

# Kofax Communication Server

## TC Probe Agent Technical Manual

Version: 10.2.0



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# 1. About TC Probe Agent

The TC Probe Agent monitors end to end availability of the Kofax Communication Server messaging environment. Its task is to send periodic probe messages and to check whether they arrive at their destination within a guaranteed time.

The results of the probes are stored in the TC/Report database and can be displayed in 2 reports. For alerting and monitoring, additional result handling can be configured: event log entries (converted to SNMP traps by TCSNMP), alert messages to an administrator.

The xSP administrator configures which probes are sent. Theoretically, an unlimited number of different probes can be configured. Nevertheless, they should not disturb the service that is given to the end-customer.

For every periodic probe, you can configure the path it should take, the message content, schedule and timeout, and the actions that shall be taken for positive and negative results. Periodic probes can be deactivated if they are not needed currently.

It is also possible to send a probe message on demand, e.g. when investigating a problem reported by the end-customer. Additionally, services like TC/LINK will be able to trigger a single probe message as a reaction to errors or when there was no message flow for a certain amount of time. For the first version, only TC/LINK triggers single probes.

An automatic retry of failed probe messages can be configured. This is useful for reporting the duration of unavailability, a special report (TCPROBED) uses this feature. At a given point in time, only 1 retry chain per probe type is active (i.e. only the first failed probe message within the interval of unavailability is retried). Nevertheless, periodic probe messages are still sent while a retry is active.

The messages themselves shall not create costs for the end-customer. Therefore, it is possible to configure the cost center used for sending.

Probe-related notifications and replies will show up in the KCS short term archive. This cannot be disabled currently. Nevertheless, you can configure TC/Archive to ignore probe-related send orders. See section 8.9 for details.

**Important! The Kofax Communication Server and its components formerly used the name TOPCALL. Some screen shots and texts in this manual may still use the former name.**

## 2. Overview

### 2.1 Monitored Message Path

In this context, a probe is a message that is created by the Probe Agent and is sent to one or more destinations.

As a result of message transmission, the Probe Agent receives a notification. Additionally, the destination may return a reply. This may be a real automatic reply, as is possible in mail systems like MS Exchange, a faked reply created by TCLINK.EXE, or the original message – sent in a loop from one fax or telex channel to another one, or to the SMS address of the Probe Agent user.

The agent waits until the notification and (if configured) the reply has been received, and then sends the message to the next destination.

Depending on the requirements of the customer and the possibilities offered by the system components (e.g. remote mail servers), probe messages can cover either only the KCS environment (e.g. between TC/LINK and the fax channel) or the complete system (by integrating auto-reply agents in the remote mail system and using the external telephone network for fax and telex loops).

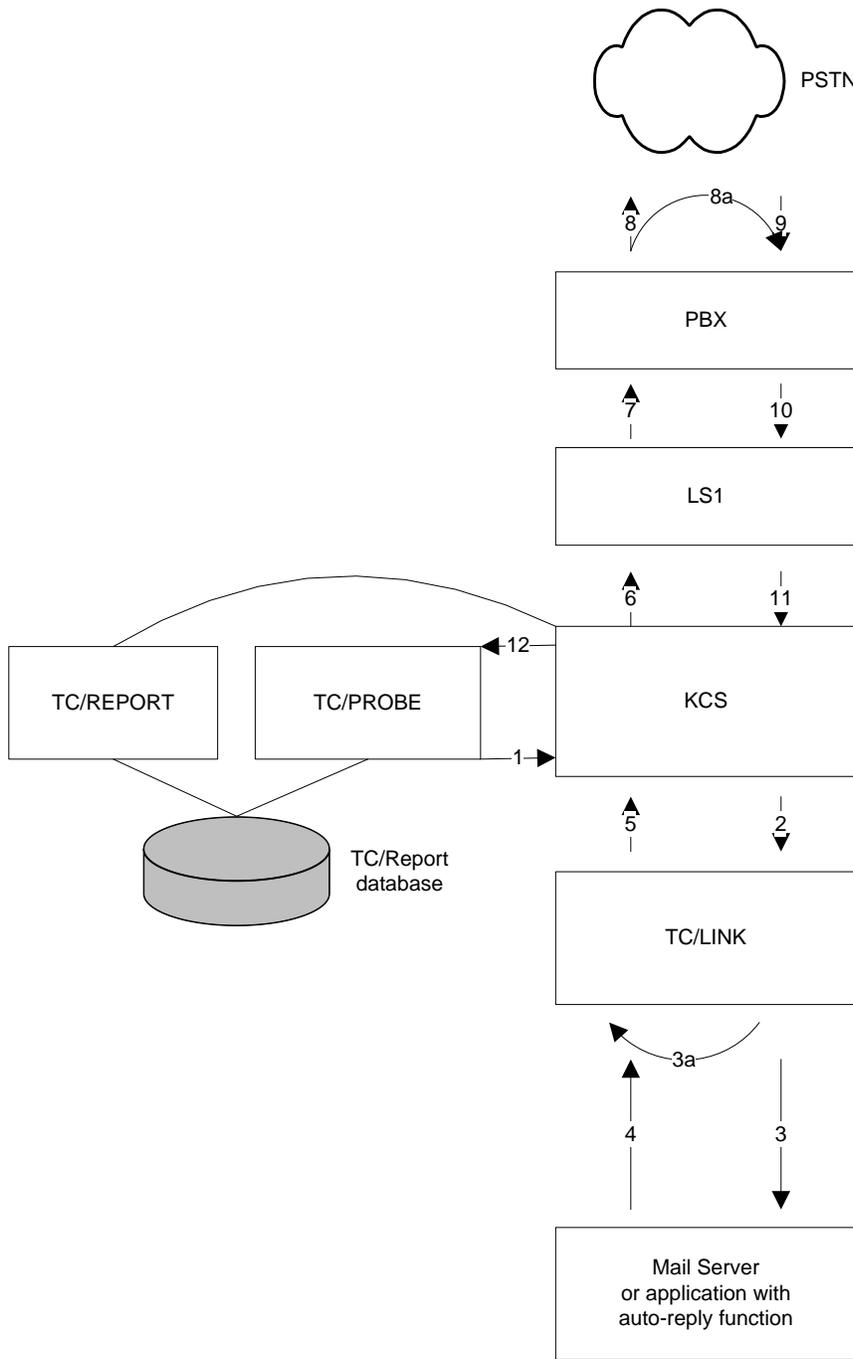
It is even possible to configure a probe that uses a defined TC/LINK instance out of several parallel instances.

#### **Testing the complete system:**

A configuration description is provided for enabling auto-replies in MS Exchange. Other platforms (SAP, Lotus Notes) are also supported.

#### **Testing only the KCS environment:**

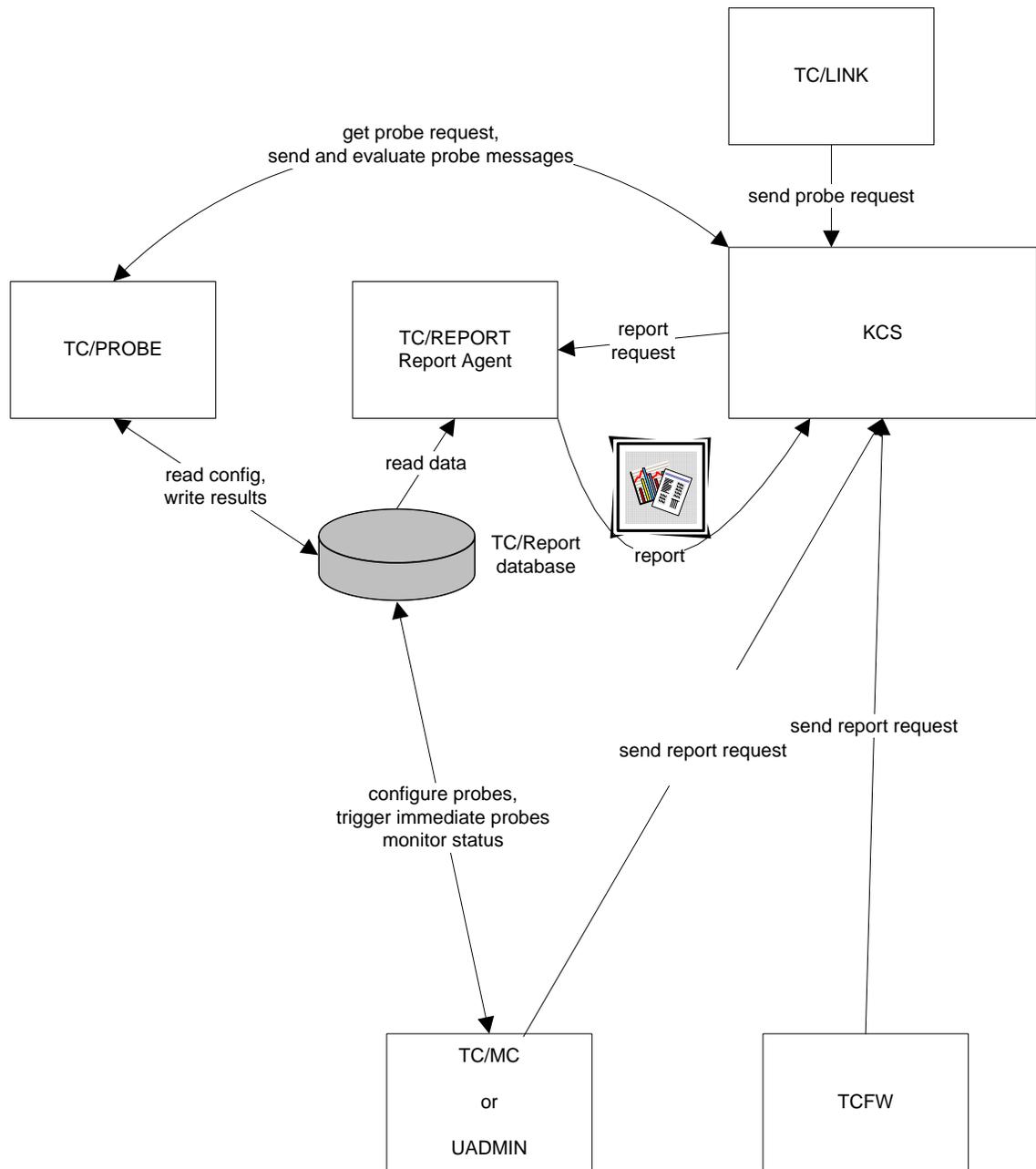
For a simple test of TCLINK availability (without using the mail system), it is possible to force TC/LINK to return an automatic reply to the probe message.



**Sample probe message path:**

- 1) TC/Probe triggers probe message
- 2) Message sent to link queue
- 3) Message forwarded to remote mail system (optional)
- 4) Automatic reply from remote mail system (optional)
- 3a) Alternative path: TCLINK creates automatic reply
- 5) Reply posted to KCS
- 6) Reply sent to line server
- 7) Fax sent to PBX
- 8) Fax sent via PSTN (optional)
- 9) Fax received from PSTN (optional)
- 8a) Alternative path: Fax sent within PBX
- 10) Incoming fax received by line server
- 11) fax routed to TC/Probe mailbox
- 12) TC/Probe recognises end of probe cycle.

## 2.2 Interaction with Other Applications



The Probe Agent runs as a Windows service and has no user interface. There can be multiple instances, for failover and better throughput.

The agent reads configuration information from a database (typically: the TC/Report database), and stores its actions to this database.

TCLINK triggers immediate probe messages by sending a message to the probe agent's KCS user profile.

The KCS Management Console triggers immediate probe messages by writing directly into the database.

## 2.3 Components

This product consists of:

- The KCS Probe Agent
- An add-in to the KCS Management Console (for configuration and status display)
- 2 reports delivered with the KCS Report Agent

### 3. Database Changes

In typical installations, TC/PROBE and TC/REPORT share the same database. It is nevertheless also possible to install TC/PROBE with a dedicated database, not integrated with TC/REPORT.

Tables created with KCS Setup versions prior to 9.2 hold varchar columns instead of nvarchar.

TC/PROBE Setup creates the following database objects:

The **Server\_Table** holds login credentials for the Probing Agent:

Field Name	SQL Datatype	DB INFO	Description
ProbeUser_ID	NVarchar (128)	Default: TCPROBE	KCS user ID for Probe Agent
ProbeUser_Password	NVarchar (128)		Password (encrypted)
ProbeAgent_Group	NVarchar(30)		Assigns this server to a dedicated (group of) agent(s)

The definition of probe messages is stored in the tables **ProbeDefinition\_Table** and **ProbeEndpoint\_Table**.

The **ProbeDefinition\_Table** contains the following fields:

Field Name	SQL Datatype	DB INFO	Description
PD_ID	Varchar(11)		Unique ID, primary key
PD_NAME	NVarchar(40)	Not null	Descriptive name
PD_DESCRIPTION	NVarchar(512)		Longer description
PD_SERVER_ID	NVarchar(30)	Not null	KCS instance. Foreign key, matches entry in Server_Table
PD_SCHEDULE	Int	Not null	Schedule (Interval between probes, in minutes)
PD_TIMEOUT	Int	Not null	Timeout (Maximum time for single probe, in minutes)
PD_ALERT_MESSAGE_SUCCESS	NVarchar(128)		If not empty, an alert message is sent to this address via TCOSS when the probe definition status changes to Okay.
PD_ALERT_MESSAGE_ERROR	NVarchar(128)		If not empty, an alert message is sent to this address via TCOSS when the probe definition status changes to Failed.
PD_ALERT_EVENT_SUCCESS	Bit	Default: 0	If 1, an event log entry is written whenever the probe succeeds If 0, an event log entry is written when the probe definition status changes to Okay.
PD_ALERT_EVENT_ERROR	Bit	Default: 1	If 1, an event log entry is written whenever a probe fails (exception: retries). If 0, an event log entry is written when the probe definition status changes to Failed.
PD_TEMPORARY	Bit		Reserved for future use
PD_TEMPLATE	NVarchar(12)		Template name
PD_RETRY_FAILED	Bit	Default 0	1: Failed probes are retried until they succeed
PD_ACTIVE	Bit	Default 0	1: periodic probe messages are created, 0: no periodic messages (single triggered probes still possible)
PD_ESTIMATED_TIME	Int		Estimated duration (minutes)
PD_CALENDAR	Varchar(100)		Can be used to restrict periodic probes to a certain daily interval (e.g. during working hours). Syntax is described below.
PD_COSTCENTER	NVarchar(12)		Cost center for the probes

The **ProbeEndpoint\_Table** holds information about individual destination addresses.

Field Name	SQL Datatype	DB INFO	Description
PE_ID	Varchar(11)	NOT NULL	Unique ID, primary key
PE_SERVER_ID	NVarchar(30)	NOT NULL	Server ID
PE_NAME	NVarchar(30)		Descriptive name
PE_SERVICE	NVarchar(32)	NOT NULL	KCS service
PE_NUMBER	NVarchar(128)	NOT NULL	KCS address
PE_FULLNAME	NVarchar(80)		Full name
PE_SENDS_DE LNF	Bit	Default: 1	1 if the destination can return a delivery notification
PE_SENDS_RE PLY	Bit	Default:1	1 if the destination can return an automatic reply

The **ProbeDefTarget\_Table** maps destination addresses to probe definitions.

Field Name	SQL Datatype	DB INFO	Description
PT_PD_ID	Varchar(11)	NOT NULL	Probe definition ID
PT_PE_ID	Varchar(11)	NOT NULL	Probe endpoint ID
PT_INDEX	Int	NOT NULL	Position of probe endpoint in the list of destinations for the probe. Unique per probe definition. 1...n

The **DueProbe\_Table** is used internally by the Probing Agent. It holds one record for every probe definition. The information in this record helps the agent to find out if a probe must be created right now.

