Kofax Communication Server

Messaging Analyzer Technical Manual

Version: 10.2.0

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1. About Messaging Analyzer (TC/MA)

Messaging Analyzer (TC/MA) integrates the Kofax Communication Server with the product OmniAnalyser from HyperSoft.

Two software modules provide information to OmniAnalyser:

- The Tracking Agent provides detailed information about individual messages that were processed by Kofax Communication Server.
- The Directory Import component can be used to import KCS user profile information into the OmniAnalyser database.

A rich set of OmniAnalyser standard reports is made available for analysis of KCS messaging.

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.

1.1 System Overview

The following drawing shows the software components involved in a typical simple installation (one TCOSS instance only).

KCS specific software modules are shown in blue color:

- TC/Report Fetch Agent (using the TCREPORT database)
- TC Tracking Component (for message tracking)
- Directory Import Component (for user profile import)
- TCOSS server

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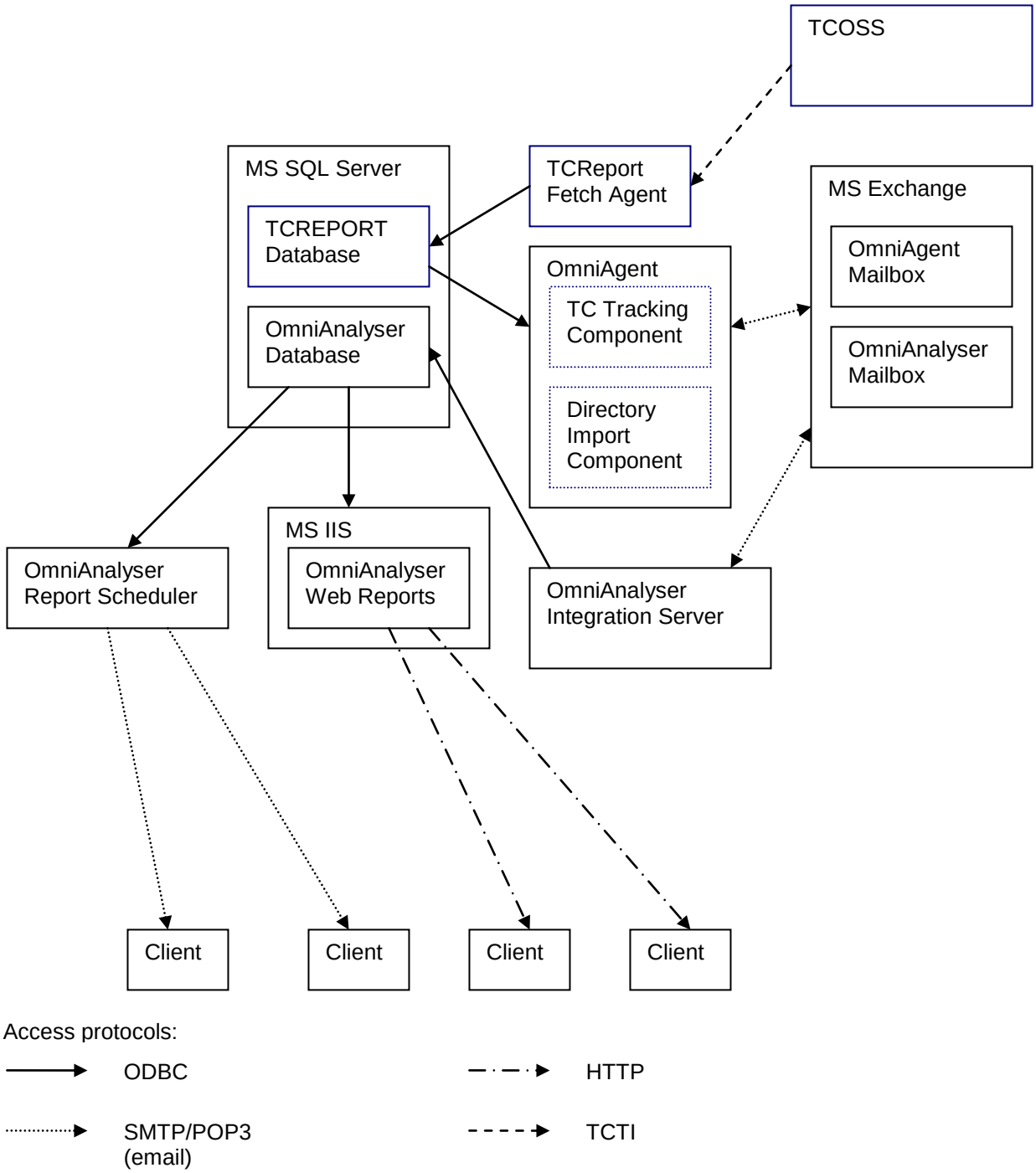

Reporting components from HyperSoft

For TC/MA, you need the following software from HyperSoft:

- HyperSoft OmniAnalyser, Integration Server, Enterprise Edition
- HyperSoft OmniAnalyser, Agent, TOPCALL Connection

From a technical point of view, these two packages contain the following components:

OmniAnalyser Integration Server:

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Collects message tracking information retrieved via email from the OmniAgent processes. Consolidates this information and stores it in the OmniAnalyser database.

OmniAnalyser.exe can be installed as a service.
For configuration or operator intervention, OmniAnalyser can also be started as an interactive application.

OmniAgent:

OmniAgent reads information from a messaging server and sends it to the OmniAnalyser Integration Server via email.

OmniAgent can use several different components (DLLs) to retrieve information from the monitored server. Examples for component types: message tracking for different mail systems, directory import, WMI monitoring, virus scan, etc.

OmniAgent for TOPCALL (as available from HyperSoft) comes with 2 components:
TOPCALL Component: collects KCS messaging information
Directory Import Component: collects KCS user profile information

OmniAnalyser Web Reports:

Web site, based on Microsoft Internet Information Server. You can access all reports via LAN or Internet from this web site.

OmniAnalyser Database:

An SQL database where the information used for reporting is stored (MS SQL Server).
The TC/Report database can be on the same SQL server as the OmniAnalyser database.

OmniAnalyser Report Scheduler:

Provides scheduled reports that can be stored or sent via email.

TOPCALL Component (also called TC Tracking Component in this document):

This is a DLL (TCHSCMP.DLL) used by OmniAgent. OmniAgent receives requests for message history from the OmniAnalyser Integration Server. OmniAgent uses this DLL to retrieve the requested information from the TC/Report database and then sends it to OmniAnalyser.

Directory Import Component

This is a DLL called by OmniAgent. OmniAgent can periodically send user profile information to the OmniAnalyser Integration Server. OmniAgent uses this DLL to retrieve the user profile information from the TC/Report database.

It is also possible to import directory information interactively from the OmniAnalyser console (using the same DLL).

Microsoft Server Software

MS Exchange Server (optional):

Communication between OmniAnalyser Integration Server and OmniAgent is done via email. The mailboxes for OmniAnalyser and OmniAgent can be on a MS Exchange server or on another mail server that is accessible via SMTP/POP3.

MS SQL Server:

The databases for OmniAnalyser and TC/Report must be on an MS SQL Server.
The OmniAnalyser database always uses the default collation defined for MS SQL Server.

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Therefore, the TC/Report feature of using a non-default collation for the TCREPORT database cannot be used with TC/MA. Even if both databases are on a different server, they must use the same character set.

MS Internet Integration Server (IIS):

The OmniAnalyser Web Reports need MS IIS version 4.0 or above.

KCS Applications

Kofax Communication Server:

Message history and user profile information from the Kofax Communication Server (TCOSS) will be imported to the OmniAnalyser database.

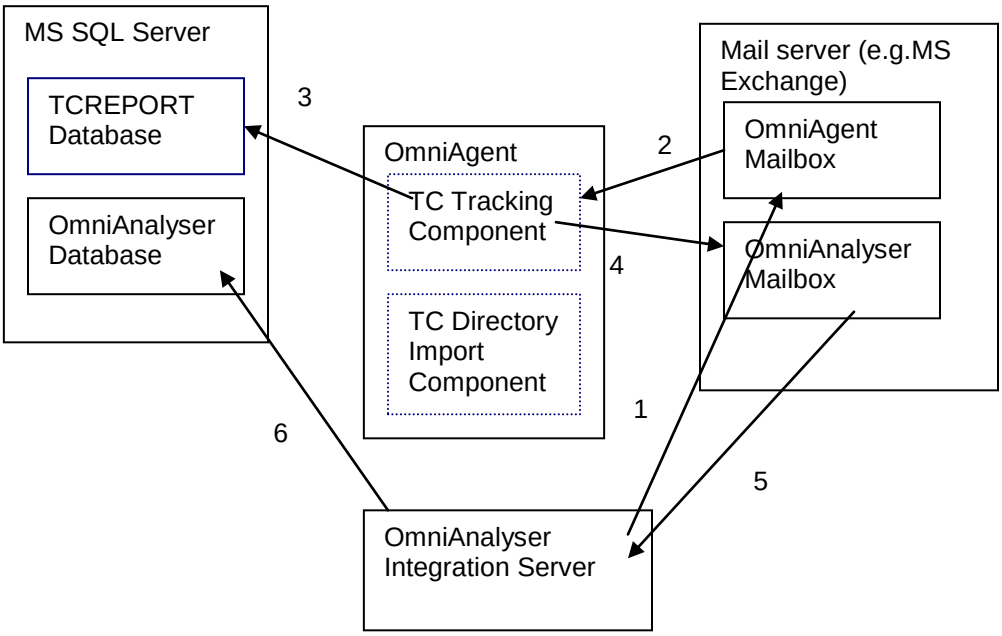
TC/Report Fetch Agent:

TC/Report collects message history and user profile information from the TCOSS server and stores it in its own database (TC/Report database).

TC/Report Database:

The TC/Report database is based on Microsoft SQL Server or MSDE (MSDE databases are limited to 2 GB size). The TC/Report database can be on the same SQL server as the OmniAnalyser database.

1.2 Message Flow (OmniAnalyser Tracking Request)



1) OmniAnalyser sends a tracking request mail to OmniAgent.
   If OmniAnalyser runs as a service, this is done automatically once a day (request information for the previous day).
   It is also possible to send a tracking request manually via the OmniAnalyser GUI (menu item “Send Requests”). Then you may specify any date interval for the request.

2) OmniAgent runs as a service and checks its mailbox periodically. It reads the tracking request mail and uses the TC Tracking Component DLL for processing the request.

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3) For every requested day, the TC Tracking Component DLL reads messaging information from the TCREPORT Database and writes the information into a text file. This text file is then compressed to a ZIP file and packed into a tracking response mail.

