55901
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

© (your company name) (year). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. _enter the year or years_. All rights reserved.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks

IBM, the IBM logo, ibm.com, AIX, Tivoli, zSeries, and Netcool are trademarks of International Business Machines Corporation in the United States, other countries, or both.

Adobe, Acrobat, Portable Document Format (PDF), PostScript, and all Adobe-based trademarks are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, other countries, or both.

Intel, Intel Inside (logos), MMX, and Pentium are trademarks of Intel Corporation in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, or service names may be trademarks or service marks of others.



SC23-7877-03