Field Name	SQL Datatype	DB INFO	Description
DP_ID	Varchar(11)	NOT NULL	Probe definition ID
DP_LAST_REG ULAR	Datetime		Start time of last periodic probe
DP_ONEOFF	Bit	Default 0	1 if immediate single probe was triggered
DP_RETRIED_T IME	DateTime		During a retry: start of first failed probe. Otherwise: NULL.
DP_TIMESTAM P	Timestamp		Used internally for record locking
DP_STATUS	Int		Status of last probe: 100 = OK 200 = Error
DP_STATUS_TI ME	Datetime		Date and time of last update of DP_STATUS

The Probing Agent stores information about individual probe messages that were sent in the tables **Probe\_Table** and **ProbeHistory\_Table**.

The **Probe\_Table** contains one record for every time a probe was performed. To allow creation of reports even after modification of the probe definition, this table is not fully normalized, but contains redundant information (Server ID)

Field Name	SQL Datatype	DB INFO	Description
P_ID	Varchar(11)	NOT NULL	Unique ID, primary key
P_DEFINITION	Varchar(11)	NOT NULL	Probe definition ID
P_DEFINITION_NAME	NVarchar(40)		Probe definition short name
P_SERVER_ID	NVarchar (30)	NOT NULL	Server ID
P_STATE	Int	NOT NULL	Current status, possible values described below
P_STATE_DESCR	NVarchar (80)		Status description (description of last event, see ProbeHistory_Table)
P_TIME_STARTED	DateTime		Probe start time
P_TIME_EXPIRED	DateTime		Probe expiry time
P_TIME_LASTSENT	DateTime		Time when message was sent to current destination, used internally for calculation of net duration and timeout
P_TIME_ORIG_STARTED	DateTime		For probe retries: original start time
P_NET_DURATION	Int		Net duration in seconds (without Probing Agent overhead)
P_REGULAR	Bit		1 if regular probe
P_CURR_DEST	Int		Current position in list of destinations for this probe
P_TIMESTAMP	Timestamp		Used internally for record locking

Possible values for P\_STATE:

Value	Description
1	Ready for sending
2	Ready for send retry
3	Successfully sent
4	Delivery notification received
5	Reply received
50	Selected for probe start (intermediate state)
100	Finished with success
200	Finished with error

The **ProbeHistory\_Table** contains detailed information about the events that were encountered for single probe messages, e.g.:

successful / unsuccessful attempt to send a message  
 receipt of a notification (delivery, non-delivery)  
 receipt of a reply

Field Name	SQL Datatype	DB INFO	Description
PH_PROBE_ID	Varchar(11)	NOT NULL	Probe ID
PH_EVENT	Int	NOT NULL	Event (list of possible values see below)
PH_DATE	DateTime	NOT NULL	Event date and time
PH_DESCRIPTION	NVarchar(80)		Event description
PH_DEST	Int	NOT NULL	Position in list of destinations for this probe

Possible values for PH\_EVENT:

Value	Description
1	Error sending
2	Successfully sent
3	Timeout
4	Delivery notification
5	Non-delivery notification
6	Reply received

The table **ID\_Table** is used for creating unique IDs for all other tables. This table is used by the Probing Agent and by the TCMC configuration panels.

The IDs consist of a prefix that defines the table and a numeric part. The numeric part can have up to 9 digits.

The table holds 1 record for each ID type, storing the highest ID that is currently allocated.

For instance, e.g. *P000000893* is a possible value in the P\_ID field of the **Probe\_Table**, and *PD000000009* is a possible value in the PD\_ID field of the **ProbeDefinition\_Table**.

Field Name	SQL Datatype	DB INFO	Description
I_ID	Decimal(9)	NOT NULL	Numeric part
I_PREFIX	Varchar(2)	NOT NULL, UNIQUE	Prefix
I_TIMESTAMP	Timestamp		Timestamp for record locking

#### **Backup databases:**

The relevant information from the new tables Probe\_Table and ProbeHistory\_Table is also copied to the backup databases.

#### **Automatic deletion of oldest records:**

The relevant information from the new tables Probe\_Table and ProbeHistory\_Table is also deleted when the oldest 10 % send orders are removed from the database.

## 4. KCS Probe Agent

The Probe Agent is a process started by TCSR.V. It can be installed on any supported computer, for example on a TCOSS server, link server, voice server or another computer.

Information about supported operating systems and other Kofax Communication Server requirements is available on the Kofax Support Web pages at [www.kofax.com](http://www.kofax.com).

For database access, the Agent uses Microsoft ADO. This software is part of the operating system.

A single instance of the Probing Agent is connected to 1 database and serves 1 or more TCOSS instances.

On every TCOSS instance, the Probing Agent is logged in as a defined user (default TCPROBE). This user is a queue user. This is essential, because this user is the originator of probe messages and receives notifications and automatic replies.

### 4.1 Main Actions Done by the Probing Agent

The Probing Agent performs the following 4 actions continuously in a loop. The Probing Agent stops only if a severe error is encountered or if terminated by TCSR.V.

#### 1. Check if it is time for a probe message.

This check is done by consulting the tables **DueProbe\_Table** (fields *DP\_LAST\_REGULAR* and *DP\_ONEOFF*) and **ProbeDefinition\_Table** (fields *PD\_SCHEDULE* and *PD\_CALENDAR*).

If a probe is due, a new record with a unique probe ID is created in the **Probe\_Table** and is marked as ready for sending (*P\_STATE* field).

The **DueProbe\_Table** is updated: For regular probe messages, the *DP\_LAST\_REGULAR* field is set to the current date and time. For single probe messages, the field *DP\_ONEOFF* is cleared.

#### 2. Send probe message.

The agent looks for entries in the **Probe\_Table** whose status (*P\_STATE*) is “ready for sending” or “ready for send retry”. The agent creates the message and posts it to TCOSS. The unique probe ID is transmitted as part of the message, so that it is returned in notifications and automatic replies.

To work with notifications and replies from various destinations, the probe ID is stored in the following message components:

- \* In the originator address:  
the address is returned with notifications and with replies from most link types
- \* The first text block starts with the line “++TSI “ followed by the probe ID.

Thus, it is returned as the TSI of a fax sent to another fax channel on the Kofax Communication Server (fax loop). Additionally, it is part of the text of a telex sent to another telex channel on the Kofax Communication Server (telex loop), and of an SMS sent via TC/LINK (SMS loop).

After sending, the Agent modifies several fields in the **Probe\_Table** and writes a history record to the **ProbeHistory\_Table**.

### 3. Poll the TCOSS instances for probe-related messages.

The Probing Agent checks its queue for the following message types: probe requests, notifications for probe messages and automatic replies to probe messages.

When receiving a probe request, the agent writes the current time to the field *DP\_LAST\_REGULAR* in the **DueProbe\_Table**.

When receiving a notifications or a reply, a history record is written to the **ProbeHistory\_Table** and the current status of the probe is updated in the **Probe\_Table**.

### 4. Check if a probe message timed out.

The agent looks for open **Probe\_Table** entries where the expiry date is reached. These entries are marked as failed.

## 4.2 Probe Message Details

### Originator:

The originator address contains the Probing Agent queue and the probe ID

### Recipient:

The recipient is the current destination address.

### Send options:

Delivery and non-delivery notifications are requested always.

A latest delivery timeout is set, this timeout is specified in relative syntax and takes into account the configured maximum turnaround time for the probe and the time that was already used (e.g. for sending to the first destination).

The cost center configured for the Probe Agent user is used for sending.

### Message content:

The message starts with a text block containing the ++TSI command that sets the fax TSI to the probe ID. If no template is specified in the probe definition, this line is followed by a short text (from the Probe Agent configuration).

If a message template name is specified in the probe definition, the Agent tries to find this template in its message store on KCS. The Agent then uses the coversheet defined for this template, and appends all components from the template's message body to the probe message.

## 4.3 Error Handling

### Probe timeouts:

The timeout starts when the Probe Agent tries to post the message to the first destination address. This means that the delay between scheduled time and real send time does not count for the timeout.

Only the net message transfer times count for the timeout, i.e. from posting a message to KCS until the reply arrives in the TCPROBE queue. Time used internally by the Probe Agent (e.g. for polling other servers) does not affect the timeout.

This means that for probes with several destinations, the probe expiry time is recalculated several times.

### Single send errors:

If a probe message cannot be posted to KCS after 2 attempts, the probe fails.

### Loss of connection to KCS:

If there is no connection to KCS for some time, all probe messages scheduled for this time will fail.

No alert messages can be sent either.

A special event log message is written when the connection is lost and when it is regained.

### Loss of connection to database:

If the database connection is not available at startup, the Probe Agent shuts down and writes an error to the application event log.

If the connection to the SQL database fails during operation, a configured number of connection retries is done. If this is not successful, the Probe Agent goes to idle mode and attempts to connect to the database in every poll cycle.

Special event log entries are written when the Probe Agent enters and leaves the idle mode.

### Inactivity timeout:

Like TC/LINK, TC/Probe has an inactivity timeout. If TC/Probe does not perform any actions for more than the configured time (default: 10 min), it reports a severe error to TCSRVR and is subsequently restarted.

## 4.4 Alert Messages

Alert messages are sent whenever the probe status changes, e.g. at the first failure after a series of successful probes, and at the first success after a series of failed probes.

The layout of the alert messages is configurable via template messages stored in the Probe Agent's message folder. There are two templates, one for success, and one for failure alerts.

The template text can contain variables in the syntax `$VariableName$`.

When creating an alert message, the Probe Agent takes the template text, replaces the variables with information from the probe, and copies the result into the alert message.

The alert subject cannot contain variables. The subject from the template is used.

Possible variables:

Variable name	Description
\$Id\$	Probe ID
\$DefId\$	Probe Definition ID
\$DefName\$	Probe Definition Name
\$OneOff\$	Replaced with YES if this was an extra (triggered) probe, otherwise replaced with NO
\$ToService\$	Service of current destination address
\$ToNumber\$	Number of current destination address
\$ToName\$	Full name of current destination
\$Server\$	TCOSS server/instance name
\$Comment\$	Description (field P_STATE_DESCR)
\$Result\$	Replaced with SUCCESS or ERROR
\$TimeStarted\$	Probe start time in syntax YYYYMMDD hhmmss
\$TimeEvent\$	Probe end time in syntax YYYYMMDD hhmmss
\$Retry\$	Replaced with YES if this is a retry of another probe, else NO

Default templates:

The default alert templates are installed when the Probe Agent starts for the first time. They are called ALERTOK and ALERTERR and both have the following text:

```
Probe Result = $ Result$

Probe Definition Name = $DefName$
Probe ID = $Id$
Server = $Server$
Time = $TimeEvent$

Last send attempt to:
Name = $ToName$
Service = $ToService$
Number = $ToNumber$

Description = $Comment$

Extra probe = $OneOff$
```

## 4.5 Events

The Probe Agent creates the following events for the application event log:

Event ID	Type	Text	Description
25508	Warning	No connection to TCOSS instance %1 (%2)	Connection to a TCOSS instance is lost.
25509	Information	Connected to TCOSS instance %1	Connection to a TCOSS instance succeeded
25511	Information	Probe successfully sent: Server = %1, Probe = %2 (%3)	Probe message succeeded, parameters are server name, probe definition name and probe ID
25512	Information	Probe failed: Server = %1, Probe = %2 (%3)	Probe message failed, parameters are server name, probe definition name and probe ID
25515	Warning	Error sending alert message: recipient = %1, probe = %2, server = %3, error = %4	An alert message cannot be sent
25516	Error	No connection to SQL database	No connection to database (at start up)
25519	Information	TCProbe (%1) started	Process started
25520	Information	TCProbe (%1) stopped	Process stopped
25521	Warning	Connection to database lost. Entering idle mode.	Start of idle mode. During idle mode, no probe messages are sent and no notifications from KCS are processed.
25522	Information	Connection to database available again. Leaving idle mode.	End of idle mode.

If TC/SNMP is installed on the local computer, these events can be converted into SNMP traps.

## 4.6 Trace File

The amount of information written to the TC/Probe trace file is steered by the configured trace level. Registry value TraceLevel is a bit field.

Bit	Meaning
0x80	Trace function calls
0x100	Trace TCSI objects (messages sent and received)
0x200	Trace SQL statements (stored procedure calls)

Errors and events are always written to the trace file.

## 4.7 Time Zone Handling

All probe-specific time stamps in the database are in UTC time.

In the GUI (configuration and monitoring panels), time stamps are displayed as local time.

## 4.8 Parallel Operation

Multiple instances of the Probe Agent can run in parallel, either on the same workstation or on different workstations.

The performance of a particular probe message can thus be monitored by several instances of the agent, so that e.g. one instance sends the message and another one processes the notification for it.

In a multi-instance scenario, duplicate actions are avoided via standard TCOSS message locking and by optimistic record locking via timestamp fields in the SQL tables.

For better performance, it is possible to define several Probe Agent groups, where every group serves a dedicated set of TCOSS instances. The agent's local configuration holds the information to which group the agent belongs. Field *ProbeAgent\_Group* in the **Server\_Table** defines which group is responsible for a TCOSS instance.

## 4.9 Registry Settings

The following additional configuration values apply to single instances of the Probe Agent and are stored in the local registry (below *HKLM\Software\TOPCALL\<Instancename>*)

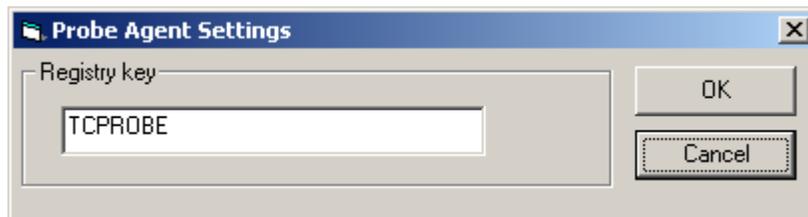
Name	Type	Default	Description
ActivityTimeout	DWORD	10	Inactivity timeout in minutes. 0: timeout disabled
AlertTemplateError	SZ		Template for error alert. This value is set to ALERTERR after installation. If empty, TCPROBE uses hard- coded defaults.
AlertTemplateSuccess	SZ		Template for success alert. This value is set to ALERTOK after installation. If empty, TCPROBE uses hard- coded defaults.
AppType	SZ	TCPROBE	Do not change! This value tells the TC/Report SLA Monitoring routines that this is a TC/Probe instance.
Authentication	DWORD	0	0: SQL Server authentication 1: Windows authentication
CancelFailedProbes	DWORD	1	1: failed probe messages are cancelled 0: failed probe messages stay at inactive/problems
DBCcollation	SZ		Collation for database (use only with the English version of MS SQL server)
DBConnectionRetries	DWORD	3	Number of connection retries before agent stops
DBDirectory	SZ	C:\MSSQL7\DATA	Directory for database files (on SQL server)
DBName	SZ	TCREPORT	SQL database name
DBPassword	SZ		SQL database user password (stored encrypted)
DBServer	SZ		SQL server name
DBSetupError	DWORD	0	Used by Setup only
DBSetupErrorText	SZ		Used by Setup only
DBSystemPassword	SZ		System user password (for Setup only)
DBSystemUser	SZ	sa	System user name (for Setup only)
DBUser	SZ		SQL database user
DefMessageText	SZ	This is a test message	Default text for probe messages.
Group	SZ	<Instancename>	Probing agent group
PollCycle	DWORD	10	Poll cycle
TraceLevel	DWORD	1	Trace level

## 5. KCS Management Console Add-Ins

Currently, TC/Probe can be configured only via TCMC.

The TCMC panels for TC/Probe and TC/Report read information from the local registry (e.g. database connection parameters). Therefore, they can only be used on the computer where the agent runs.

It is possible that there are several instances of TC/Probe installed on the same workstation. Therefore, when TCMC is first started, it asks for the instance it should read the configuration from.