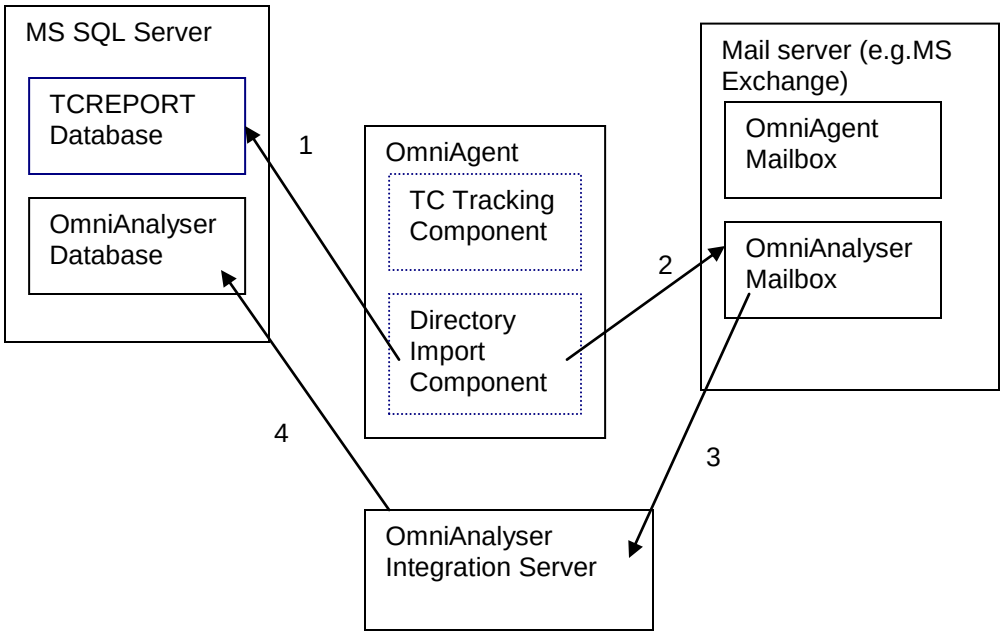
   If configured, the DLL creates an additional mail with subject “Topcall billing response” for every day. The billing response contains KCS-specific messaging information, like costs, cost center and number of pages. This information is currently not available in the reports, but will be available in a future version of OmniAnalyser Web Reports.

4) OmniAgent sends the response mails to the OmniAnalyser mailbox.

5) OmniAnalyser reads its mailbox. If OmniAnalyser runs as a service, this is done automatically in configurable time intervals. You can also force OmniAnalyser to read its mailbox via the OmniAnalyser GUI (menu item “Get Responses”).

6) OmniAnalyser reads the messaging information from the tracking responses and stores it in the OmniAnalyser database.

1.3 Message Flow (Directory Import)



1) OmniAgent (Directory Import Component) reads user information from the TCREPORT database. This is done in regular intervals (configured via the OmniAgent Manager).

2) User information is packed into a ZIP file and sent via email to the OmniAnalyser Mailbox.

3) OmniAnalyser reads its mailbox. If OmniAnalyser runs as a service, this is done automatically in configurable time intervals. You can also force OmniAnalyser to read its mailbox via the OmniAnalyser GUI (menu item “Get Responses”).

4) OmniAnalyser deletes existing user information (about this type of server) in the OmniAnalyser database and then stores the new information retrieved from the ZIP file.

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1.4 Supported Configurations

This chapter shows how the components of TC/MA (TC/Report, OmniAnalyser, TC Tracking Component, TC Directory Import Component) can be combined to fit for several configuration scenarios.

Configuration	Supported
Single TCOSS server (1 customer)	Yes
Single TCOSS server (several customers)	Yes
Tandem TCOSS server (1 customer)	Yes
Tandem TCOSS server (several customers)	Yes
ASP Systems with media servers	Yes
Least Cost Routing Servers	Yes
Several TC/Report databases	Yes

In a standard installation, there is one OmniAnalyser database per customer. Standard OmniAnalyser reports are based on a single OmniAnalyser database. Thus, every customer can view only his own messaging statistics.

Typically, every customer has his own TCOSS instance. This can be a standalone TCOSS server or a TCOSS instance on an ASP storage server. With the ASP storage server concept, the customer can use shared or dedicated channels on one or more media servers.

There might also be scenarios where a customer owns several TCOSS instances, e.g. a Least Cost Routing system consisting of several nodes.

On the other hand, an ASP might host several customers on a single TCOSS instance.

An application service provider that hosts several customers can use the product OmniContext to create reports spanning several customer databases.

As an alternative, the ASP can use a single OmniAnalyser database for all customers and give preprocessed reports to his customers.

Media servers:

In an ASP environment, a message can enter or leave the system via a media server.

It is possible to track media server events in a way that media servers show up as normal servers in OmniAnalyser. You can filter for messages that passed the media server, via the Servers Filter.

Note: No send orders or log entries are fetched from the media server. This is only a different way of classifying information fetched from the storage server.

A disadvantage of this concept is that you need a separate KCS Tracking Agent for every media server. Therefore, this feature is only optional.

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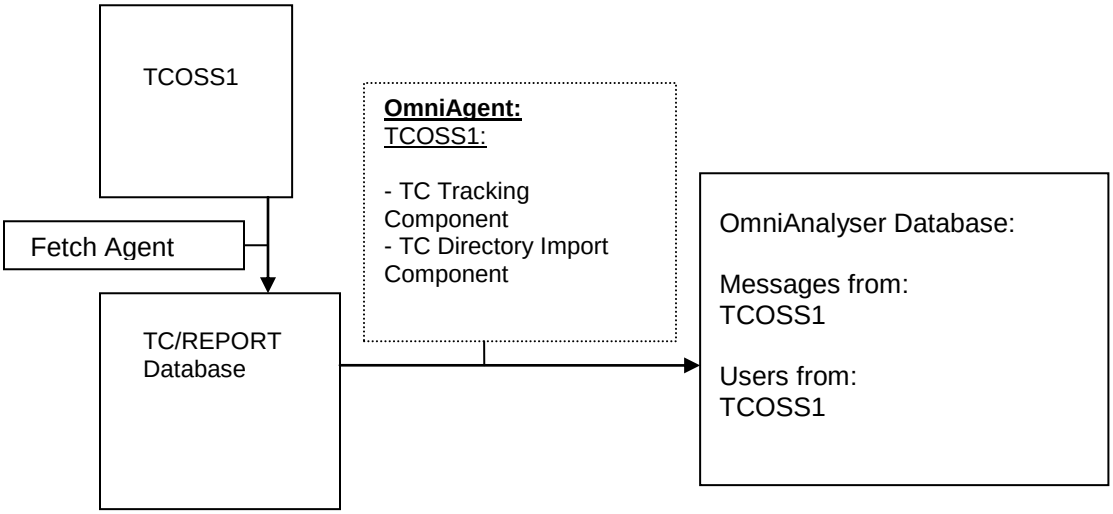
1.4.1 TCOSS Instance Belongs to One Customer



In this example, TCOSS1 is a TCOSS instance that belongs to 1 customer.
A single TC/Report database holds messaging events and user profiles from TCOSS1.
No media servers are configured for TC/Report.

On OmniAnalyser, you configure one server (TCOSS1).
A single OmniAgent installation is needed, with one server defined (TCOSS1) and 2 components for this server: TC Tracking Component, TC Directory Import Component

If media servers were involved, they only show up as connectors that were used for messaging.

TC Management Console Configuration for Fetch Agent

Server	TCOSS1
Disabled	NO
Fetch Log Entries	YES
Fetch Send Attempts	YES
Fetch Subjects	YES
Fetch Users	YES
Fetch Events	YES
Media Server	NO
CustomerID Field	
Node	A
NodeAlias	

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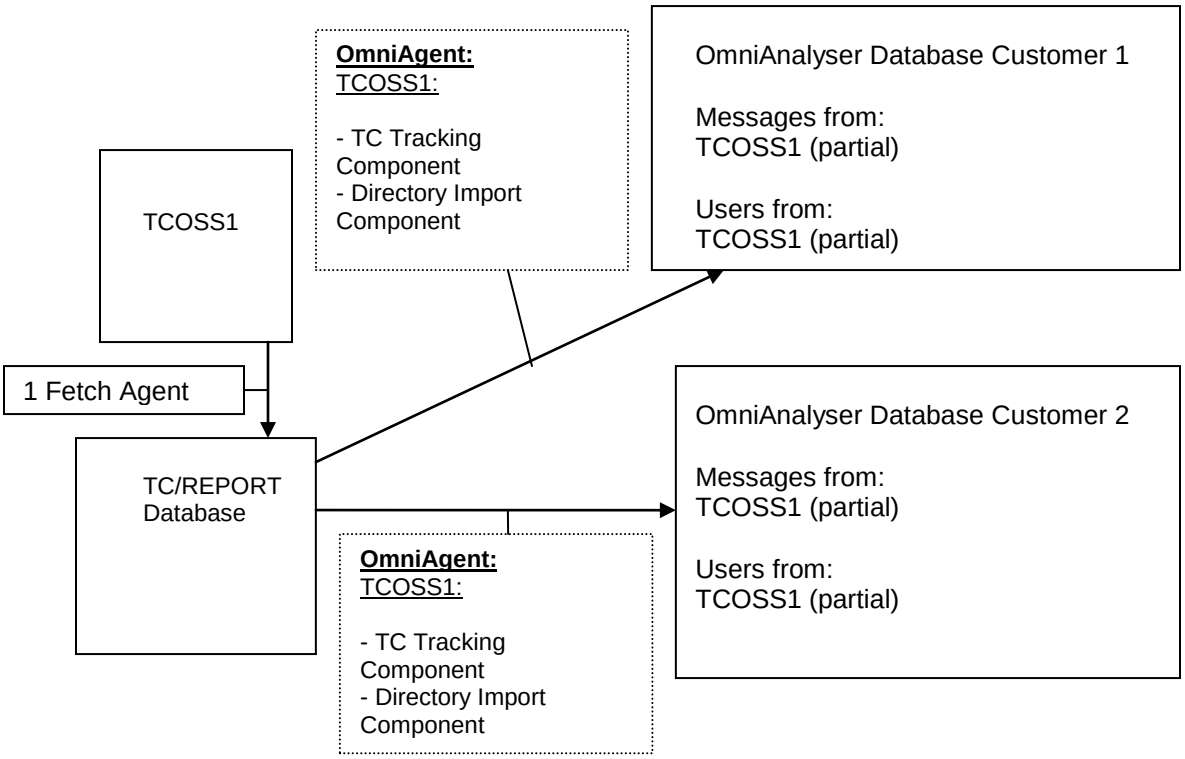
1.4.2 TCOSS Instance Shared by Several Customers



In this example, TCOSS1 is a TCOSS instance shared by two customers. The user profiles on TCOSS1 hold the customer name in the Company field. No media servers are involved.

The TC/Report database holds all messaging events and user profiles.

Every customer has his own OmniAnalyser instance, where message tracking information and user profiles of the customer must be stored. The OmniAnalyser ASP Edition can be used for this purpose: it consists of multiple OmniAnalyser instances (multiple databases) on one machine.

There is one OmniAgent installed for every customer, sending information to the customer's OmniAnalyser instance.