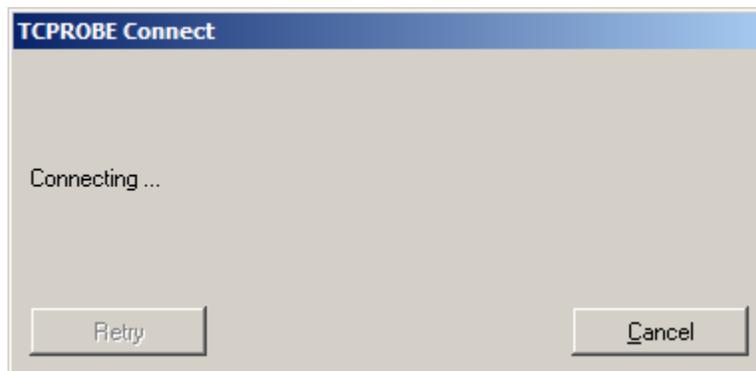


Please enter the instance name or click OK to accept the default value (TCPROBE).

The selected instance name is written to registry key  
*HKLM\Software\Topcall\ProbeAgents\LastUsedAgent.*

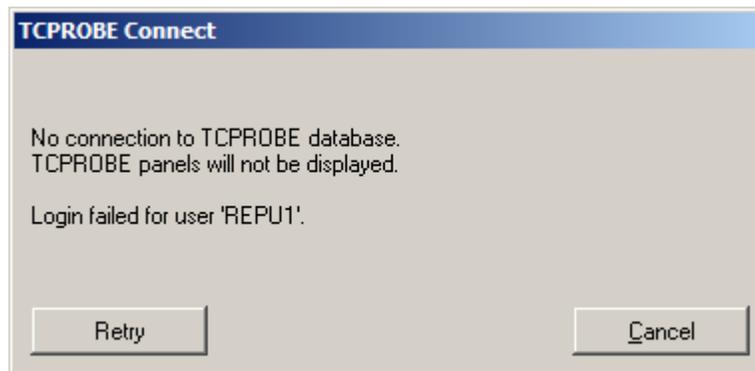
The dialog box is shown only the first time. If you want to use a different instance later, just change the registry value.

When TCMC starts, it tries to connect to the database used by TC/Probe. While the connection is being established, a dialog window is visible:



It is possible to cancel the connection attempt via the Cancel button.

If the connection fails, the dialog displays an error message. You can retry or cancel the connection.



Without connection to the database, all TC/Probe specific panels are empty. After fixing the connection problem, you have to restart TCMC in order to work with the TC/Probe panels.

## 5.1 Fetch Agent Server Panel

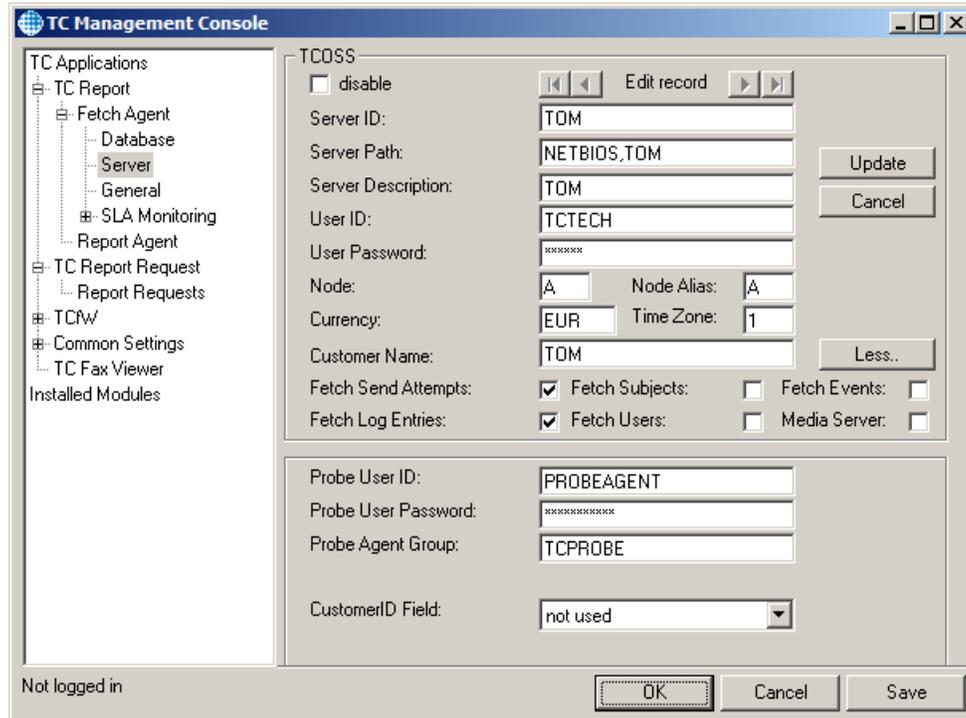
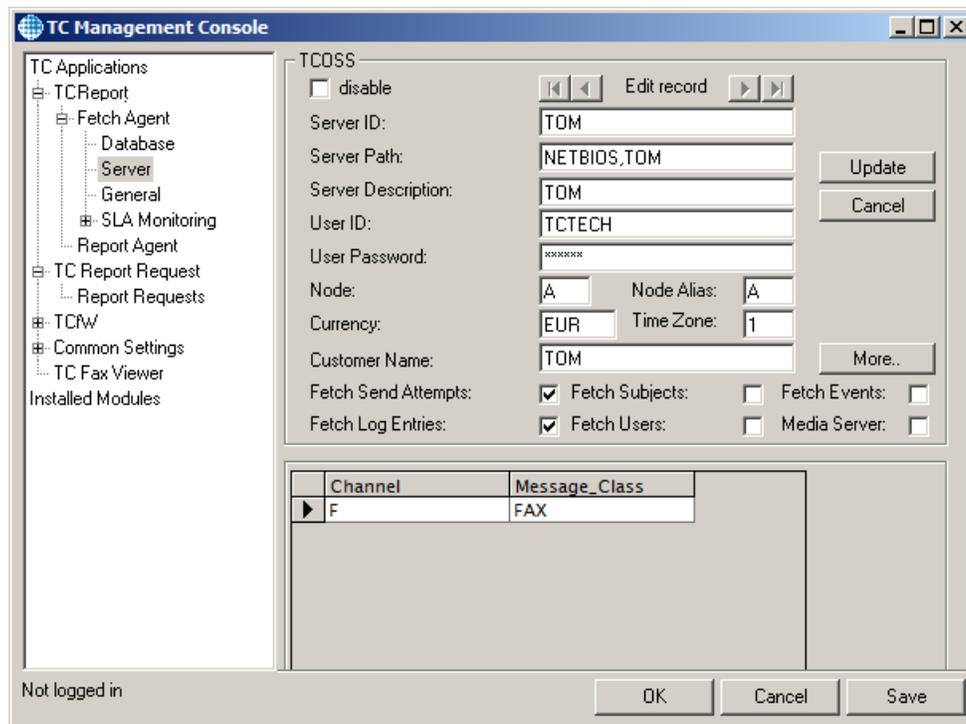
If TC/PROBE and TC/REPORT share the same database, the following fields must be configured via the Servers panel in the TCMC property page of the TC/Report Fetch Agent:

- Probe Agent User
- Probe Agent Password (will be encrypted)
- Probe Agent Group

Note: You must explicitly enter the agent group name. The default group name used by the Probe Agent is "TCPROBE".

These additional fields are visible and can be edited when you click the button labeled **More** within the server panel. The fields overlay the channel definitions. To display channel definitions again, click the button labeled **Less**.

**Note:** to make the buttons **More** and **Less** visible, you must edit the server record.

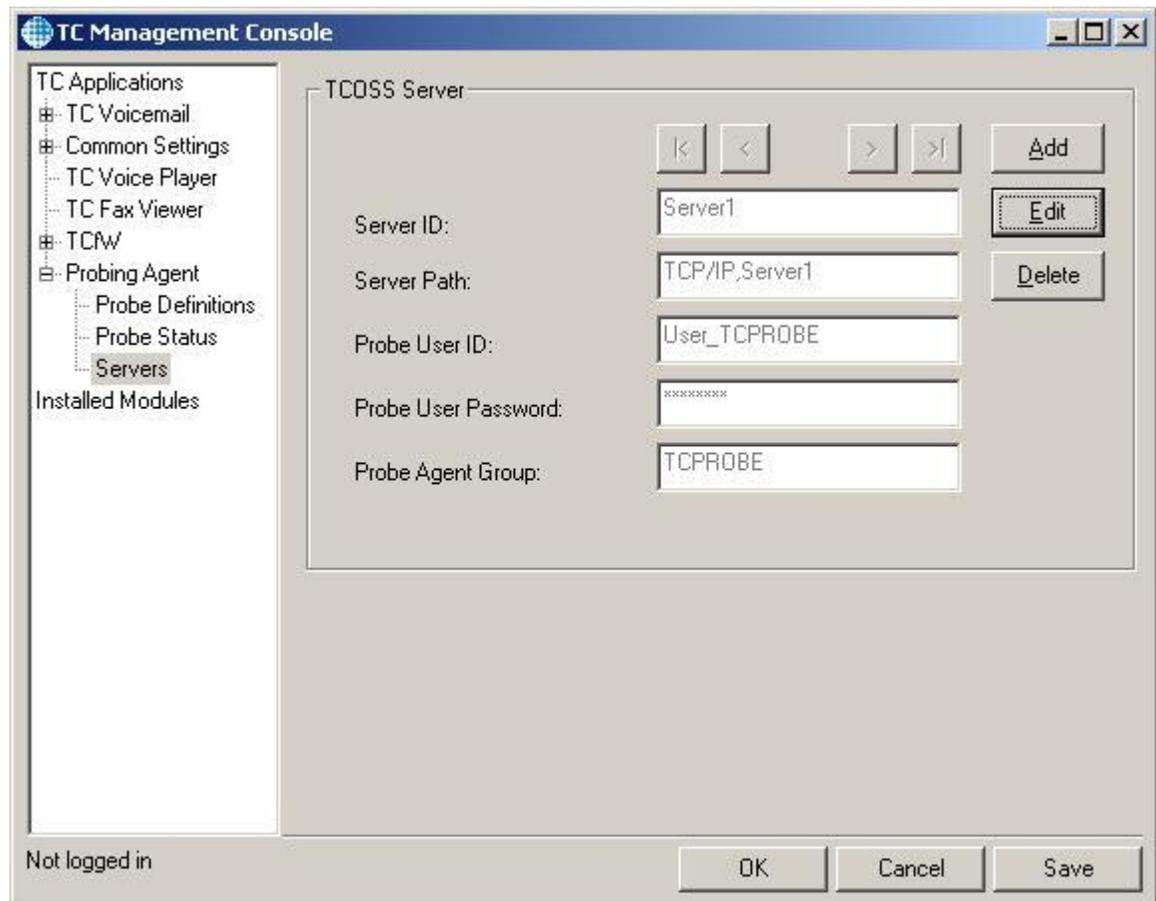


When a server is deleted, all probe related information for this server is also deleted.

## 5.2 Probe Agent Server Panel

If TC/PROBE is not integrated with TC/REPORT, i.e. uses its own dedicated database, the TCMC panel of TC/Probe contains a simple Servers property page, where you can add and modify server definitions.

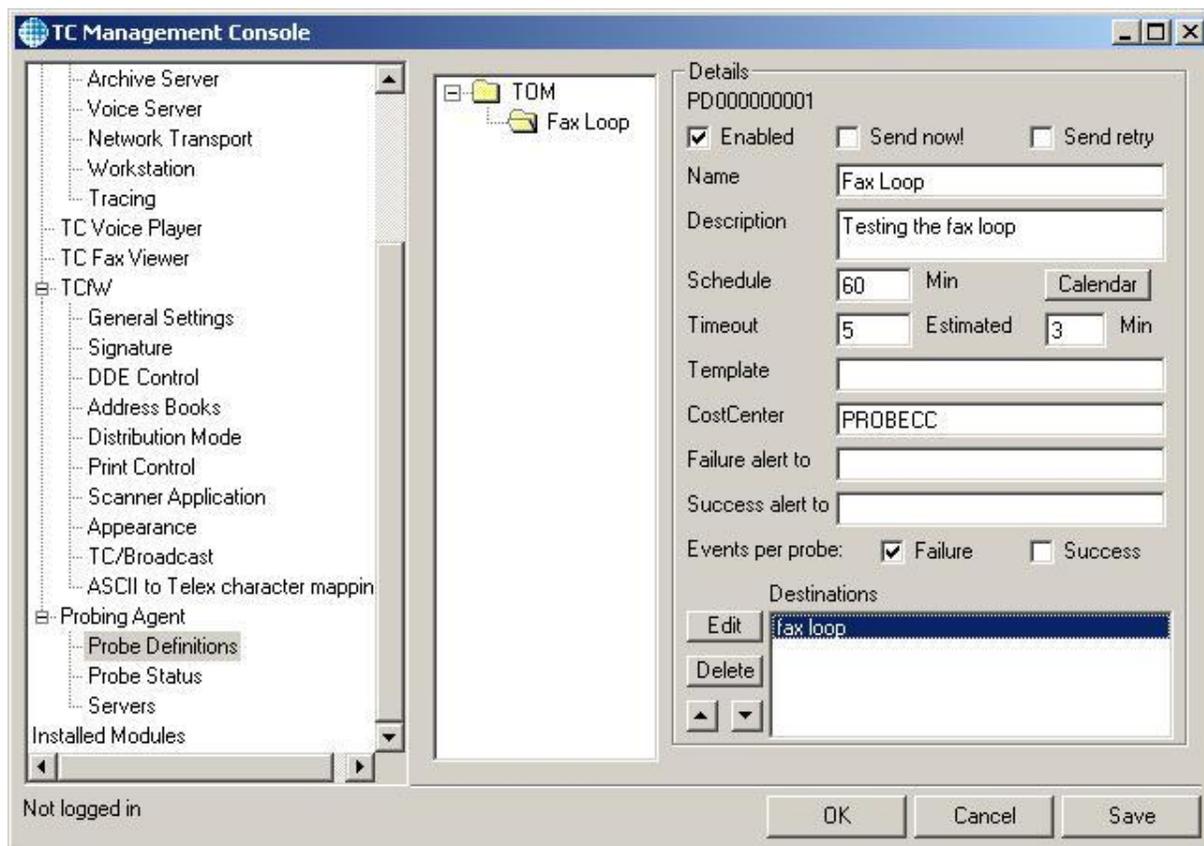
This property page is only displayed if needed: The TC/Probe TCMC panel consults the registry to check if the TC/Report Fetch Agent is installed locally and uses the same database as TC/Probe. If this is the case, it does not display the Servers tab, and the servers must be edited via the Fetch Agent's property pages.



The Servers property page contains only attributes that are used by TC/PROBE.

You can add, edit and delete server definitions. Servers added via this panel are only enabled for use by TC/Probe. If you want to use them via TC/Report, please use TC/Report's TCMC panel to enable the server and add all attributes needed by TC/Report.

## 5.3 Probe Definitions Panel



In this panel, you can create, modify and delete probe definitions and destinations. Setup installs this property page on the Probing Agent's workstation.

In the tree view on the left side, you see which probes are already defined for the servers configured in the TC/Report database. As you navigate through the list, the right side of the window shows detailed information about the selected probe definition.

**ID and status:** The first line shows the unique ID that is assigned automatically to the probe definition, and the current probe status. Probe status means the result of the last probe and the date and time of this result. If no probe has been sent yet (e.g. for a new probe definition), the status shows up as OK, but no date and time is displayed.

**Note:** After changing the probe definition, it may be useful to test the probe with the "Send now" button. Otherwise, the status line still shows the status of the last probe that was sent before the change.

**Enabled:** If you clear this checkbox, sending of regular test messages will be disabled for this probe definition. Sending single test messages via the **Send now!** checkbox is still possible. Can only be checked if at least one destination is defined for this probe definition.

**Send now! :** If you enable this checkbox, an immediate probe message is ordered as soon as you save your changes. Immediate test messages do not affect the configured probe schedule. Can only be checked if at least one destination is defined for this probe definition.

**Send retry:** If this checkbox is enabled, failed probes will be retried immediately. This option is needed for the TCPPROBED report that displays how long a probe path is unavailable.

**Name:** enter a short descriptive name for the probe (e.g. describing probe endpoints and schedule)

**Description:** longer description of the probe

**Schedule:** interval (in minutes) for regular test messages

**Calendar:** Clicking this button opens the Calendar Info dialog, where you can define at which hours periodic probe messages may be sent (for every day of the week). In future versions, more complex calendars may be supported.

**Timeout:** maximum turnaround time (in minutes) for this probe. The timeout should be shorter than the schedule.

**Estimated:** estimated turnaround time (in minutes) for this probe. This value is currently not used, but may be useful in future reports (e.g. to display the difference between estimated time and real turnaround time).

**Events per probe:** By default, event log entries are only written when the probe status changes (i.e. at the first probe after creating the probe definition, when the first probe fails after a series of successful probes, and when the first probe succeeds after a series of failed probes). You can use the checkboxes to change this behavior:

If the checkbox **Failure** is selected, TC/Probe will write an event log entry at every failed probe, except for retries.

If the checkbox **Success** is selected, TC/Probe will write an event log entry at every successful probe.

**Success alert to:** Recipient of success alert message. The success alert message is sent when the first probe is sent successfully after probe definition creation or after a series of failed probes.

**Failure alert to:** Recipient of failure alert message. The failure alert message is sent when the first probe fails after probe definition creation or after a series of successful probes.

Alert messages are sent via the Kofax Communication Server. The recipient can be a KCS user, or a combination of service and number, separated by a comma (e.g. "SMTP,kcs.operator@company.com"). If no alert message shall be sent, leave the field empty. It is recommended to use a KCS user as alert recipient.

**Template:** Here you can specify a template message for the probes. The template must be in the message folder of the Probe Agent user. If no template is specified, the test messages sent will contain a standard text, defined in the Probe Agent's configuration. If a template is specified, the test message content (coversheet, text blocks, and attachments) will be taken from this template.

Restriction for fax loop:

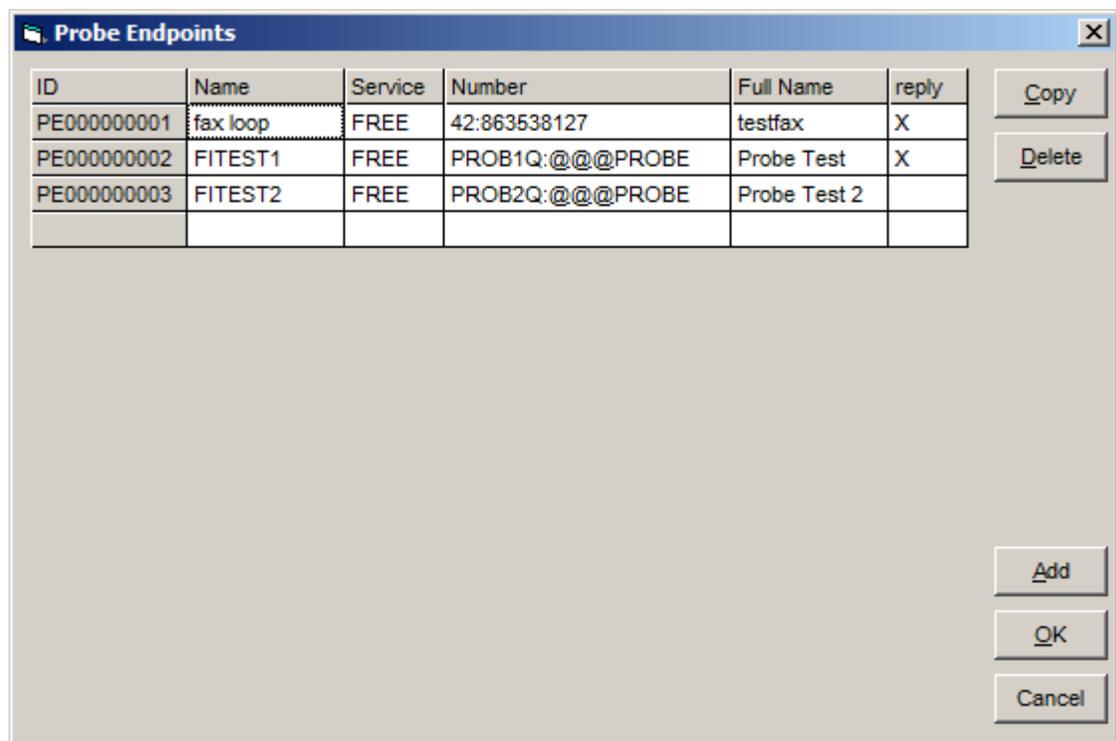
Do not specify a template for fax loop probes (sending from one channel to another). If you use a template for these probes, the incoming fax is not recognized as a reply.

**Costcenter:** The cost center used for probe messages. If this field is empty, probes are sent with the cost center of the Probe Agent.

**Destinations:** This list contains shows the short names of all destinations for this probe, in the order they are delivered.

- To edit the list of probe destinations, click the **Edit** button. This opens the **Probe Endpoints** window (see below).
- To change the order of the destinations, use the buttons with the up and down arrows.
- To remove a destination from the probe definition, use the **Delete** button or select the destination in the list and press the **Del** key.

### 5.3.1 Configuring Probe Endpoints



The **Probe Endpoints** window is opened when you click the **Edit** button in the Probe Definition, or by choosing the context menu **Probe Endpoints** of a server node in the tree view.

Here you see all probe destination addresses that have already been defined for this TCOSS instance. You can select an existing probe endpoint. Alternatively, you can start typing into the empty line at the end of the list and define a new endpoint.

**Name:** short name of the probe endpoint (displayed in the Probe Definition screen).

**Service:** KCS service of the recipient

**Number:** address of the recipient

**Full Name:** full name of the recipient

**Reply:** Check this field if the destination returns an automatic reply or routes the message back to the Probe Agent user (e.g. fax, telex or SMS loop). You can toggle the check mark by double-clicking the field or by pressing any key in the field.

**Copy:** Creates a new endpoint as a copy of the currently selected.

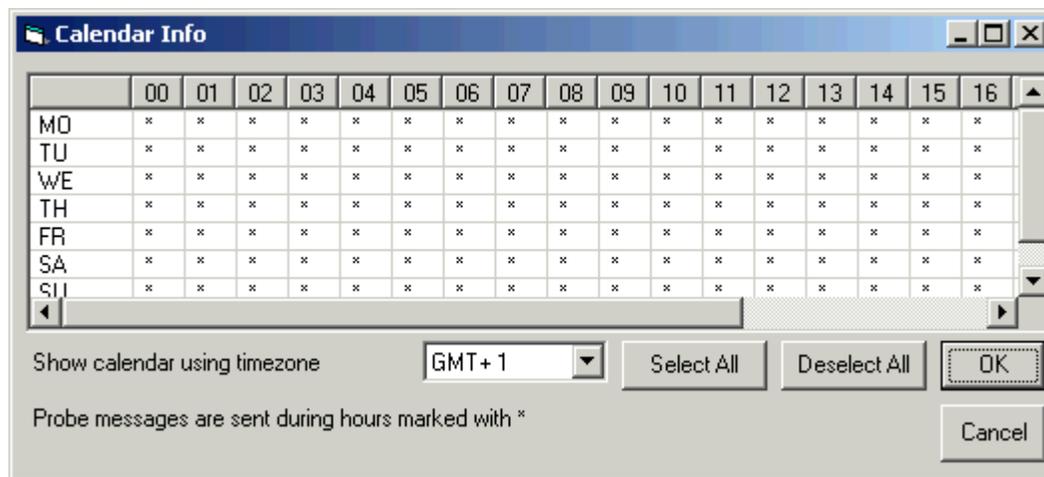
**Delete:** Deletes the selected probe endpoint. This is only possible if the endpoint is not used by any probe definitions. Probe endpoints that are still used by probe definitions cannot be deleted in this window. In this case a warning message is displayed: “Cannot delete endpoint, as it is used in a probe definition”. You will be able to delete the endpoint after you removed it from the destination list of the probe definitions that used it.

**Cancel:** If you click Cancel, the changes are discarded and the probe endpoints window is closed.

**OK:** If you click OK, the changes are kept and the probe endpoints window is closed.

**Add:** The Add button is only visible if the window was opened from a probe definition. If you click it, all selected (highlighted) endpoints are added to the current probe definition. Afterwards, you should adjust the order of the endpoints of the probe definition via the Up and Down buttons.

### 5.3.2 Configuring Calendar Information

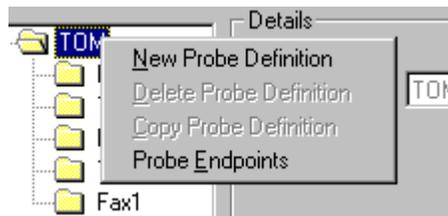


By default, the probe definition is always enabled (all hours of the week are marked with stars). You can disable it for certain hours of the day, by clicking away the star (\*) in the correct field.

Show calendar using timezone: Here you can choose the time zone for displaying the calendar. By default, GMT is used. If your Kofax Communication Server uses a different time zone, select the matching time zone and enter calendar information based on this time zone.

### 5.3.3 Creating a New Probe Definition

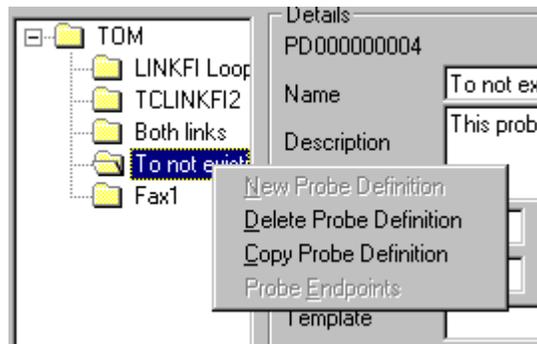
Right click the server in the tree view, and select “Add Probe Definition” from the context menu.



A blank probe definition form is displayed in the right panel. Here you can enter detailed information about the probe.

### 5.3.4 Deleting a Probe Definition

Right click the probe definition in the tree view, and select “Delete Probe Definition” from the context menu.

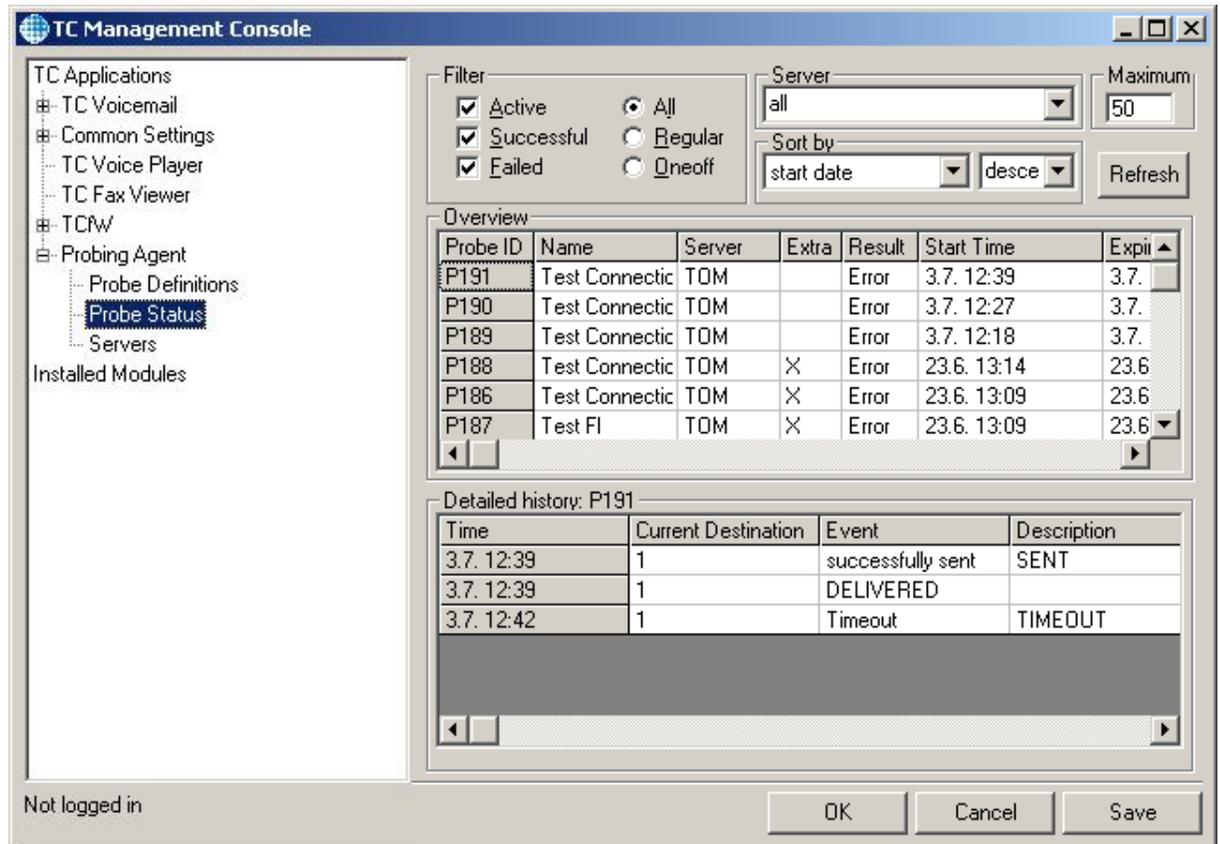


### 5.3.5 Copying a Probe Definition

Right click the probe definition in the tree view, and select “Copy Probe Definition” from the context menu. A new probe definition is created. All information from the currently selected probe definition (except Name, Endpoints and Enabled flag) is copied to the new one.

## 5.4 Probe Status Panel

The Probe Agent writes its actions to the TC/Report database. The Probe Status panel of TC/MC retrieves and displays this information.



This panel can be used to monitor probes. By default, the newest 50 probe messages are displayed. The list is refreshed in regular intervals. To refresh it immediately click the **Refresh** button.

You can apply additional filters:

**Active:** If checked, the display list includes probes that are currently being sent

**Successful:** If checked, the list includes successfully finished probes

**Failed:** if checked, the list includes failed probes.

**Regular:** Display only periodic probes

**Oneoff:** Display only probes that were triggered via TCMC, an application, or were retries for failed probes

**All:** Display both types of probes

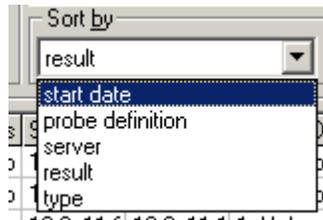
**Server:** Select a specific server, or "All" to display probes from all servers.

**Maximum:** maximum number of displayed probes. The newest probes matching the selection are displayed, no matter what sort order is selected.

After changing the filters, click **Refresh** to change the display list accordingly.

**Sort by:**

By default, the probes are sorted by their start time, newest probes are on top of the list.