For every customer, the TC Tracking Component must be configured to collect only messaging events concerning this customer (messages sent from or received by one of the customer's users), and the TC Directory Import Component must be configured to import only the users of this customer.

TC Management Console Configuration for Fetch Agent:

Server	TCOSS1
Disabled	NO
Fetch Log Entries	YES
Fetch Send Attempts	YES
Fetch Subjects	YES
Fetch Users	YES
Fetch Events	YES
Media Server	NO
CustomerID Field	Company
Node	A
NodeAlias	

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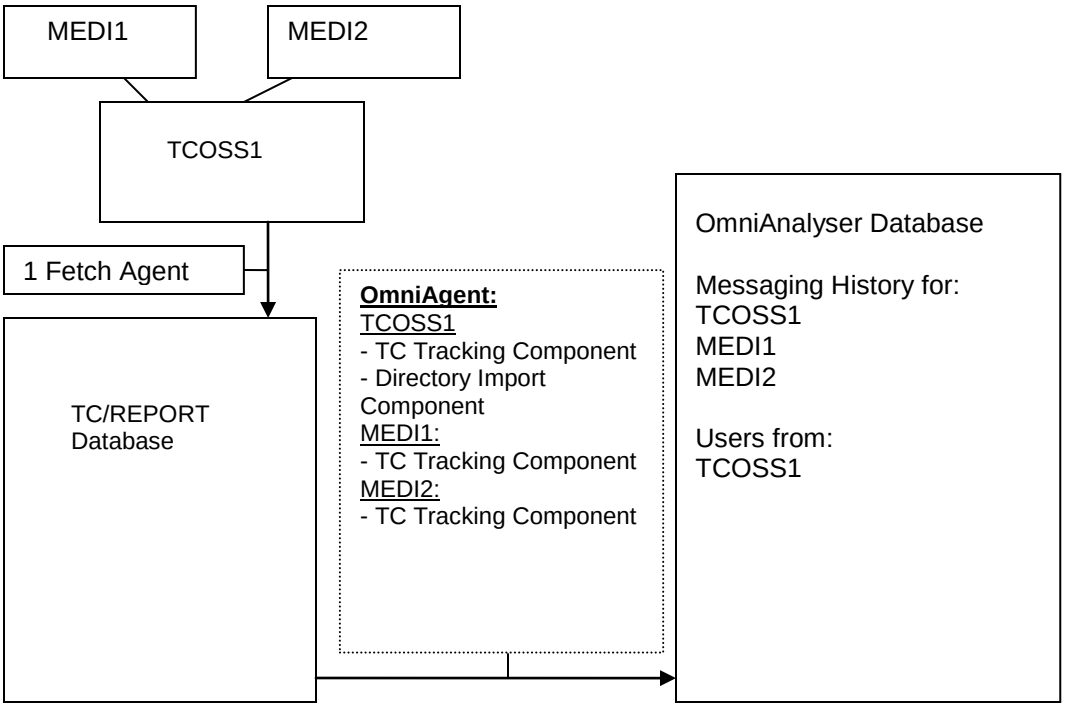
1.4.3 Single Customer, Media Servers



In this example, we have one TCOSS storage server instance with 2 media servers. A single TC/Report Fetch Agent and database is used. The TCOSS instance belongs to one customer.

TC/Report stores messaging events and user profile information from TCOSS1 in the TC/Report database.

In OmniAnalyser, you configure three servers (TCOSS1, MEDI1, MEDI2).
You can use a single OmniAgent installation, with a dedicated TC Tracking Component for every server and a single Directory Import Component (for TCOSS1).
The message tracking information stored in OmniAnalyser database therefore contains messaging events for server TCOSS1 (e.g. Submit and Local Delivery events) and events for the media servers (e.g. Transfer Out via fax or telex line).

TC Management Console Configuration for Fetch Agent:

Server	TCOSS1	MEDI1	MEDI2
Disabled	NO	YES	YES
Fetch Log Entries	YES	NO	NO
Fetch Send Attempts	YES	NO	NO
Fetch Subjects	YES	NO	NO
Fetch Users	YES	NO	NO
Fetch Events	YES	YES	YES
Media Server	NO	YES	YES
CustomerID Field			
Node	A	A	A
NodeAlias			

The configuration for the media servers only tells the Fetch Agent that certain events shall be assigned to the media servers. No short term archive entries or user profiles are fetched from the media servers. Therefore, it is not necessary to configure the additional log entries via config line 19 on the media servers.

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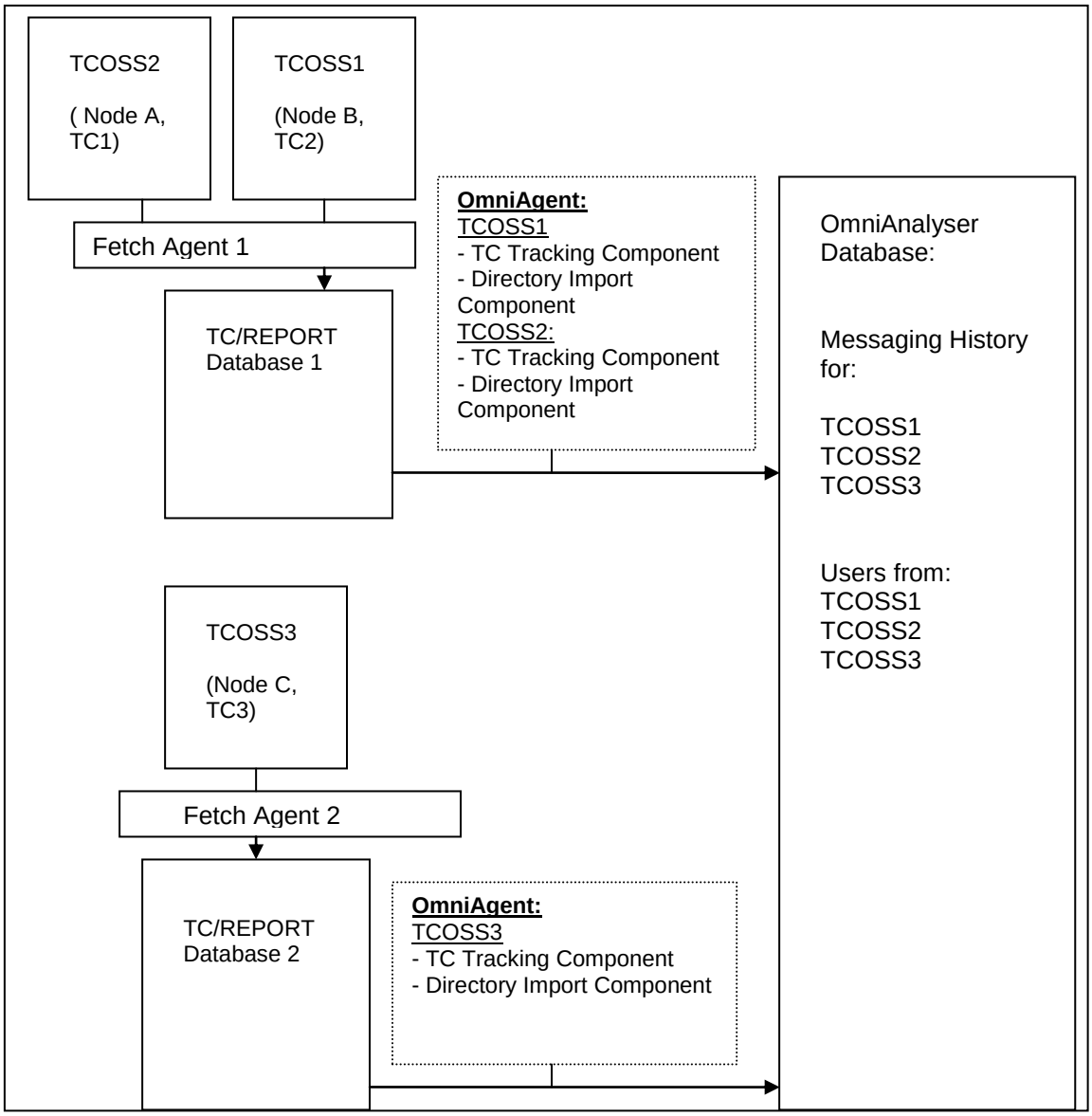
1.4.4 LCR System Belonging to One Customer



In this example, we have a least cost routing system consisting for three nodes (TOCSS1, TCOSS2, TCOSS3). TCOSS1 and TCOSS2 share the same TC/Report instance, TCOSS3 is in a different continent and has its own TC/Report instance and database. Messages that passed several nodes are stored only once (for the entry node).

No media servers are involved.

In OmniAnalyser, there are 3 servers defined.

There are 2 OmniAgent instances installed, one for TCOSS1 and TCOSS2, and one for TCOSS3. For every server, there is a TC Tracking Component and a Directory Import Component configured.

The components know from their configuration, which TC/Report database must be consulted for which TCOSS server.

As several TCOSS instances may have users with the same name, it is necessary to distinguish between user profiles from different TCOSS instances, by prefixing the mailbox name with the TCOSS instance

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name (e.g. DEMOTC.FS instead of FS). This behavior must be explicitly enabled in the configuration of the TC/Report Fetch Agent and the Directory Import component (see section Installation).

In both TC/Report databases, all three servers must be defined, in order to have full information about the components of the LCR system. But servers that are handled by the other TC/Report instance must be set to disabled. The Node Alias for every TCOSS server must be configured as it is used in rr99. This is essential for correct interpretation of user names and addresses, - as all addresses in the KCS message have the Node Alias as a prefix, and the prefix must be removed before the information is stored in the OmniAnalyser database.