The **Sort by** area allows changing the sort order. The list can be sorted in ascending or descending order by one of the following fields:

Option	Field in overview	Field in database
start date	Start time	P_TIME_STARTED
probe definition	Name	P_DEFINITION_NAME
Server	Server	P_SERVER_ID
Result	Result	OK, Error or Active, information from P_STATE
Type	Extra	X if P_REGULAR is 0

### Overview:

The overview list contains one line for every probe. By default, all available columns are displayed:

Column Header	Database field	Description
Probe ID	P_ID	Unique probe ID
Name	P_DEFINITION_NAME	Probe definition name
Server	P_SERVER_ID	TCOSS instance
Extra	P_REGULAR	X for non-regular (oneoff) probes R for retries blank for regular periodic probes
Result	P_STATE	OK, Error and Active are displayed
Start Time	P_TIME_STARTED	Probe start time
Expiry Time	P_TIME_EXPIRED	Probe expiry time (interesting for active probes)
Current Destination	P_CURR_DEST, PE_NAME	Index and short name of current probe destination
Details	P_STATE_DESCR	Descriptive text for last event

### Detailed history:

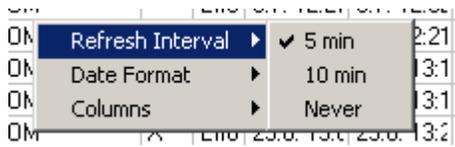
In this area, you find the detailed history (series of events) for the probe selected in the overview.

The following information is displayed:

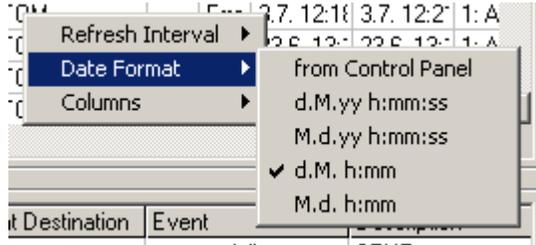
Column Header	Database field	Description
Time	PH_DATE	Event date and time
Current destination	PH_DEST	Current destination at event time
Event	PH_EVENT	Event type
Description	PH_DESCRIPTION	Event description

### Context menu:

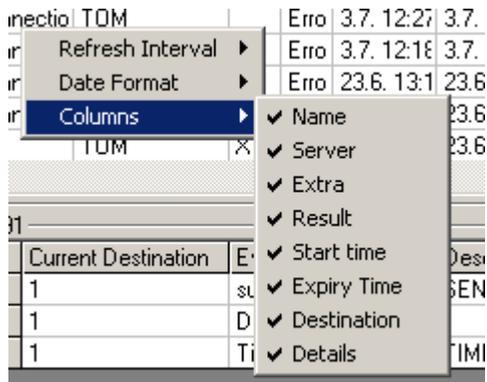
If you right-click the overview, a context menu appears where you can set display options:



You can adjust the refresh interval to 5 minutes or 10 minutes, or disable automatic refresh.



You can choose a format for the date and time fields in the list.



You can disable or enable columns in the overview.

When you click SAVE or OK in TCMC, the following display settings are saved (in the local registry). When you start TCMC again, these settings are restored.

- Enabled / disabled state of overview columns
- Refresh interval
- Date format
- Filter settings
- Sort order
- Maximum number of entries in overview

## 6. Reports

Two reports for Probe message statistics are part of the standard KCS. They are installed as part of the TC/Report Report Agent.

### 6.1 TCPPROBE Report: Probe Statistic

#### TOPCALL Report

#### PROBE STATISTIC

Time period: 07.07.2003 17:00:00  
(local time) 08.07.2003 08:59:59

Print date: 08.07.2003  
Print time: 12:05

Server	Probe Name	Time period:	Probes done	Probes failed	Avg. Duration
TOM	Test to TC User	2003/07/07	3	0	10
		2003/07/08	10	0	10
		<b>Total:</b>	13	0	10
	Test to TCLINKFI	2003/07/07	5	0	28
		2003/07/08	8	0	18
		<b>Total:</b>	13	0	22
TOM	<b>Total:</b>	<b>26</b>	<b>0</b>	<b>16</b>	
<b>Total:</b>			<b>26</b>	<b>0</b>	<b>16</b>

This report is for evaluation of periodic probes. It shows the proportion of failed periodic probes during an interval.

The report can be grouped by:

Name (in report request)	Description
Time	Probe start time (P_TIME_STARTED)
Server_ID	TCOSS instance (P_SERVER_ID)
Customer	Customer (matching the P_SERVER_ID)
ProbeID	Probe definition ID (P_DEFINITION)
ProbeName	Probe name (P_DEFINITION_NAME)

The following statistic results can be displayed:

Name (in report request)	Description
ProbesDone	Total number of probe messages sent
ProbesFailed	Number of failed probe messages
PercentFailed	Percentage of failed probe messages
AvgDuration	Average probe duration in seconds

You can select a maximum of 3 grouping categories and 3 statistic results columns.

The time parameter specified in the report request and displayed in the report is to be interpreted as local time on the report agent computer.

## 6.2 TCPROBED Report: Probe Failure Statistic

### TOPCALL Report

#### PROBE FAILURE STATISTIC

Time period: 01.01.2003 00:00:00  
(local time) 31.12.2003 23:59:59

Print date: 08.07.2003  
Print time: 12:05

Server	Probe Name	Time period:	Failures	Duration	Max. Duration
TOM	New Probe Definition	2003/07	1	4	4
	New Probe Definition	Total:	1	4	4
TOM	Total:		1	4	4
Total:			1	4	4

This report displays how long a messaging path was unavailable. You can only use it for probes that are configured to be retried on failure.

The report counts periods of service unavailability and shows their number and duration.

The report can be grouped by:

Name (in report request)	Description
Time	Probe start time (P_TIME_STARTED)
Server_ID	TCOSS instance (P_SERVER_ID)
Customer	Customer (matching the P_SERVER_ID)
ProbeID	Probe definition ID (P_DEFINITION)
ProbeName	Probe name (P_DEFINITION_NAME)

The following statistic results can be displayed:

Name (in report request)	Description
Failures	Number of service unavailability periods (downtimes)
Duration	Total duration of downtime
MaxDuration	Maximum duration of downtime
AvgDuration	Average duration of downtime

You can select a maximum of 3 grouping categories and 3 statistic results columns.

The time parameter specified in the report request and displayed in the report is to be interpreted as local time on the report agent computer.

## 6.3 Custom Reports

More complex reports, combining probe results with other information like messaging statistics, application availability, and audit log entries, can be created by IT-staff who are familiar with Crystal Reports or a similar reporting tool. Of course, customized reports can also be provided on demand by Kofax staff.

## 7. Probe-Specific TCLINK Configuration Options

For the features described in this chapter, you need TCLINK 2.07.00 or higher.

### 7.1 Probe SMS Messages

If you configured a special service for the probe agent, all probe messages will use this service in the originator address. Unfortunately, this does not work well with SMS probe messages sent via TC/LINK-WM or TC/LINK-MD. These link types ignore the originator service and therefore the notifications are not routed properly.

To solve this problem, upgrade the links via KCS setup version 7.91.03 or higher, and set the following two registry values for TC/LINK-WM and TC/LINK-MD.

Registry value	Type	Default	Description
Probe\ ProbeAgent	SZ		Probe agent User ID
Probe\ ProbeService	SZ		Service used by the probe agent

### 7.2 Automatic Probe Replies from TCLINK

TCLINK can be configured to terminate probe messages immediately, without passing them to the remote mail system, and to create an immediate reply.

This is useful if the customer does not want to include the remote mail system in the monitored path.

For this purpose, you have to configure 2 settings in the TCLINK registry:

Registry value	Type	Default	Description
Probe\ ProbeAgent	SZ		Probe agent User ID 1 to 112 characters
Probe\ ProbeDestination	SZ		Probe destination address

#### Example:

ProbeAgent = TCPROBE

ProbeDestination = @@@PROBE

A message from TCPROBE:00235 with destination address TCLMXQI:@@@PROBE is picked up by TCLINK. As the queue name of the originator (TCPROBE) matches the configured ProbeAgent name and the address of the recipient (@@@PROBE) matches the configured ProbeDestination, TCLINK immediately terminates the message and returns a reply. The reply message has the same content as the probe message.

These addresses are not subject to address mapping !

Content conversion is done for the message.

Both registry keys must be filled (not blank) to enable this option.

### 7.3 Optional Dedicated Queue for Probe Messages

It is possible to define a dedicated probe message queue for every link instance. This queue will be polled in addition to the normal link queues. Thus, a dedicated link instance can be defined as a probe endpoint.

Registry value	Type	Default	Description
Probe\ ProbeQueue	SZ		Additional queue name, with graphic format character, e.g. F11PROBE4

### 7.4 Option to Request a Probe Automatically

#### 7.4.1 Request Probe If No Messages Sent

TCLINK can be configured to request an immediate probe message for the following conditions:

- No message transfer from KCS to the remote mail system for more than xx minutes.
- No message transfer from the remote mail system to KCS for more than xx minutes.

In this respect, message transfer means that a message is received from one side and is posted to the other side successfully. This ignores notifications, messages that cannot be converted and messages that cannot be posted.

Configuration

Registry value	Type	Default	Description
Probe\ RequestIntervalM2TC	DWORD	0	Disabled if 0. > 0: duration in minutes for pause in traffic mail->TC that triggers a probe request
Probe\ RequestM2TC	SZ	0	Probe definition ID for this probe request. Must exist in the database.
Probe\ CodesM2TC	MULTI_SZ		Every line defines a condition that leads to a probe request. See below for details.
Probe\ RequestIntervalTC2M	DWORD	0	Disabled if 0. > 0: duration in minutes for pause in traffic TC->mail that triggers a probe request
Probe\ RequestTC2M	SZ	0	Probe definition ID for this probe request. Must exist in database.
Probe\ CodesTC2M	MULTI_SZ		Every line defines a condition that leads to a probe request. See below for details.

Note: The probe definition ID is the text displayed at the top of the probe definition details in TCMC (e.g. PD000000005).

The probe request is issued by sending a message to the Probe Agent, therefore registry key *Probe\ProbeAgent* must be defined also.

## 7.4.2 Request Probe If Error Occurs

Additionally, you can configure an automatic probe request at certain error conditions. This is done via the registry values *CodesM2TC* and *CodesTC2M*.

*CodesM2TC* defines which errors during conversion of a message from the mail system lead to a probe request.

*CodesTC2M* does the same for messages from TCOS.

Both registry values consist of a sequence of strings. Every line is an error definition. The probe request can be done the first time an error occurs, or after a configured number of errors in sequence (e.g. when the document conversion fails for the 3<sup>rd</sup> time).

Every line has the format

<error code> = <number of errors>

Example: LG=3

(when document conversion fails for the 3<sup>rd</sup> time).

You can configure the following error codes:

<b>Error code</b>	<b>Meaning</b>	<b>Direction</b>
LE	Image conversion failed	Mail -> TCOSS
LG	Document conversion failed	Mail -> TCOSS
LH	Wrong address format for recipient	Both
LI	Wrong address format for originator or passive recipient	Both
LJ	Recipient not accepted by TCOSS	Mail -> TCOSS
LK	Originator not accepted by TCOSS	Mail -> TCOSS
LL	Originator has insufficient permissions	Mail -> TCOSS
LM	TCOSS server inaccessible	Mail -> TCOSS
LY	General message conversion error	Mail -> TCOSS
LX	General message conversion error	TCOSS -> Mail
LW	Virus detected	Both
LZ	Virus checker timeout	Both
M0	Terminated by link exit	Both
M1	License limit reached	Both
*	All errors in this list	Both

Implementation:

For both directions of sending, TCLINK counts all errors occurring during message conversion. If a message is transferred successfully, all error counters for this direction are reset to 0.

If an error occurs and one of the error counters reaches its limit, a probe request is sent, and the error counters are reset to 0 again.

## 8. Installation, Configuration, Maintenance

### 8.1 Prerequisites

You need a separate TC/Probe license for every TCOSS instance. The number of Probe Agents is not counted for the license.

By default, the agent uses the TC/Report database. For this configuration, the TC/Report Fetch Agent must be installed first in order to create this database and to install the TCMC panel needed for server configuration.

If you want to create reports for the Probe Agent, you will need the TC/Report Report Agent as well.

If the Probe Agent uses the TC/Report database, TC/Report and TC/Probe must be upgraded together, i.e. whenever upgrading to a new KCS version, upgrade both applications.

Nevertheless, TC/Probe can also be installed stand-alone, using its own dedicated database. For this configuration, no TC/Report components are necessary.

MS SQL Server 2005 or 2008 or 2008 R2 or 2012 or 2014 is needed. For smaller installations, you can use the Express Edition (with a database size limit of 4 GB).

### 8.2 Space Needed in TC/Report Database

The following database size estimations apply to the default configuration, where TC/Probe and TC/Report share the same database.

TC/Probe needs additional space in the TC/Report database. The following list shows average values for a database created with KCS 9.2 Setup. The values in parentheses are for old databases (varchar columns instead of nvarchar):

- for every TCOSS instance: 192 (96) bytes
- for every probe definition (without endpoints): 582 (385) bytes
- for every probe endpoint (if every endpoint used in 1 probe definition): 253 (188) bytes
- for every single probe sent (overview data only): 204 (204) bytes
- for every probe details record: 139 (65) bytes  
(typically, there will be 2 details records for every endpoint that does not reply, and 3 details records for every endpoint that creates a reply).

**Example:** 1 TCOSS instance with 1 probe definition. The definition has 1 endpoint, which creates a reply. The probe is sent every hour.

Space needed for definitions: 1027 (669) bytes

192 (96) (1 TCOSS)

582 (385) (1 probe definition)

253 (188) (1 endpoint definition)

Additional space needed per day: 14904 (9576) bytes

204(204) \* 24 (24 probes per day)

139(65) \* 3 \* 24 (3 details records per probe, 24 probes per day)

### 8.3 Installation Steps

- 1) Optional: Install the TC/Report Fetch Agent from KCS 7.54.02 or above.  
This step is needed if TC/Probe and TC/Report will share the same database.
- 2) Create a probe agent user on TCOSS.  
This user must have "visible in outbox" enabled. He needs a KCS internal address (service "TOPCALL"), and he is not allowed to have events.

Grant him at least the following permissions:

Message folder (R/W) (for accessing and creating template messages)

System folder (R/W) (for reading system time)

Services

Change cost center

Enter number directly (always)

If loop messages (e.g. fax, telex, SMS) shall be sent, it will be necessary to give the user his own fax, telex or SMS address (this will be the target address for the loop test).

Example for fax loop:

Probe agent user has an inactive address with service FXI, number 27.

The destination address for the fax loop probe is 86353735-27. This fax number is allocated to channel 44. For sending, a different fax channel (42) is used. So there will be a fax connection between the fax channels 42 (out) and 44 (in), and in the end TCOSS routes the incoming fax to the Probe agent user's inbox.

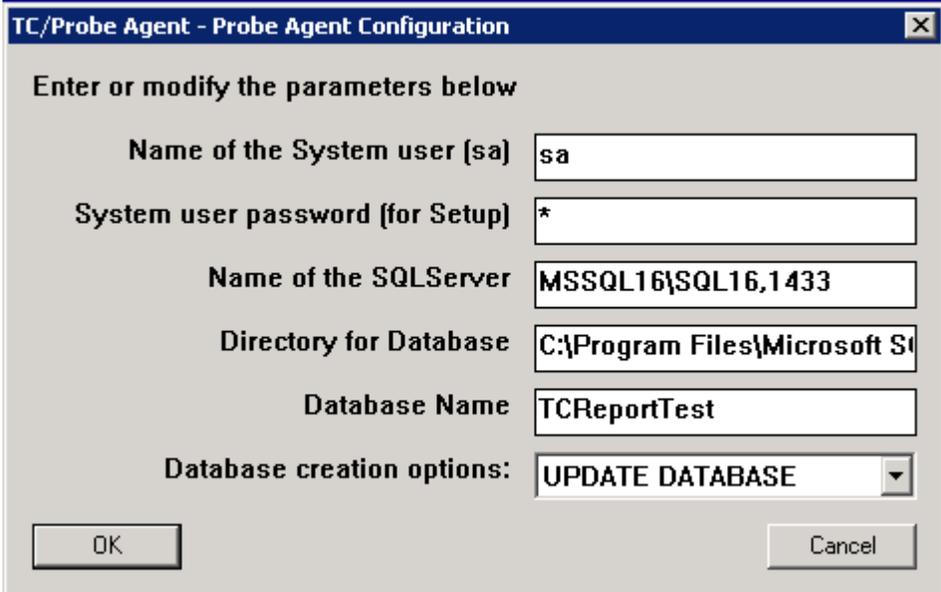
- 3) Optional: Create a TCOSS service for sending to TC/Probe.  
This step is necessary if TC/Probe will be used together with TC/LINK-MX7.  
Service settings: address type "Free address", prefix: probe agent user name followed by a colon, e.g. "TCPROBE:", support text, image, restricted text and binary.