TC Management Console Configuration for Fetch Agent 1:

Server	TCOSS1	TCOSS2	TCOSS3
Disabled	NO	NO	YES
Fetch Log Entries	YES	YES	NO
Fetch Send Attempts	YES	YES	NO
Fetch Subjects	YES	YES	NO
Fetch Users	YES	YES	NO
Fetch Events	YES	YES	YES
Media Server	NO	NO	NO
CustomerID Field			
Node	A	B	C
NodeAlias	TC1	TC2	TC3

TC Management Console Configuration for Fetch Agent 2:

Server	TCOSS1	TCOSS2	TCOSS3
Disabled	YES	YES	NO
Fetch Log Entries	NO	NO	YES
Fetch Send Attempts	NO	NO	YES
Fetch Subjects	NO	NO	YES
Fetch Users	NO	NO	YES
Fetch Events	YES	YES	YES
Media Server	NO	NO	NO
CustomerID Field			
Node	A	B	C
NodeAlias	TC1	TC2	TC3

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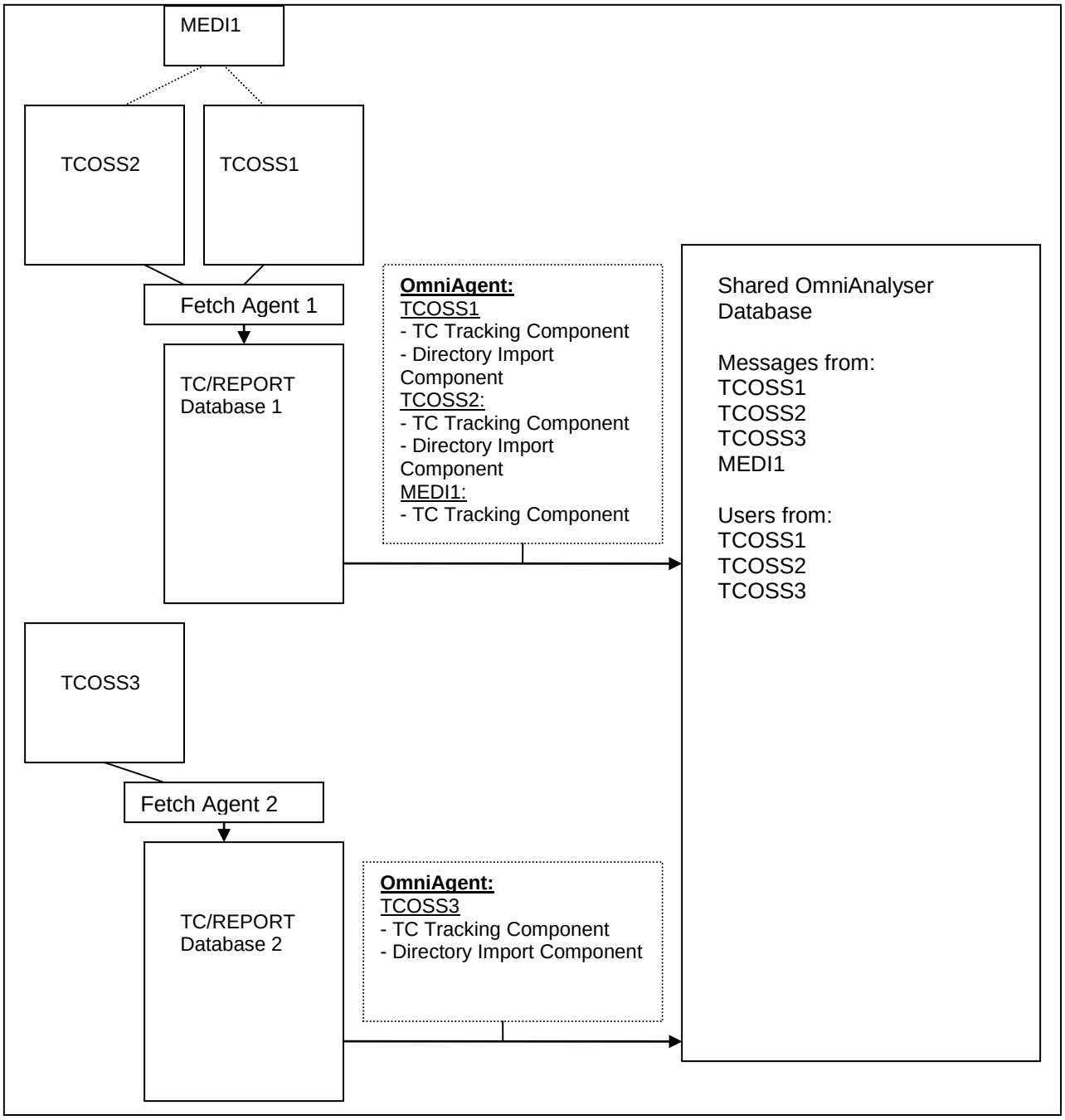
1.4.5 Several Storage + Media Servers per Database



In this example, there are three TCOSS storage server instances and one shared media server. Two TC/Report databases are used: Database 1 holds information from TCOSS1 and TCOSS2, database 2 is used for TCOSS3 only. Event tracking is enabled for the shared media server MEDI1, which is used by TCOSS1 and TCOSS2 only.

In OmniAnalyser, four servers are defined (TCOSS instances 1, 2 and 3, and one media server).

It is enough to have a single OmniAgent installed, with all four servers defined. For better understanding of database access, the above picture shows 2 OmniAgent instances, though.

For every storage server instance, there is a TC Tracking Component and a Directory Import Component configured. For the media server, there is only a TC Tracking Component configured.

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The message tracking information stored in OmniAnalyser database contains records written by different storage server instances.

User profile information from both TC/Report databases is imported into the OmniAnalyser database.
It is necessary to distinguish between user profiles from different TCOSS instances, by prefixing the mailbox name with the TCOSS instance name (e.g. DEMOTC.FS instead of FS).
This behavior must be explicitly enabled in the configuration of the TC/Report Fetch Agent and the dirsync component.

TC Management Console Configuration for Fetch Agent 1:

Server	TCOSS1	TCOSS2	MEDI1
Disabled	NO	NO	YES
Fetch Log Entries	YES	YES	NO
Fetch Send Attempts	YES	YES	NO
Fetch Subjects	YES	YES	NO
Fetch Users	YES	YES	NO
Fetch Events	YES	YES	NO
Media Server	NO	NO	YES
CustomerID Field			
Node	A	A	A
NodeAlias			

TC Management Console Configuration for Fetch Agent 2:

Server	TCOSS3
Disabled	NO
Fetch Log Entries	YES
Fetch Send Attempts	YES
Fetch Subjects	YES
Fetch Users	YES
Fetch Events	YES
Media Server	NO
CustomerID Field	
Node	A
NodeAlias	

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2. OmniAnalyser Standard Reports

With this version of TC/MA, a subset of standard OmniAnalyser 8.7 reports can be used for KCS messaging statistics. Messaging information and user profile data are now imported into the OmniAnalyser database. No changes have been made to the OmniAnalyser database and web reports.

In a second step, there will be new reports optimized for KCS messaging. Description of this second step will be done in a separate document.

This document explains only KCS specific reporting features. All OmniAnalyser Web Reports include a Help button (on the left side of the header line) that leads to detailed information about the purpose and possibilities of the report. For further information, please consult this on-line help.

The screen shots in this section were taken from the OmniAnalyser Web reports.
This web portal shows a tree view with all available report types, grouped by functionality (Service Level, Traffic etc., see list below). You select a report type and can then specify filters for the report. Some filters are only available after pressing the “Advanced Mode” button in the header line of the web page.

After selecting all filters, you click the button “Generate” that is located below the filters property page.
The report results are created and are displayed in a new window of your Internet browser.

This chapter includes screen shots explaining filter settings and others showing report results.

The following standard reports are supported:

Report Group Service Level:

- Service Level
- SLA Targets
- Delivery Time Statistics
- Undelivered Messages
- Delivery Time Problems

Report Group Traffic

- Traffic Dynamics
- Volume Dynamics
- Messages Size Statistics
- User Traffic By Unit
- User Traffic By Unit Regardless Recipients Number
- User Traffic Between Units
- Total Traffic By Unit
- Total Traffic Between Units
- Internet Traffic By Domain
- Traffic Between User Groups And The Internet
- Server Traffic
- Server Connections Topology
- Resource Consumers
- Mails Delay
- Connector Traffic
- Messages
- Undelivered Messages
- Messages With Combined Recipients
- Combined Recipients Statistics
- Average Traffic Statistics

Report Group Servers:

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- Server Traffic
- Server Connections Topology
- Inactive Mailboxes By Server
- Average Message Delay By Server

Report Group Mailboxes

- Address List
- Inactive Mailbox List
- Inactive Mailboxes By Server
- User Traffic By Unit
- User Traffic Between Units

Report Group Internet

- Internet Traffic By Domain
- Traffic Between User Groups And The Internet

Report Group Chargeback

- User Traffic By Unit
- User Traffic Between Units
- Total Traffic By Unit
- Total Traffic Between Units
- Server Traffic
- Connector Traffic

2.1 KCS Features Available in OmniAnalyser Reports

2.1.1 Media Types

OmniAnalyser reports distinguish between internal messages and internet messages.
All messages sent between users of the customer's mail servers are considered as internal messages.
All messages where either the originator or the recipient cannot be mapped to a user mailbox are considered as Internet messages.
When requesting a report, the Internet Filter allows selecting internal messages or internet messages, and including or excluding specific internet domains in the selection.

This makes sense for mail systems like Lotus Notes and MS Exchange, where most external message traffic goes via the Internet. Kofax Communication Servers, on the other hand, are mostly used for other messaging purposes, e.g. fax, SMS, voicemail or connections to various email systems. In this document, these connection types are called media types.
In this version of TC/MA, the media types supported by Kofax Communication Servers are handled like sub-domains of a fictitious internet root domain e.g. "topcall". For example, filtering for domain "fax.topcall" selects in- or outbound fax messages. The fictitious root domain name can be configured in the TC/Report Fetch Agent registry. The names of the sub-domains are not configurable.

The following sub-domains can appear in reports:

Sub domain name	For messages from / to
Fax	Fax channel
Telex	Telex channel
Ttx	Teletex channel
Async	asynchronous channel
Print	LL or LP channel

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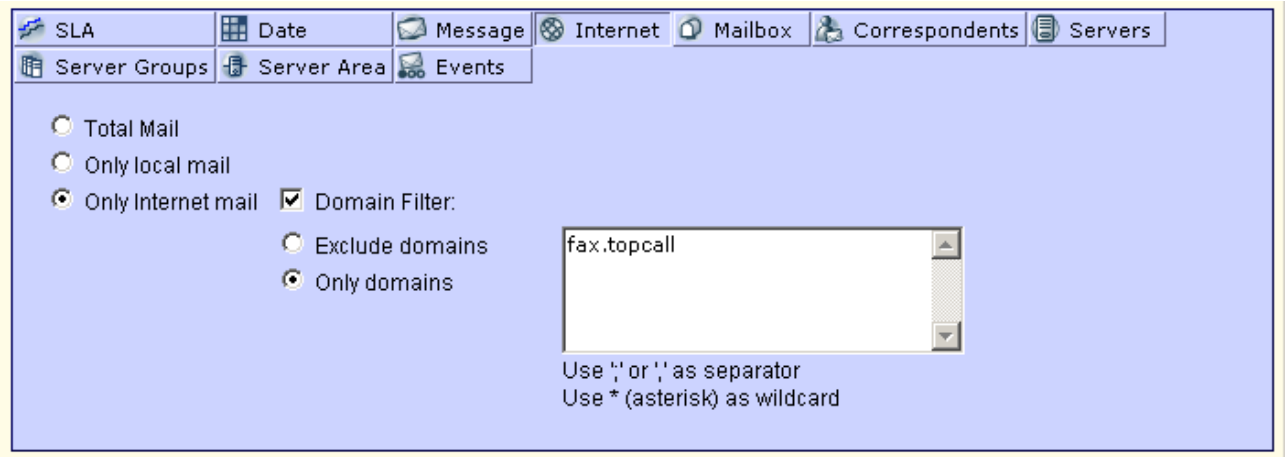
Ocr	TCOSS OCR channel
Tr	Tracer channel
C0	TCOSS C0 channel
Mm	Memo channel
Notes	Lotus Notes
Internal	Internal queues (e.g. RESOLVE, NOTIF). Not for normal users.
Msmail	MSMAIL
Ccmail	CCMAIL
Hpom	HP OpenMail
Host	
Tcfi	File Interface
Exchange	MS Exchange
Nds	GroupWise
Mq	MQSeries
Sapac	SAP (via TC/LINK-AC)
Sapsc	SAP (via TC/LINK-SC)
Internet	Internet (fallback for addresses without domain)
Sms	SMS
x.400	X.400
Voice	VoiceMail, VoiceLink
Pager	Pager
Custom1 to Custom10	Custom media types defined by TCOSS administrator (media type field in queue user profiles, can be set via TCFW)

For messages sent or received via TC/LINK-SM, the real internet domain is stored if possible, and can then be specified in the Internet Filter (e.g. “hotmail.com”).