This service will be used in the sender address of all probe messages. Probe destinations must support sending to this service. For Lotus Notes, this means that a foreign domain has to be created for the service. For TC/LINK-MD and TC/LINK-MQ, you have to configure the service name in the link registry (see section 7.1 for details).

- 4) Enter name and password of this TCOSS user in the TC/Report Server panel in TCMC (fields Probe User ID, Probe User Password).
- 5) Run KCS Setup to install the Probe Agent. Setup is similar to the Fetch Agent Setup. See section 8.4 for details.
- 6) Use TCMC on the Probe Agent computer to configure probe definitions.
- 7) For probe-specific TCLINK features (auto-reply, dedicated probe queue, automatic probe requests issued by TCLINK), install TCLINK 2.07.00 (or higher) on the link computer.  
After link startup, the new registry keys needed for TC/Probe integration have been created and you can modify them via a registry editor. Make sure to restart the link after modifying the registry.
- 8) For probe-specific reports, install the TC/Report Report Agent and the TC/Report Request Client from KCS 7.54.02 or above.

## 8.4 TC/PROBE Setup Screens

Following are TC/Probe setup screens and field description.



**TC/Probe Agent - Probe Agent Configuration**

Enter or modify the parameters below

Name of the System user (sa)	sa
System user password (for Setup)	*
Name of the SQLServer	MSSQL16\SQL16,1433
Directory for Database	C:\Program Files\Microsoft S...
Database Name	TCReportTest
Database creation options:	UPDATE DATABASE

OK Cancel

### **Name of the System user (sa):**

Enter the name of the MS SQL Server System Administrator user. For the first installation in stand-alone mode (not integrated with TC/Report), you must specify an SQL user with sysadmin permissions (e.g. the built-in sa user). This information is needed for creating the user account for TC/Probe and the database.

For an upgrade from a previous release, or if sharing an already existing TC/Report database, you can specify the database user name instead.

**System user password (for Setup):**

Enter the password of this user. Default: no password.

**Name of the SQLServer:**

Enter the network name of the SQL server.

Note: if SQL server is installed as a named instance, you have to specify the instance name as well. Syntax: <computer name>\<instance name>.

**Directory for Database:**

Enter the complete path name of the directory where the database shall be stored. Setup expects you to enter the name of an existing directory.

**Database Name:**

Enter the database name.

**Database creation options:**

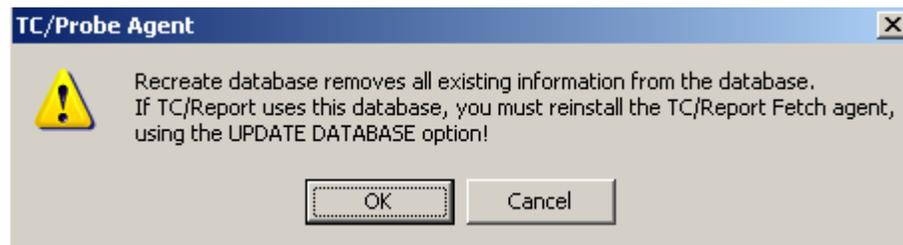
UPDATE DATABASE: use this option for product upgrades and for first installations if TC/Report and TC/Probe share the same database.

NO DATABASE CHANGE: use this option only for product upgrades or configuration changes that do not involve database upgrades, e.g. if the database user password has been changed and you want to store the new password encrypted in the Probe Agent registry.

RECREATE DATABASE: use this option only for first installations if TC/Probe uses its own dedicated database.

If the database is shared by TC/Probe and TC/Report, this option must be handled with care: Recreating the database during TC/Probe Setup removes the complete database. Then it reinstalls the database and all objects that TC/Probe needs. The objects needed by TC/Report only are not installed. This means, that you have to reinstall the TC/Report Fetch Agent afterwards, and use the Update Database option there.

Setup shows a warning message box before deleting the database, so that you still can cancel the action.



### Authentication

Select the authentication mode for accessing database: Windows Authentication or SQL Server Authentication.

### Database user name used by Probe Agent:

If you have selected the SQL Server Authentication, and creating database (i.e. if not integrated with TC/Report), you can specify a database user name. If the database already exists, do not change the user name.

**Note:** This field is ignored if you select **Windows Authentication** for accessing the database.

### Database user password used by Probe Agent:

If you have selected the SQL Server Authentication, also specify the password for the database user.

**Note:** This field is ignored if you select **Windows Authentication** for accessing the database.

### Collation (only for new databases):

To use the default collation (matching the SQL server language), leave the text box empty. Otherwise, enter the correct collation name. See section 8.10 for possible values.

If you have selected **Windows Authentication** in the previous screen, specify the following Windows credentials.

### Windows NT user Account

Enter the name of the Windows user.

**Domain**

Enter the domain of the Windows user.

**Password**

Enter the password of the user.

## 8.5 Configuration Example: Exchange <-> Fax

This example shows how it is possible to monitor sending and receiving faxes from Exchange.

Create a test mailbox in the Exchange organization and enable the out-of-office agent for this mailbox. The out-of-office agent must be configured to reply to all messages with a certain message.

No further configuration is needed for TCLINK.

In TCMC:

Create a probe endpoint (e.g. "Exchange test recipient") with the Exchange address of this mailbox. Set the "reply" checkbox, as this mailbox always sends a reply.

Create a probe definition, named for example "Exchange to Fax", set its schedule, timeout, template etc. Add the probe endpoint "Exchange test recipient" to this probe definition.

In TCFW:

Assign an inactive FXI address to the TCPROBE user and enable inbound fax routing on TCOSS.

In TCMC:

Create a second probe endpoint (e.g. "Fax loop"), using another fax channel (which is not used for inbound routing) and the full fax address of the TCPROBE user. Set the "reply" checkbox, as the fax will be routed back to the TCPROBE user (as if it was sent as a reply).

Add the probe endpoint "Fax loop" to the probe definition.

## 8.6 Configuration Example: TCLINKSM -> Fax

This example shows how to monitor TCLINKSM availability (without testing the internet connection) and outgoing fax messages (without loop).

For this configuration, you need TCLINK.EXE version 2.07.00 or higher.

Set the following registry values for the TCLINKSM instance:

Probe\ProbeAgent = TCPROBE

Probe\ProbeDestination = @@@PROBE

Provide a test fax machine that will periodically get probe messages.

In TCMC:

Create a probe endpoint (e.g. "TCLINKSM loopback") with service SMTP and number "@@@PROBE" (this is no valid internet address, but it won't go out to the internet anyway). Set the "reply" checkbox, as TCLINK will send a reply.

Create a probe definition, named for example "Internet to Fax", set its schedule, timeout, template etc. Add the probe endpoint "TCLINKSM loopback" to this probe definition.

Create a second probe endpoint (e.g. "Test fax"), with the number of the test fax. Do not set the "reply" checkbox, this fax machine will only receive messages.

Add the probe endpoint "Test fax" to the probe definition.

## 8.7 Configuration Example: Channel on Media Server

With TCOSS version 7.55.04 or above, it is possible to send a message to a dedicated media server channel.

Sending to a dedicated media server channel is possible by sending the message to a system user of the form "+MediaServerChannels/mmmm/cc", where "mmm" is the media server name and "cc" the channel on the media server. When creating a user of this kind manually take care to set the "visible in outbox" flag.

Example:

The following example uses this feature to define a probe that tests sending via channel 50 on the media server SOMEDI1.

In TCFW:

Create a user "+MediaServerChannels/SOMEDI1/50" and give him the "visible in outbox" attribute.

In TCMC:

Create a probe endpoint (e.g. "Channel 50 on SOMEDI1") with service FREE and number "+MediaServerChannels/SOMEDI1/50:12345". In this example, 12345 is the number of a test fax machine, therefore we do not select the "reply" checkbox.

Create a probe definition, named for example "Sending via channel 50", set its schedule, timeout, template etc. Add the probe endpoint "Channel 50 on SOMEDI1" to this probe definition.

## 8.8 Configuring Automatic Replies in Mail Systems

This chapter describes how automatic replies can be configured for mail system users.

### 8.8.1 MS Exchange Out of Office Replies

You can use the MS Exchange Out of Office agent to generate replies to probe messages. In this case, the probe destination is a MS Exchange mailbox that is permanently "out of office".

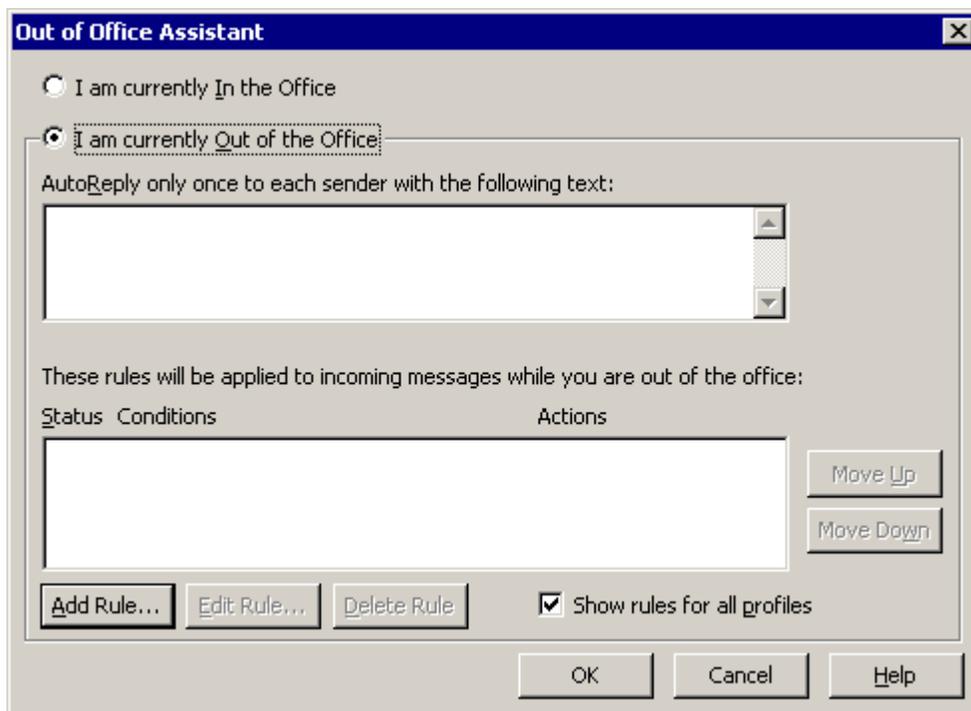
In order to receive probe replies via TC/LINK-MX7, there must be a dedicated TCROSS service for TC/Probe (see section 8.3).

### 8.8.1.1 Outlook Client

Out of Office replies are configured via the Outlook client. Choose **Tools | Out of Office Assistant** from the menu.

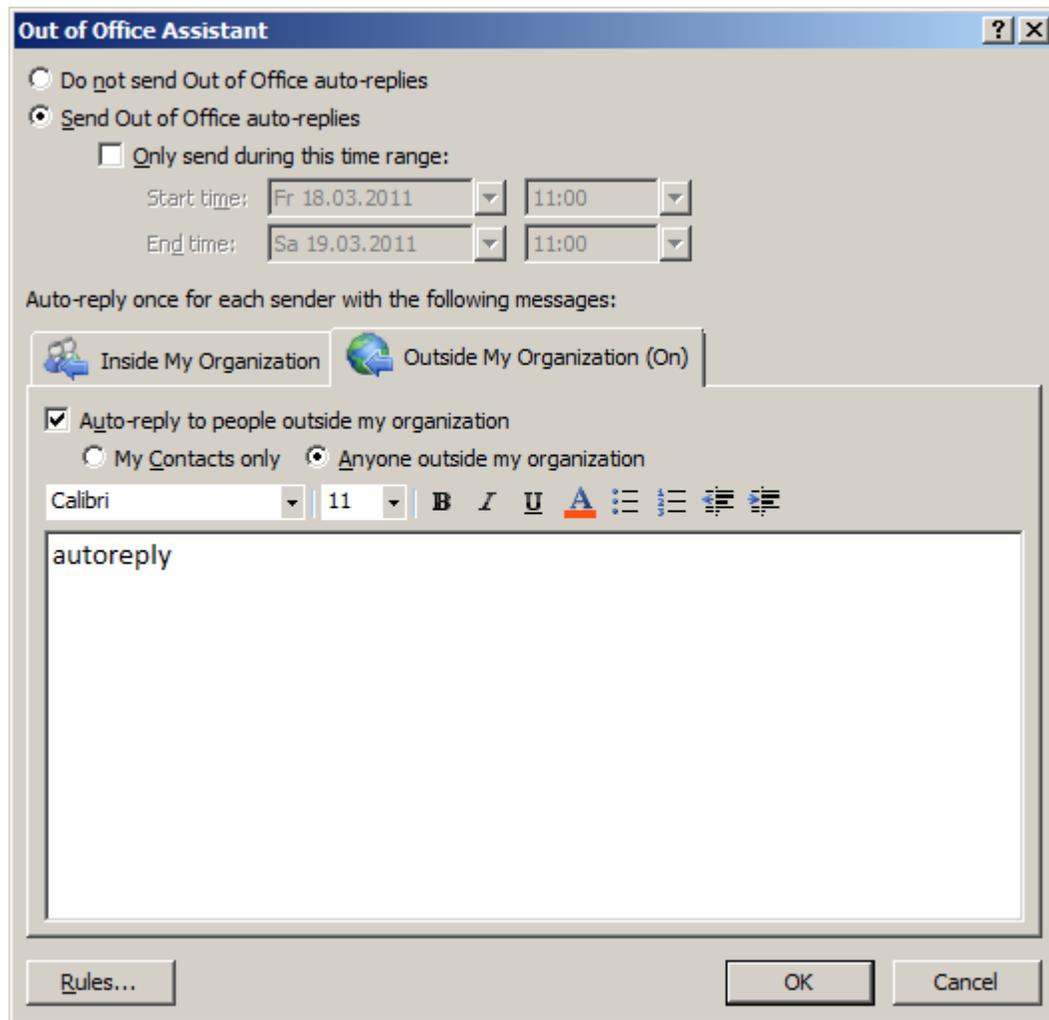
#### Outlook 2003

Select the radio button **I am currently Out of the Office** and enter the auto reply text in the upper text field.



#### Outlook 2007

With Outlook 2007, the Out of Office Assistant distinguishes between internal and external senders. Make sure that the reply is sent to anyone outside the organization.



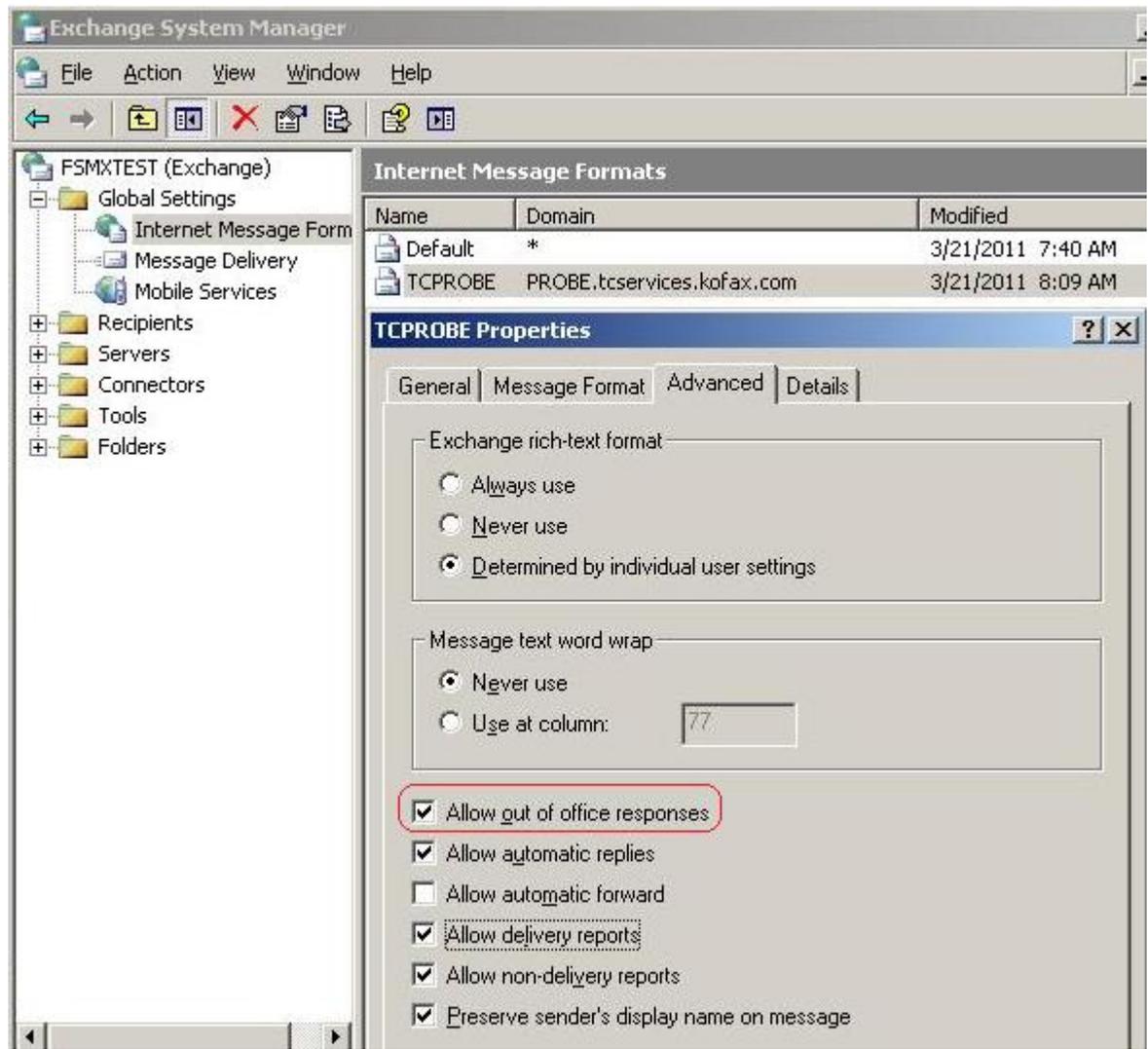
### 8.8.1.2 Exchange Server

If you connect to Exchange via a SMTP-based link type (e.g. TC/LINK-MX7 or TC/LINK-SM), make sure that out-of-office replies to the internet are enabled.

By default they are enabled, but the Exchange administrator can disable out of office replies on a domain basis. The following screen shots show how to check whether out-of-office replies to the internet are enabled.

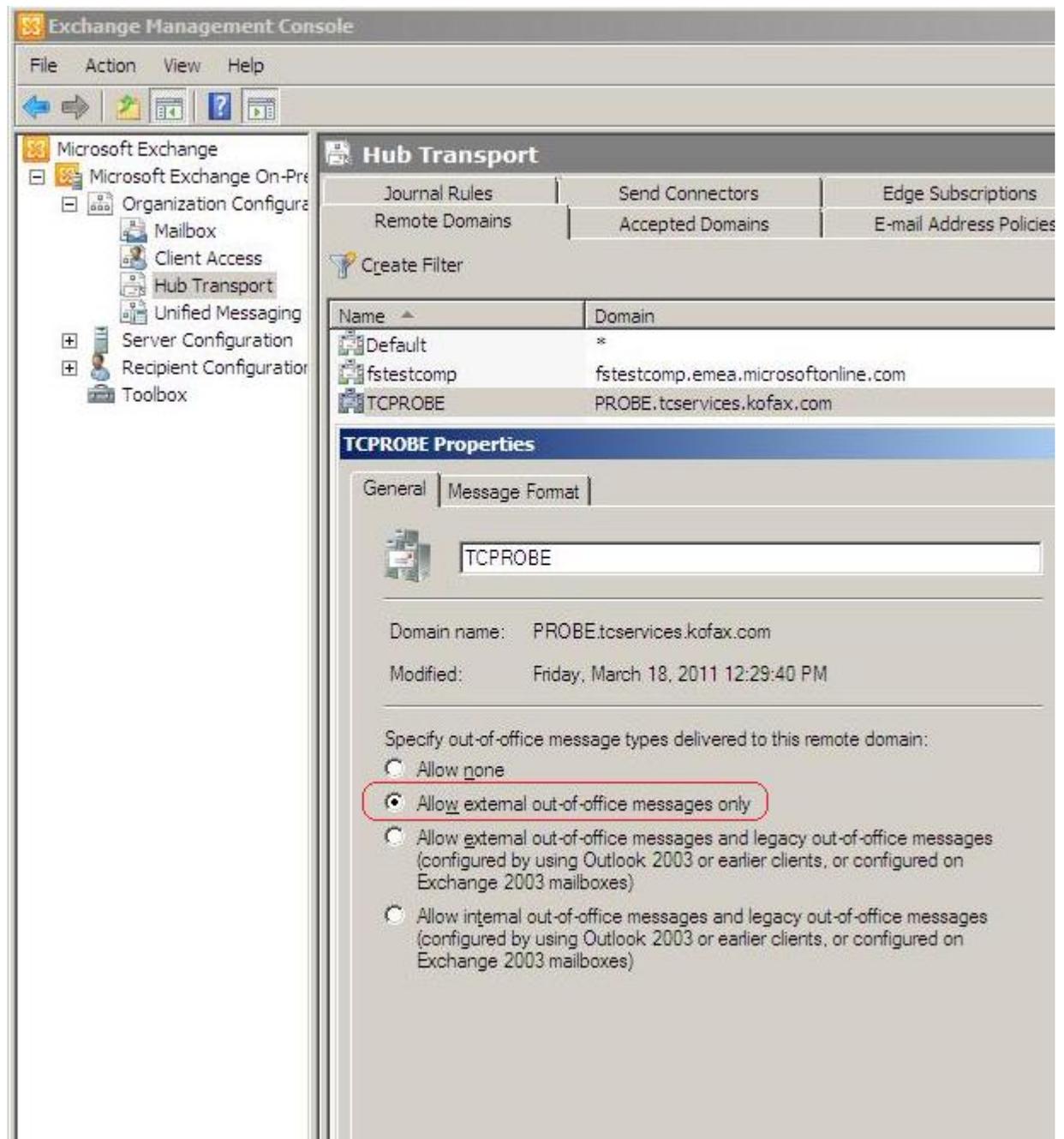
#### **Exchange 2003**

Restrictions for messages sent to the internet are configured via Exchange System Manager below Global Settings | Internet Message Formats. “Allow out-of-office responses” should be enabled for the originator domain of the probe message.



### **Exchange 2007 and 2010**

Restrictions for messages to the internet are configured via Exchange Management Console, Remote Domains properties. "Allow external out-of-office messages only" should be enabled for the originator domain of the probe message.



## 8.8.2 Rule-Based Replies from MS Exchange

As an alternative to simple out-of-office messages, you can use MS Outlook to configure more complex messaging rules. Thus, you do not need a dedicated mailbox for probe replies, because you can define exact criteria for messages that trigger an automatic reply. For instance, you can create a reply rule for messages with subject “probe message”.

In order to receive probe replies via TC/LINK-MX7, there must be a dedicated TCOSS service for TC/Probe (see section 8.3).

### 8.8.2.1 Outlook Client

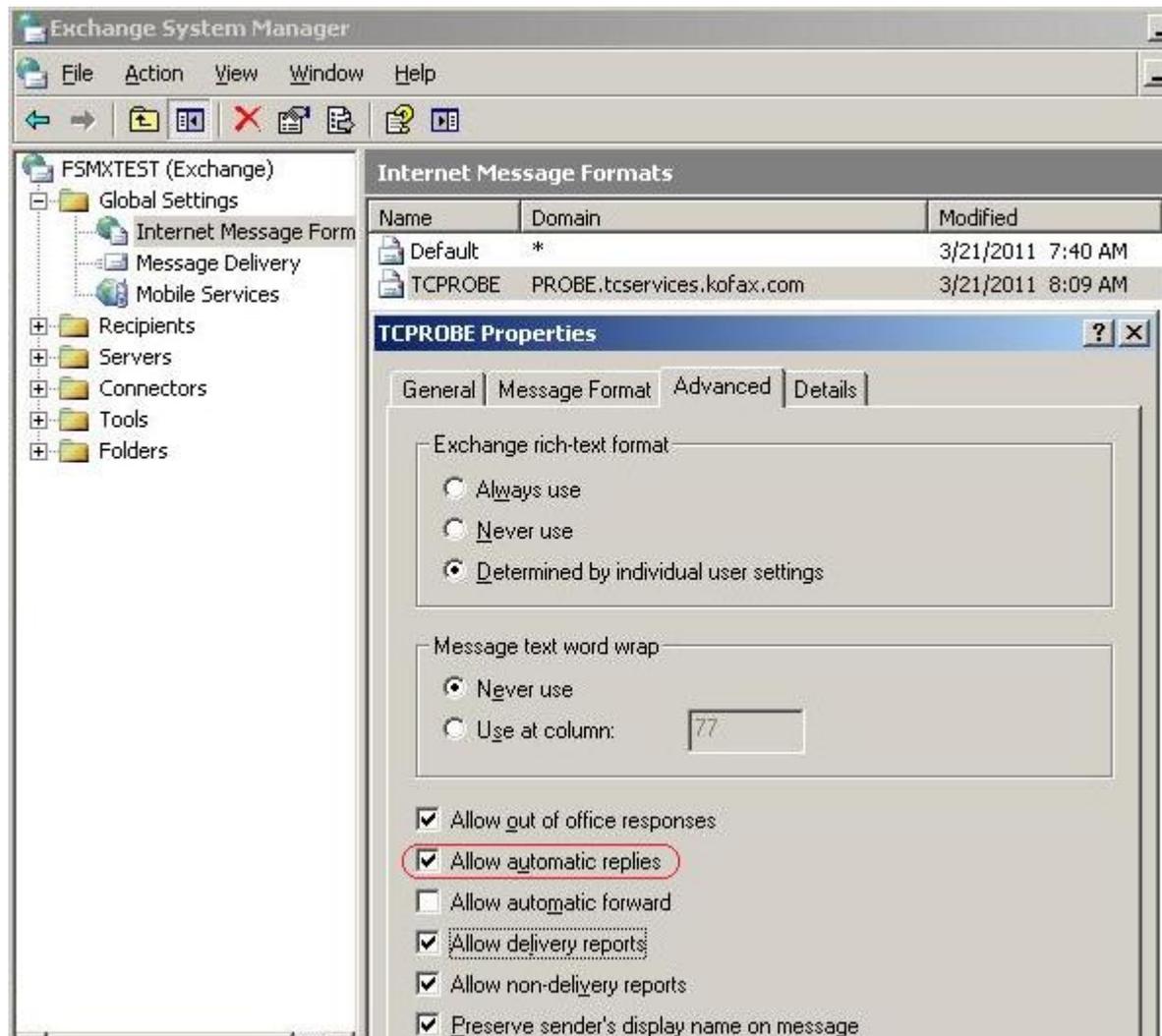
Menu item **Tools | Rules and Alerts** invokes the Rules Wizard. Create a new rule and choose option “Start from a blank rule | Check messages when they arrive”. After selecting the conditions that invoke the rule (e.g. subject is “probe message”), choose the action “have server reply with a specific message”. Edit the message, skip the exceptions and save the new rule.

### 8.8.2.2 Exchange Server

By default, sending of rule-based automatic messages is allowed only inside the Exchange organization.

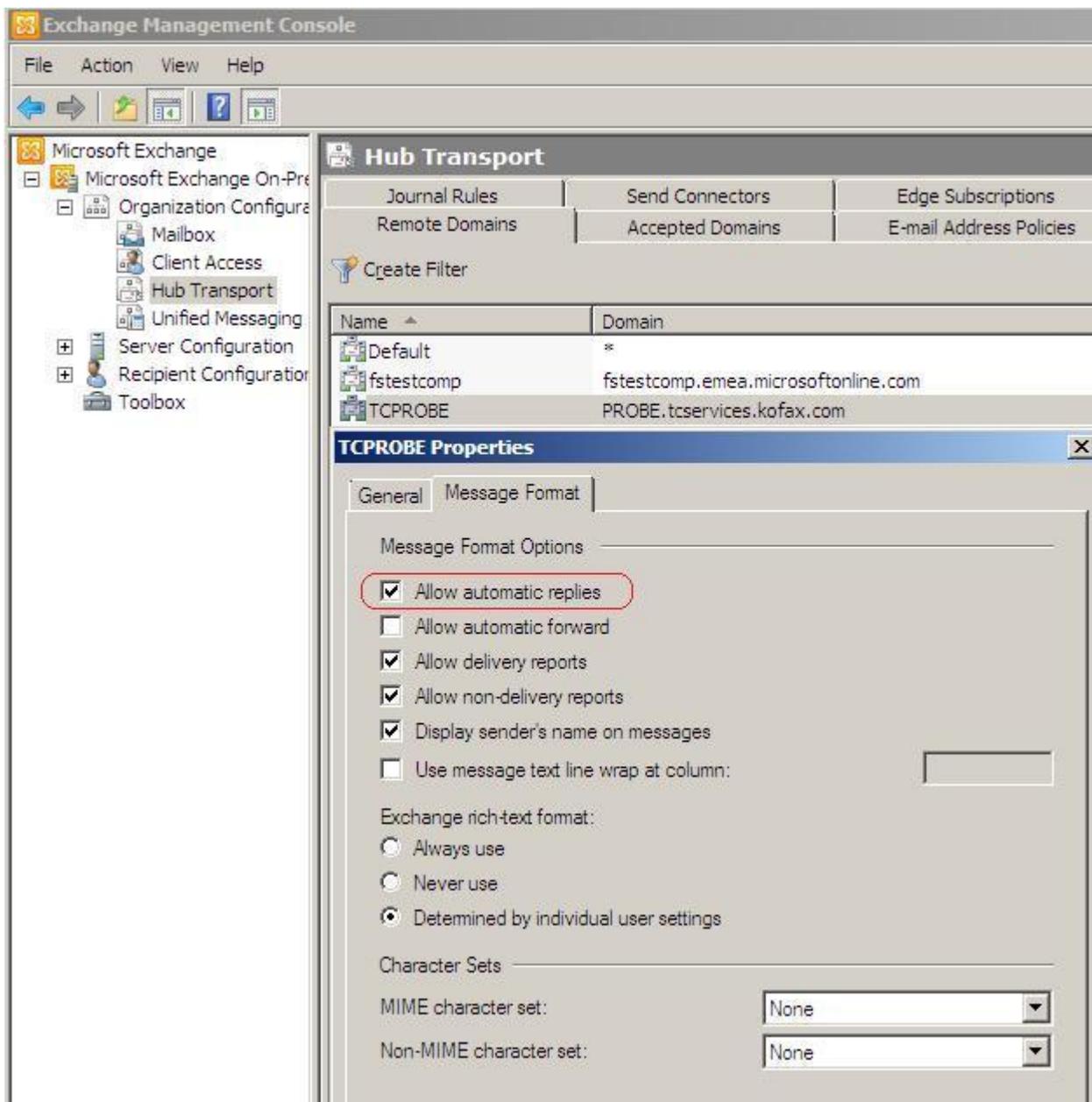
#### Exchange 2003

To enable rule-based automatic replies for SMTP-based links connected to Exchange 2003, open the Internet Message Formats list via Exchange System Manager. The screen shot below shows how automatic replies can be enabled for probe messages, assuming that PROBE is the dedicated TC/Probe service and tcservices.kofax.com is the link domain of TC/LINK-MX7.