For TC/LINK-SM messages where it is not possible to find out the real internet domain (e.g. because the address contains no domain, but also for senders who have a KCS shadow user), the fictitious domain internet.topcall is used.

Note: With TCLINK 2.08.01 or above and TCOSS 7.56.03 or above, all messages sent from a mail system connected via TCLINK are stored with the media type corresponding to the link, even if the originator has a KCS shadow user.

Example for Internet Filter:



Specify domain fax.topcall for selecting messages sent or received as fax.

OmniAnalyser standard reports where the Internet filter can be used:

The following list contains all reports where the Internet filter is available.
The header line of the resulting report shows the list of domains specified for filtering, e.g.:

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Only Internet mail is included. Only domain(s): fax.topcall

Report name
Delivery time statistics
Undelivered messages
Delivery time problems
Messages size statistics
User traffic by unit
Total traffic by unit
Internet traffic by domain
Server connections topology
Resource consumers
Mails delay
Messages

OmniAnalyser standard reports that allow grouping by media types:

The report Internet traffic by domain shows message volume grouped by domains:

Specify “Domain” in the domains filter to get grouping by domains.

Internet Traffic By Domain

Time interval: from 05.04.2004 to 11.04.2004.

Only domain(s): *.topcall

Page 1. Currently viewing 1 through 4 of 4 total ite

-	-	-	-	-	
Domain	Incoming Mail	Incoming Volume (MB)	Outgoing Mail	Outgoing Volume (MB)	Ave
tcfi.topcall	10	0,01	3	0,02	
fax.topcall	3	0,10	0	0,00	
exchange.topcall	0	0,00	2	0,00	
sms.topcall	0	0,00	18	0,01	
Total	**13**	**0,11**	**23**	**0,03**	

Traffic between user groups and internet domains:

Example: traffic between mailboxes and internet domains:

Traffic Between Mailboxes and Internet Domains

Time interval: from 05.04.2004 to 11.04.2004.

Page 1. Currently viewing 1 through 4 of 4 total items.

-	-	-	-	-	-
Mailboxes	Display Name	Domains	Sent Mail	Sent Volume (MB)	Average Delivery Time
tom.ms	sdf sdf	sms.topcall	18	0,01	0:00:11
tom.kg	KG	tcfi.topcall	2	0,02	0:01:12
tom.fs_new	FS_NEW	exchange.topcall	2	0,00	0:00:00
tom.fs_new	FS_NEW	tcfi.topcall	1	0,00	0:00:00
Total			**23**	**0,03**	

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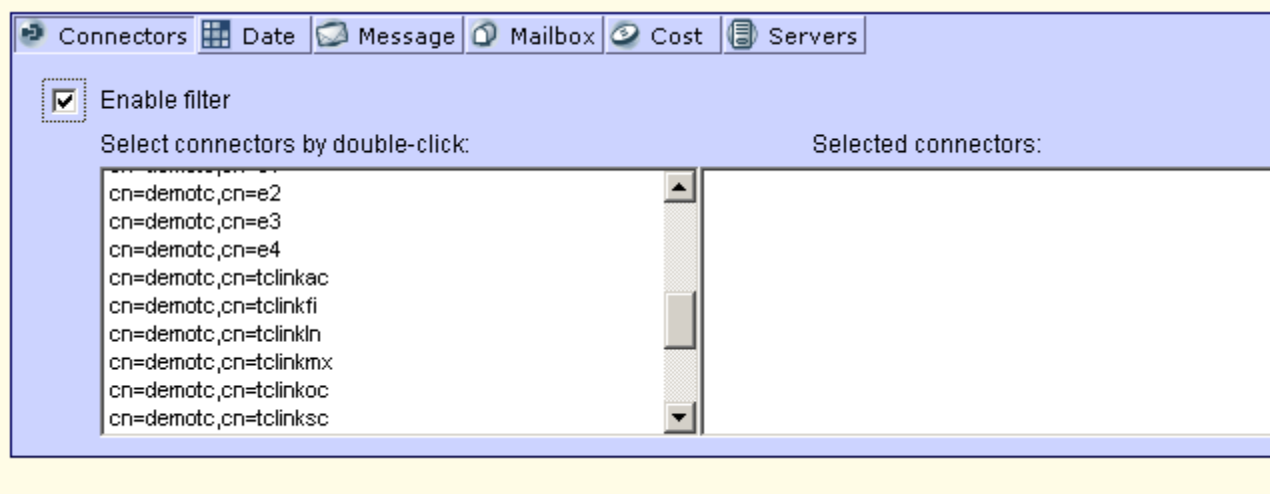
Implementation:

The TC/Report Fetch Agent is responsible for assigning these domain names to sender and recipient addresses. The Fetch Agent maintains a list of hardware channels and their main channel groups for every fetched TCOSS server. This list is built at process start up time, from the TCOSS configuration files, and is then stored in RAM.

Special configuration is needed for correct interpretation of messages passed via an application like TC/VoiceAccess or TC/LINK. The queue users of the application must be assigned a media type via TCFW (version 5.14.00 or above). The sub-domain stored by the Fetch Agent matches the media type of the application's queue.

2.1.2 Applications and Channels

You can use the OmniAnalyser Connectors Filter to select messages that passed specific applications or TCOSS channels. Every entry in the connectors list displayed in this filter corresponds to a TCOSS channel or a logical application name. The list contains only connectors that were used for sending or receiving messages.



The connector name consists of 2 parts:
The first part is the name of the TCOSS server (for applications, this is always the storage server, for channels it might be a media server).
The second part is the name of the application (as defined in the queue user profile) or the channel number.

Note: Application names must be configured via TCFW, by editing the queue user profiles of the applications.

OmniAnalyser Web reports also allow combining several connectors in a connector group. For example, you could build a connector group "TCLINKFI Instances" that holds all TC/LINK-FI instances, or a connector group "Fax Channels" holding all fax channels of a server.
Connector groups are also available in the Connectors filter.

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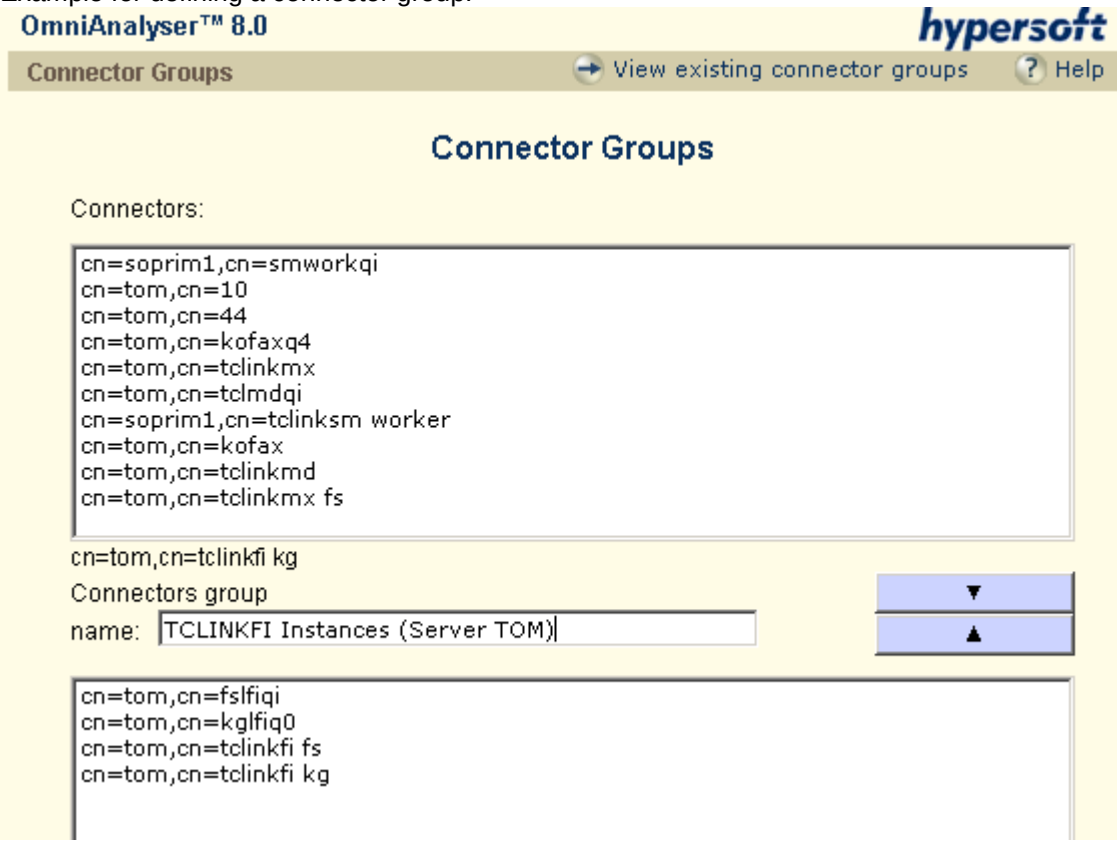
Example for defining a connector group:



<u>OmniAnalyser standard reports where the Connectors filter can be used:</u>

The header line of the resulting report shows that a connector filter was applied but does not mention connector names.

Header line: *"Shows only messages that passed through selected connectors".*

Report
Server Connections Topology
Resource Consumers
Mails Delay
Connector Traffic
Messages

<u>OmniAnalyser standard reports that allow grouping by connectors:</u>

Only the <u>Connector Traffic</u> report shows statistics per connector:

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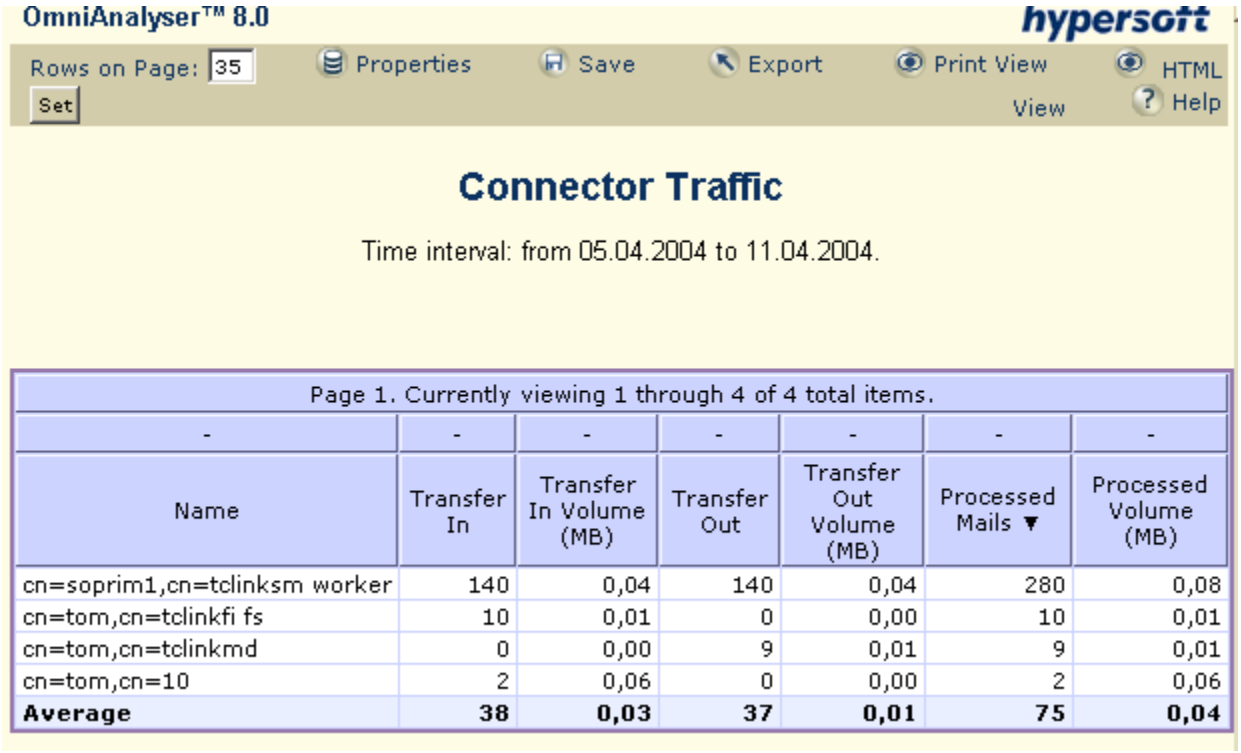


Page 1. Currently viewing 1 through 4 of 4 total items.

-	-	-	-	-	-	-
Name	Transfer In	Transfer In Volume (MB)	Transfer Out	Transfer Out Volume (MB)	Processed Mails ▼	Processed Volume (MB)
cn=soprim1,cn=tclinksm worker	140	0,04	140	0,04	280	0,08
cn=tom,cn=tclinkfi fs	10	0,01	0	0,00	10	0,01
cn=tom,cn=tclinkmd	0	0,00	9	0,01	9	0,01
cn=tom,cn=10	2	0,06	0	0,00	2	0,06
Average	**38**	**0,03**	**37**	**0,01**	**75**	**0,04**

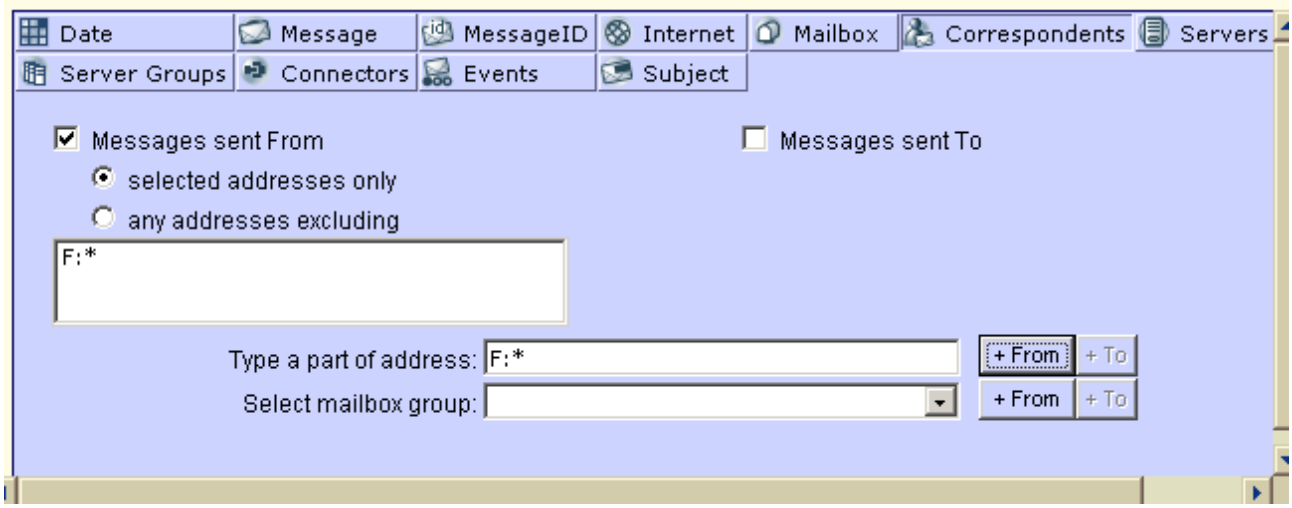
2.1.3 Channel Groups

The OmniAnalyser Correspondents Filter allows filtering for messages by originator or recipient address. You can specify part of the address, a substring search is done.

For external addresses, the OmniAnalyser database holds the complete normalized number (including TCOSS queue prefix). Therefore, you can use the Correspondents filter to select addresses that start with a certain channel or channel group prefix (e.g. F:).

Note: Filtering for addresses that match “F:” ignores all send orders sent directly to a channel instead of channel group F.

Example for Correspondents Filter:



OmniAnalyser standard reports where the Correspondents filter can be used:

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Report
Delivery Time Statistics
Undelivered Messages
Traffic Dynamics
Volume Dynamics
Messages size statistics
User traffic by unit
User traffic between units
Total traffic by unit
Total traffic between units
Server traffic
Server connections topology
Resource consumers
Mails delay
Messages
Average traffic statistics

OmniAnalyser standard reports where addresses are displayed:

Unfortunately, none of the OmniAnalyser standard reports allows grouping by channel groups. Nevertheless, there are several reports that can be grouped by addresses.

Total Traffic By Unit:

Select “Address” in the Address Groups Filter to group report results by address.

OmniAnalyser™ 8.0 hypersoft

Rows on Page: 35 Set | Properties | Save | Export | Graph | Print View | HTML View | Help

Total Traffic By Address

Time interval: from 05.04.2004 to 11.04.2004.

Messages passed at least one of the following servers: TOM.

Page 1. Currently viewing 1 through 15 of 15 total items.						
-	-	-	-	-	-	-
Address	Sent Mail	Sent Volume (MB)	Received Mail	Received Volume (MB)	Average Delivery Time (Out)	Average Delivery Time (In)
tom.ms	18	0,01	0	0,00	0:00:11	-
tom.fs_new	16	0,01	5	0,00	0:00:00	0:00:01
tom.kg	7	0,02	5	0,00	0:00:20	0:00:00
f:85	3	0,10	0	0,00	0:20:12	-
u:+e	0	0,00	1	0,03	-	1:00:00
tom.fs2	0	0,00	2	0,00	-	0:00:00
tom.fs_longusername	0	0,00	6	0,00	-	0:00:00
fslfiqi:someoneelse	0	0,00	1	0,00	-	0:00:00
fsmxqi:ex:administrator	0	0,00	2	0,00	-	0:00:00
kglfiq0:test	0	0,00	2	0,02	-	0:01:12
tclmdqi:+436642052332	0	0,00	13	0,01	-	0:00:10
tclmdqi:+436767714990	0	0,00	3	0,00	-	0:00:14
tclmdqi:+4369910667557	0	0,00	1	0,00	-	0:00:14

Total Traffic Between Units:

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Select “Addresses” in the Address Groups Filter to group report results by addresses.

Total Traffic Between Addresses

Time interval: from 05.04.2004 to 11.04.2004.

Messages passed at least one of the following servers: TOM.

Page 1. Currently viewing 1 through 13 of 13 total items.				
-	-	-	-	-
Origin Addresses	Destination Addresses	Sent Mail	Sent Volume (MB)	Average Delivery Time
tom.ms	tclmdqi:+436642052332	13	0,01	0:00:10
tom.fs_new	tom.fs_longusername	6	0,00	0:00:00
tom.fs_new	tom.fs_new	5	0,00	0:00:01
tom.kg	tom.kg	5	0,00	0:00:00
tom.ms	tclmdqi:+436767714990	3	0,00	0:00:14
tom.fs_new	tom.fs2	2	0,00	0:00:00
tom.kg	kglfiq0:test	2	0,02	0:01:12
f:85	tom.dist	2	0,06	0:00:18
tom.fs_new	fsmxqi:ex:administrator	2	0,00	0:00:00
tom.fs_new	fslfiqi:someoneelse	1	0,00	0:00:00
f:85	u:+e	1	0,03	1:00:00
tom.ms	tclmdqi:+4369910667557	1	0,00	0:00:14
tom.ms	tclmdqi:+4369911895825	1	0,00	0:00:00
Total		**44**	**0,12**	

<u>Internet Traffic By Domain:</u>

Select “Address” in the Domain Filter to get report results grouped by address.

OmniAnalyser™ 8.0 hypersoft

Rows on Page: 35 Set | Properties | Save | Export | Graph | Print View | HTML View | Help

Internet Traffic By Address

Time interval: from 05.04.2004 to 11.04.2004.

Only domain(s): *.topcall
Messages passed at least one of the following servers: TOM.