### Exchange 2007 and 2010

To enable this feature for probe messages received via TC/LINK-MX7, edit the remote domain settings via Exchange Management Console. The screen shot below shows how automatic replies can be enabled for probe messages, assuming that PROBE is the dedicated TC/Probe service and tcservices.kofax.com is the link domain of TC/LINK-MX7.



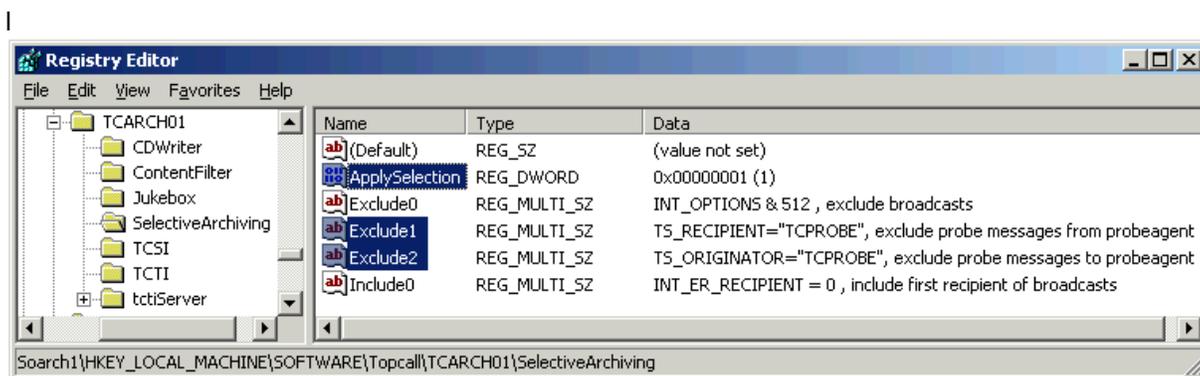
## 8.9 Configuring TC/Archive to Ignore Probe Messages

To prevent that the messages are stored in the TC/Archive, use selective archiving and exclude all messages from and to the Probeagent user.

Example:

```
Exclude1=TS_RECIPIENT="TCPROBE"
```

```
Exclude2=TS_ORIGINATOR="TCPROBE"
```



## 8.10 Configuring the Collation for the Database

It is possible to define the collation (character set and comparison style) per database.

TC/Probe Setup (and also TC/Report Setup) let you enter the collation that shall be used for the TC/Report database. Please note that this only has effect when creating a new database. If the database already exists, the collation will not be changed.

The SQL Server Books Online holds more information about collations. This section only mentions settings that can be used with TC/Report.

In a database created by KCS Setup version 9.2 or above, string columns are defined as nvarchar. Therefore, the database collation affects only sort order and sensitivity.

### **Syntax for collation names:**

*CollationDesignator\_CaseSensitivity\_AccentSensitivity[\_KanatypeSensitive [\_WidthSensitive ] ] | \_BIN*

*CollationDesignator*: Defines the alphabet or language whose sorting rules are applied when dictionary sorting is specified, and the code page that is used for storing data of type varchar or char.

*CaseSensitivity*: **CI** specifies case-insensitive, **CS** specifies case-sensitive.

*AccentSensitivity*: **AI** specifies accent-insensitive, **AS** specifies accent-sensitive.

*KanatypeSensitive*: **Omitted** specifies case-insensitive, **KS** specifies kanatype-sensitive.

*WidthSensitivity*: **Omitted** specifies case-insensitive, **WS** specifies case-sensitive.

*BIN*: Specifies the binary sort order is to be used.

To get a complete list of collations supported by SQL Server, run the following TSQL query:

```
SELECT Name, Description FROM fn_helpcollations()
```

### **For new databases, you can use any collation.**

For databases created with KCS Setup versions prior to KCS 9.2, the collation must match the local Windows code page and the KCS code page:

CollationDesignator	Windows Codepage	TCOSS Codepage	Supported Windows Locales
Albanian	1250	1	Albanian
Chinese_PRC	936	936	Chinese (Hong Kong S.A.R.), Chinese (People's Republic of China), Chinese (Singapore)
Chinese_PRC_Stroke	936	936	Stroke sort with Chinese (PRC)
Croatian	1250	1	Croatian
Czech	1250	1	Czech
Danish_Norwegian	1252	0	Danish, Norwegian (Bokmål), Norwegian (Norsk)
Finnish_Swedish	1252	0	Finnish, Swedish
French	1252	0	French (Belgium), French (Canada), French (Luxemburg), French (Standard), French (Switzerland)
Georgian_Modern_Sort	1252	0	Modern Sort with Georgian
German_PhoneBook	1252	0	PhoneBook sort with German
Greek	1253	1253	Greek
Hungarian	1250	1	Hungarian
Hungarian_Technical	1250	1	Hungarian
Icelandic	1252	0	Icelandic
Japanese	932	932	Japanese
Latin1_General	1252	0	Afrikaans, Basque, Catalan, Dutch (Belgium), Dutch (Standard), English (Australia), English (Britain), English (Canada), English (Caribbean) English (Ireland), English (Jamaican), English (New Zealand), English (South Africa), English (United States), Faeroese, German (Austria), German (Liechtenstein), German (Luxembourg), German (Standard), German (Switzerland), Indonesian, Italian, Italian (Switzerland), Portuguese (Brazil), Portuguese (Standard)
Mexican_Trad_Spanish	1252	0	Spanish (Mexican), Spanish (Traditional Sort)
Modern_Spanish	1252	0	Spanish (Argentina), Spanish (Bolivia), Spanish (Chile), Spanish (Colombia), Spanish (Costa Rica), Spanish (Dominican Republic), Spanish (Ecuador), Spanish (Guatemala), Spanish (Modern Sort), Spanish (Panama), Spanish (Paraguay), Spanish (Peru), Spanish (Uruguay), Spanish (Venezuela)
Polish	1250	1	Polish
Romanian	1250	1	Romanian
Slovak	1250	1	Slovak
Slovenian	1250	1	Slovenian

**Example:**

Use Greek\_CI\_AS for Greek, Case Insensitive, Accent Sensitive.

## 8.11 Database Upgrade for Unicode Support

If the database tables are created by the Setup of KCS 9.2 or higher, most string columns are of type nvarchar, so that all characters of the UTC-16 (Unicode) range can be stored.

Older databases use varchar columns and can only store string data matching the code page of the Fetch Agent computer.

KCS Setup installs tools for migrating the old database to a new Unicode-enabled database. The new database is filled with information from the existing database. After successful migration, TC/PROBE uses the new database.

### 8.11.1 Scenario 1: TCMROBE and TCMREPORT Share the Same Database

- Upgrade TCMROBE and TCMREPORT via the latest KCS setup (9.2 or higher).
- Invoke TCMREPSETUP in interactive mode, as described in the TCMREPORT Tech Manual.

### 8.11.2 Scenario 2: TCMROBE Uses Its Own Database

- Upgrade TCMROBE via the latest KCS setup (9.2 or higher).
- Invoke TCMROBESSETUP in interactive mode, as described in this section.

Before migration, stop all applications that access the existing database.

Optionally, you can create the new database manually. In this case, you have to give the login currently used by TCMROBE “db\_owner” permissions on the new database.

Log on to the TCMROBE computer with an administrative account. Open a command prompt and change to directory C:\TOPCALL\SHARED.

Start TCMROBESSETUP in interactive mode by typing:

```
TCMROBESSETUP TCMROBE -i  
(i for Interactive mode)
```

**Probe Database Management**

Task:  
Task: Create new database and copy data

Database:  
New Database: TCPROBE2

Logon Credentials:  
Enter the credentials of a SQL Server user with the following roles:  
\* db\_datareader for database 'TCPROBE'  
\* db\_creator for database 'master'

User ID: sa  
Password: \*\*\*\*\*

Parameters:  
Folder: C:\TCPROBE

Next Estimate DB size Exit

The program offers two tasks:

- Create new database and copy data  
For this option you need a SQL server user with **db\_creator** permissions. The user must also have read permissions for the productive database.
- Copy data into prepared database  
For this option you need an already existing database and a SQL server user with **db\_owner** permissions for it. The user must also have read permissions for the productive database.

**Note:**

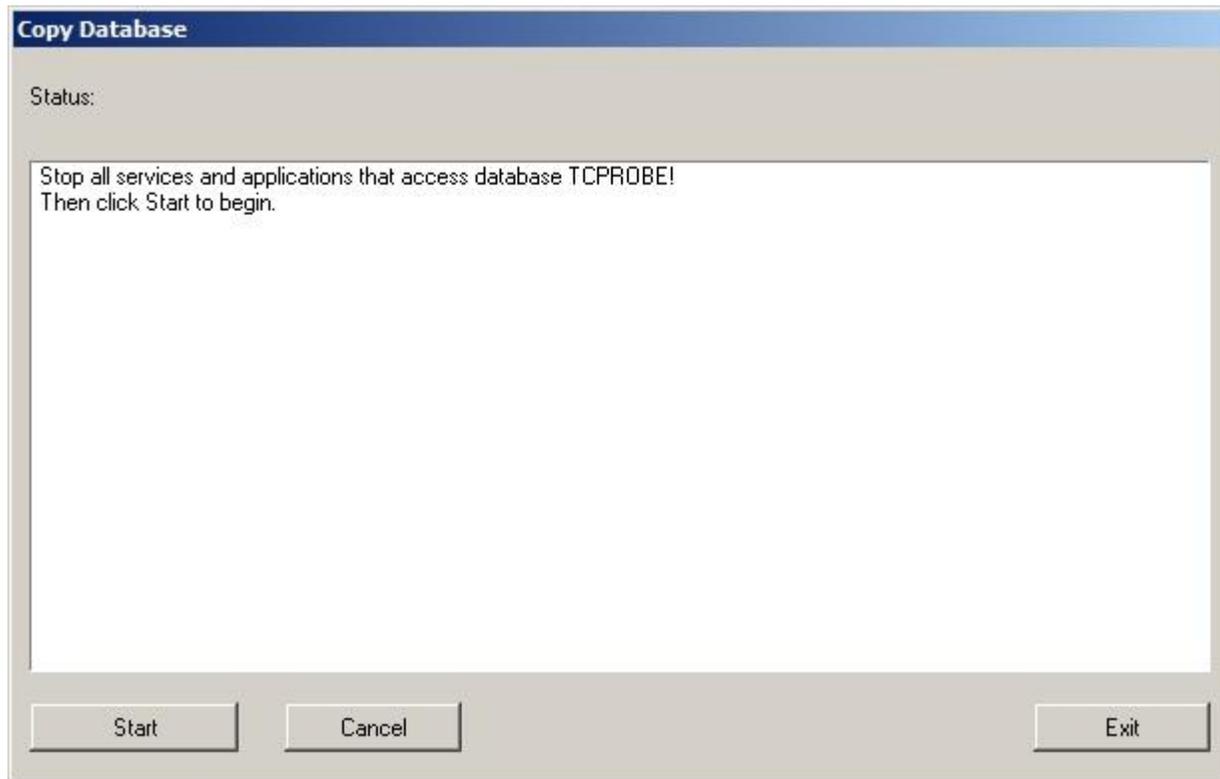
The credentials entered here are used only for creating and filling the new database. TCPROBE will still use the same SQL Server login as with the existing database.

For both options, enter the name of the new database. For creating the database, enter also the folder (on the SQL server) where the database files shall be created.

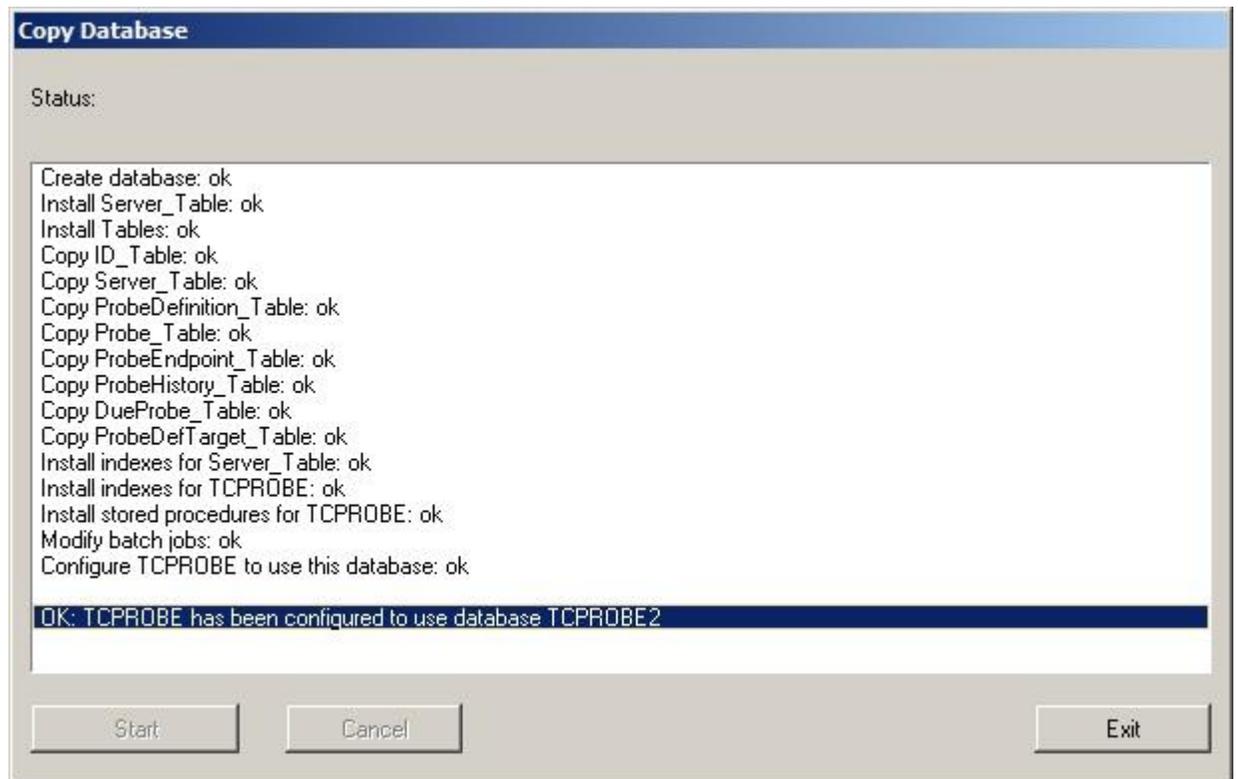
At the bottom of the dialog, there is a button to calculate the estimated size of the new database.

Click **Next** to proceed. The “Copy database” window opens.

Click **Start** to start the database migration.



The major steps of the migration are shown in the window.



Once the final OK is displayed in the list, TC/PROBE is configured to use the new database.

Start TCPPROBE after successful migration.