Page 1. Currently viewing 1 through 9 of 9 total items.						
-	-	-	-	-	-	-
Address	Incoming Mail	Incoming Volume (MB)	Outgoing Mail	Outgoing Volume (MB)	Average Message Size (In)	Average Message Size (Out)
tom.fs_new	10	0,01	0	0,00	600	-
f:85	3	0,10	0	0,00	33.400	-
tclmdqi:+4369911895825	0	0,00	1	0,00	-	800
tclmdqi:+436767714990	0	0,00	3	0,00	-	800
tclmdqi:+4369910667557	0	0,00	1	0,00	-	800
fslfiqi:someoneelse	0	0,00	1	0,00	-	500
fsmxqi:ex:administrator	0	0,00	2	0,00	-	600
kglfiq0:test	0	0,00	2	0,02	-	9.200
tclmdqi:+436642052332	0	0,00	13	0,01	-	700
Total	**13**	**0,11**	**23**	**0,03**	**3.776**	**1.488**

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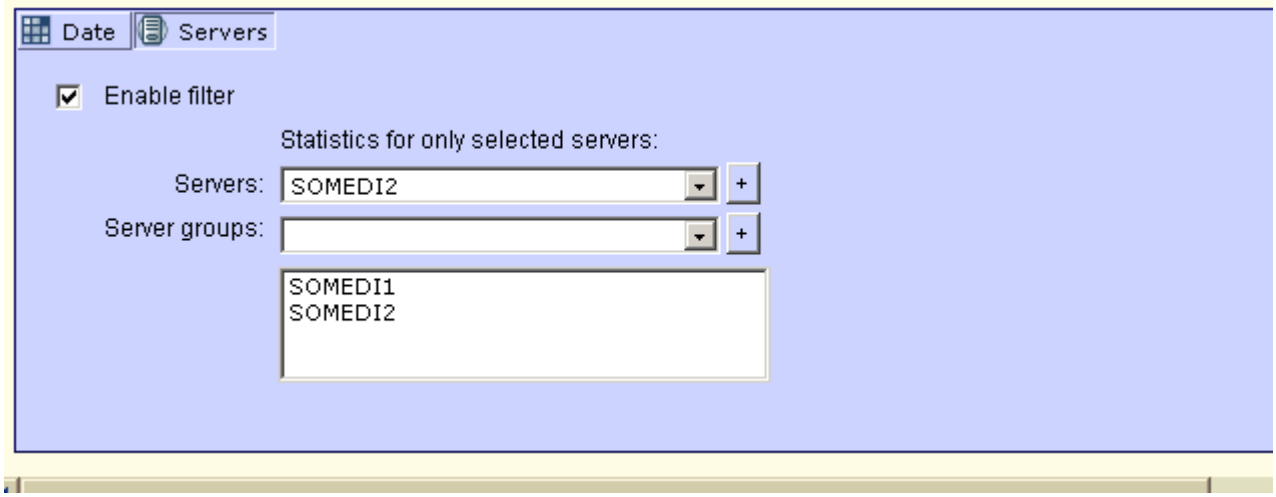
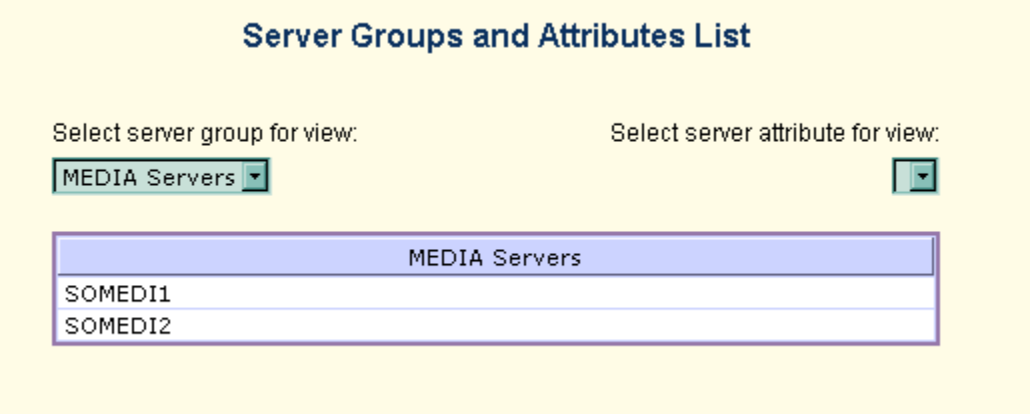
2.1.4 Media Servers

TC/MA can be configured to track media servers events. This configuration lets you use the Servers Filter or the Server Groups Filter to select messages that passed certain media servers.



It is possible to combine all media servers into a servers group (e.g. “MEDIA Servers”) and specify this group in the filter.



The Servers Filter is available in most reports. From the reports currently supported with TC/MA, only the following do not provide the Servers Filter:

- Service Level
- Custom Service Level
- Internet Traffic by domain
- Traffic between user groups and the internet
- Messages with combined recipients
- Combined recipients statistics

The following reports can be used to group by media server:

- Delivery Time Problems
- Server Traffic
- Server Connections Topology
- Resource Consumers
- Mails Delay

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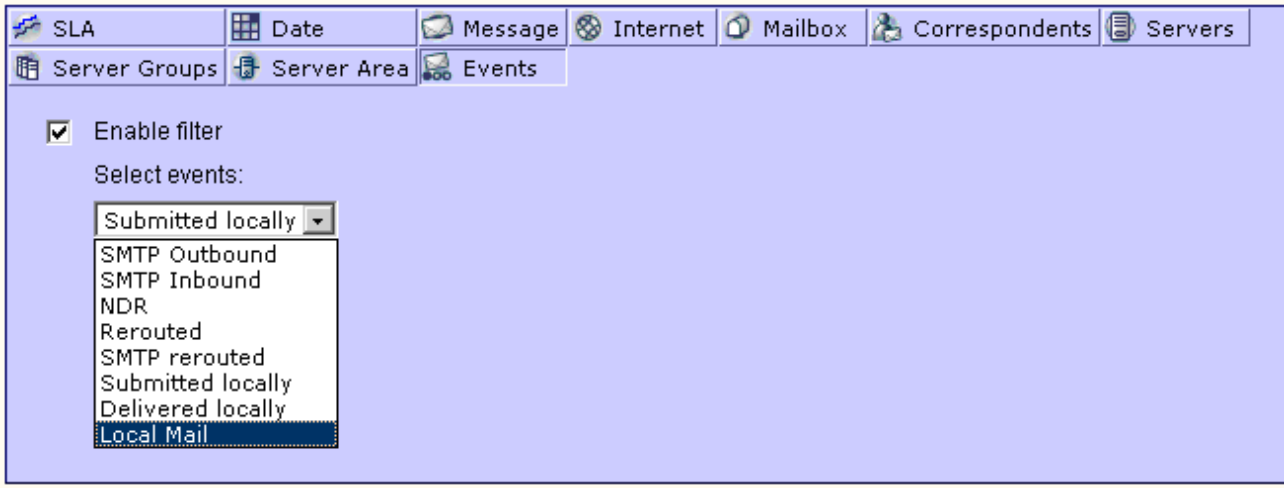
Note: The report Average Message Delay by Server cannot be used for calculating processing time on a media server. If several send attempts for the same send order are done via a media server, the calculated delay will be the time between first and last send attempt, which is of course not the processing time.

Media servers with names longer than 8 characters are not displayed correctly in reports. TCOSS stores only the first 8 characters of a media server name in the send order. If there are several media servers whose names differ only after the 8th character, they cannot be distinguished from each other in the reports, e.g. TQA-SOMEDI1 and TQA-SOMEDI2 will both show up as TQA-SOME.

2.1.5 Special Messaging Events

The OmniAnalyser Events Filter allows selecting messages with special events in their tracking history. The event list shown in this filter holds typical SMTP messaging events, like SMTP Transfer In, SMTP Transfer Out etc.



The following table shows which of these events can be used for filtering with KCS messages:

Event	Description
SMTP Outbound	Selects outgoing messages (not to a mailbox)
SMTP Inbound	Not applicable
NDR	Selects undeliverable messages
Rerouted	Selects messages created by in-events
SMTP Rerouted	Selects messages with unsuccessful send attempts
Submitted locally	Selects messages submitted via TCFW or TCWEB
Delivered locally	Selects messages delivered to TCOSS mailboxes (including shadow users)
Local mail	Selects messages submitted locally and delivered locally

OmniAnalyser standard reports where the Events filter can be used:

The report header shows that filtering for events was applied, e.g. "*Rerouted messages only.*"

Report
SLA Targets
Delivery Time Statistics
Messages Size Statistics
Server Traffic
Server Connections Topology
Resource Consumers

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Mails Delay
Messages

There are no OmniAnalyser standard reports that show statistics grouped by events.

2.1.6 In-Event Handling

A message that was forwarded to a mail system via an In-Event shows up in the OmniAnalyser database as two messages: one sent to the shadow user and the other sent to the recipient address in the mail system.

Note:
In OmniAnalyser reports, the originator for both messages is the same (the original sender). This is different from what is displayed in TCFW.

Both messages have the same transfer-in or submit time stamp, - so the delivery time displayed for the in-event covers the complete message transfer time (from external via the shadow user to the mail system).

To avoid counting two inbound messages, you can e.g. apply the Internet filter (e.g. select only messages between fax and notes). Another possibility is to use the events filter and select only messages with a rerouted event (i.e. only in-events).

Unfortunately, it is currently not possible to correlate the In-Event message with the user mailbox where the In-Event is defined.

2.1.7 KCS Mailboxes

KCS mailbox information can be imported into the OmniAnalyser Database. Only real users are imported, no queue users, address book entries or distribution lists. The +INVALID user and other users with “reject all messages” enabled, are also not imported into OmniAnalyser.

Currently, the mailbox information in OmniAnalyser holds no cross-reference to mailbox records imported from other mail systems (e.g. MS Exchange).

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The KCS mailboxes show up in the Address List report. The following screen shot shows that only a subset of available attributes is filled with data:

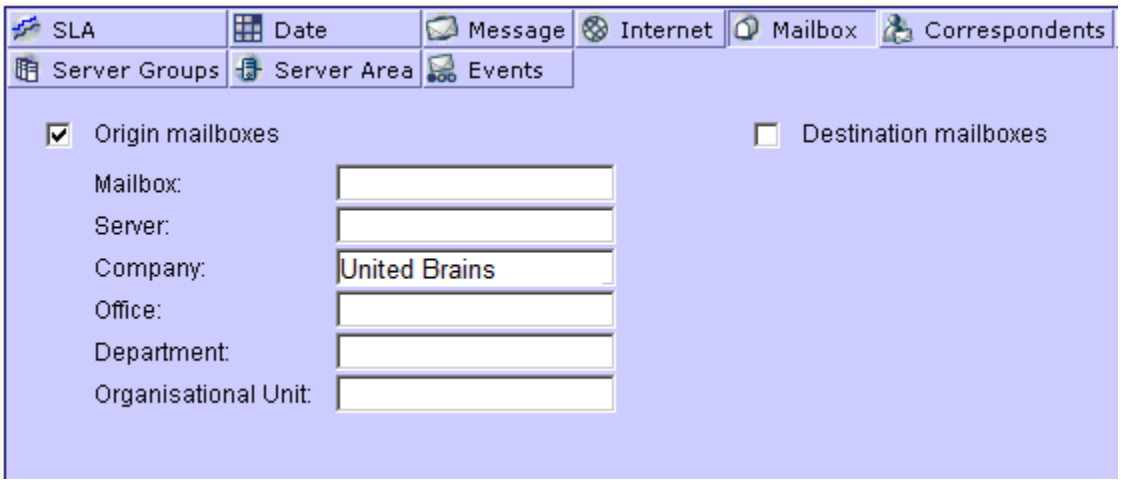
Mailbox Properties

Report for mailbox: TOM.FS_NEW

Page 1. Currently viewing 1 through 35 of 45 total items.	
-	-
Property	Value
First Name:	
Initials:	
Last Name:	
Display Name:	FS_NEW
Full Name:	
Location Server:	TOM
Title:	
Company:	
Department:	
Office:	LA
Assistant:	
EX Address:	TOM.FS_NEW
Mail:	
Distinguished Name:	TOM.FS_NEW
Alternative Recipient:	
Alternative Recipient Display Name:	
Address:	
City:	

Note: The mailbox name can optionally be prefixed with the server name (logical name for the TCOSS instance), e.g. TOM.FS_NEW instead of FS_NEW. This is necessary if one OmniAnalyser database holds information from several TCOSS instances. This option is by default enabled, but can be disabled. If you change this option, you must do it in the Fetch Agent registry (*TCMA\PrefixUserNames, see section 5.6*) and in the TCDIROPT.XML file used by OmniAgent (see section 4.2).

Import of KCS user profile information enables several reports that allow filtering by mailbox attributes, via the Mailbox Filter.



You can use the Mailbox Filter to select only messages from or to KCS user mailboxes that match certain criteria. A substring match is used, e.g. you specify company “United Brains” and filtering for mailboxes with

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company names containing “United Brains” is done (including e.g. “United Brains” and “United Brains Corp”).

With standard TC/MA configuration, you can use the following filter criteria:

Attribute name	**Corresponding KCS user attribute**
Mailbox	User Id or Full Name
Server	TCOSS instance
Department	Department
Company	Company
Site	Mail system where the user belongs to (for distinction between shadow users from different mail systems) Configurable.

<u>OmniAnalyser standard reports where the Mailbox filter can be used:</u>

The report header shows that filtering for mailbox attributes has been applied, e.g.:
“*Origin Mailbox name contains ‘FS’”*.

Report
SLA Targets
Delivery Time Statistics
Undelivered Messages
Traffic Dynamics
Volume Dynamics
Messages Size Statistics
Ûser Traffic By Unit
User Traffic Between Units
User Traffic By Unit Regardless Recipients Number
Total Traffic By Unit
Total Traffic Between Units
Internet Traffic By Domain
Traffic Between User Groups And The Internet
Server Traffic
Server Connections Topology
Resource Consumers
Mails Delay
Connector Traffic
Messages
Undelivered Messages
Messages With Combined Recipients
Combined Recipients Statistics
Average Traffic Statistics
Inactive Mailboxes By Server
Address List

There are also a lot of reports that show statistics for individual mailboxes or groups of mailboxes.

These reports provide a User Groups Filter that controls grouping of report results by certain mailbox attributes (e.g. user names, departments).

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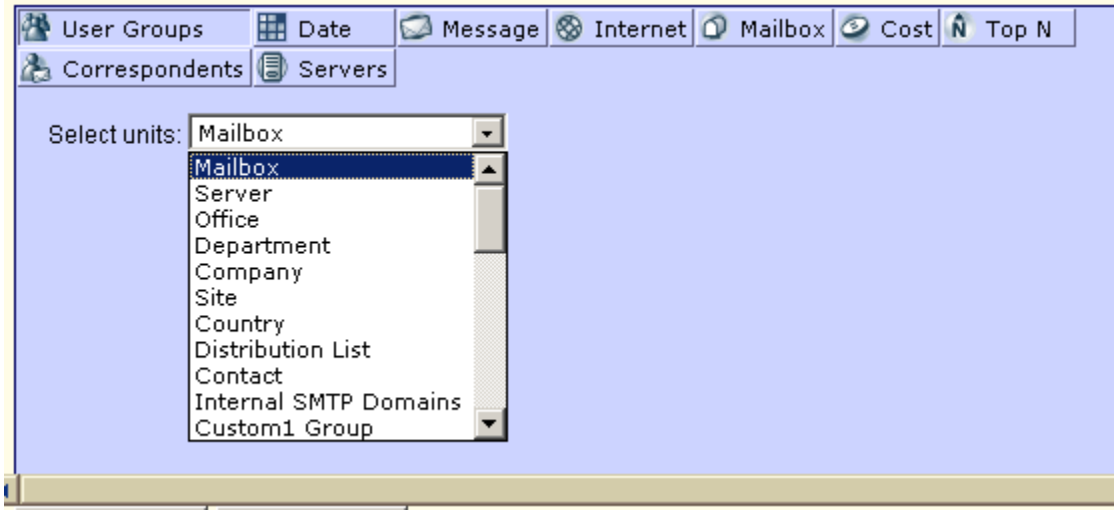

The available attributes in this filter depend on the report. With standard configuration for the directory import component, you can use the following groups:

Group name	Description
Mailbox	By TCOSS user ids (prefixed with server name, if configured)
Server	By TCOSS instance
Department	By department
Company	By company
Site	By mail system where the user belongs to (for distinction between shadow users from different mail systems) Configurable.

The following names are used for the mail systems of TCOSS users:

Name
TOPCALL
MSMAIL
CCMAIL
HPOM
HOST
TCFI
EXCHANGE
NOTES
NDS
MQ
SAPSC
SAPAC
INTERNET
SMS
X400
CUSTOM1 to CUSTOM10

OmniAnalyser Reports where the User Groups Filter can be used:

Report
User Traffic By Unit
User Traffic By Unit Regardless Recipients Number
User Traffic Between Units
Traffic Between User Groups And Internet Domains
Inactive Mailboxes By Server

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Example:

April User Traffic By Mailbox

Time interval: from 01.04.2004 to 30.04.2004.

Page 1. Currently viewing 1 through 9 of 9 total items.							
-	-	-	-	-	-	-	-
Mailbox	Display Name	Sent Mail	Sent Volume (MB)	Received Mail	Received Volume (MB)	Average Delivery Time (Out)	Average Delivery Time (In)
soprim1.tcprobe	TCPROBE	230	0,06	230	0,06	0:00:17	0:00:06
tom.kg	KG	55	0,08	5	0,00	0:00:55	0:00:00
tom.fs_new	FS_NEW	30	0,02	6	0,01	0:02:04	0:00:57
tom.ms	sdf sdf	18	0,01	0	0,00	0:00:11	-
tom.ma	MA	7	0,23	0	0,00	0:03:16	-
tom.fs2	FS2	0	0,00	2	0,00	-	0:00:00
tom.chka	chka	0	0,00	2	1,79	-	0:35:13
tom.dist	DIST	0	0,00	2	0,06	-	0:00:18
tom.fs_longusername	FS_longusername	0	0,00	6	0,00	-	0:00:00
Total		**340**	**0,40**	**253**	**1,92**		

Mailbox Groups:

You can define mailbox groups via OA Web Reports. Filtering for mailbox groups can be done via the Correspondents filter.

2.1.8 Least Cost Routing (LCR)

With Least Cost Routing Systems, all nodes must be tracked into the same OmniAnalyser database.

Messages that were routed between several nodes show up only once in the database. The standard events (Submit, Transfer In, Transfer Out) are assigned to the entry node. Nevertheless, a special “Routing” event (event id 2007) is stored for every other node that the message passed. This makes it possible to use the Servers Filter to search for messages that passed a specific node in the LCR system.

2.1.9 Notes

Delivery Time

Many OmniAnalyser reports include messages that are not yet delivered to the final recipient. In these reports, the displayed delivery time is the difference between the last and the first tracking event for the message.

The following reports show only messages that have been terminated:

- Server Connections Topology
- Resource Consumers
- Mails Delay
- Connector Traffic
- Delivery Time Problems

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Status “Inactive – Problems”

It is not supported to use termination status “Inactive – Problems” for TC/LINK configuration, because such messages must be cancelled manually before they go to the short term archive. This means that the delivery time displayed in OmniAnalyser will be very long (from message submission to the time the message has been cancelled manually).

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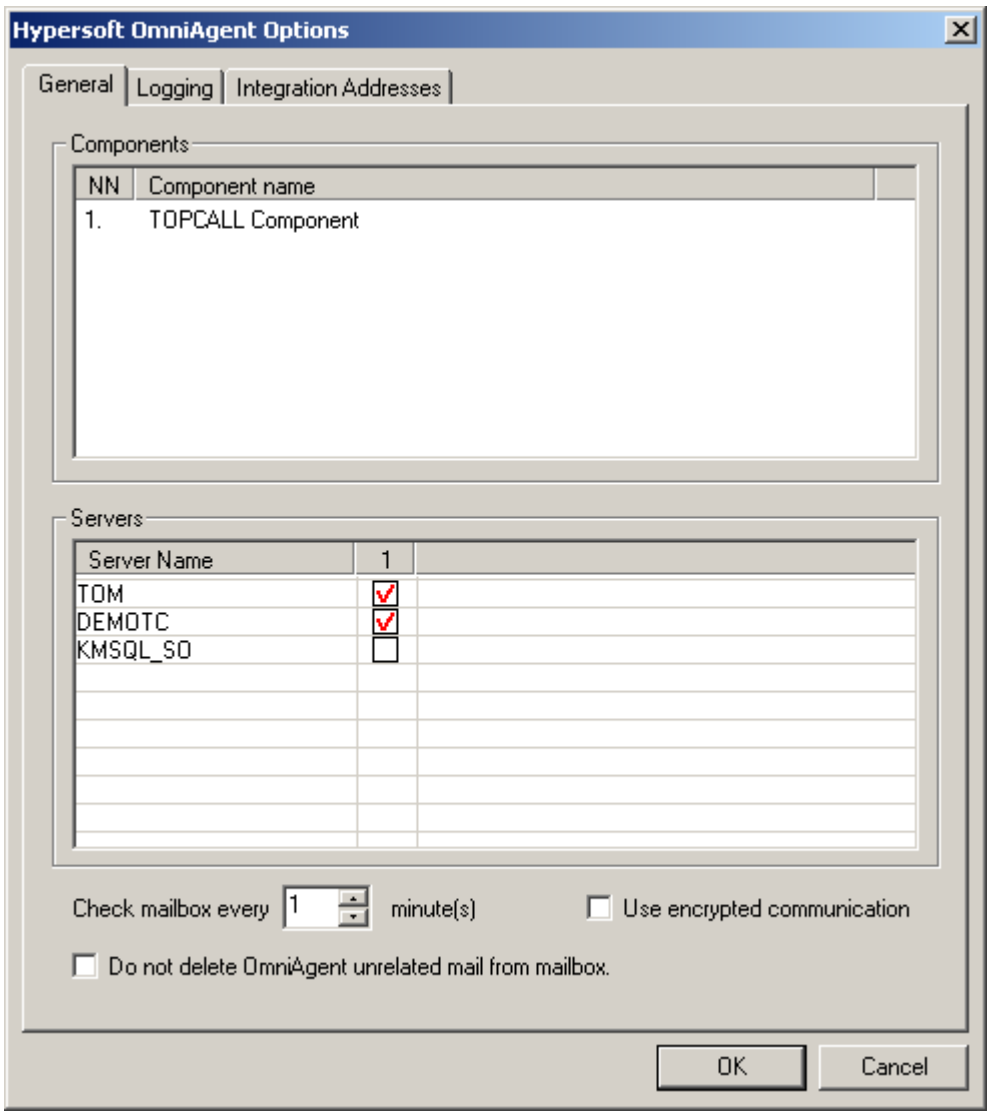
3. TC Tracking Component

The TC Tracking Component is implemented in a single DLL called TCHSCMP.DLL. It is invoked by the OmniAgent.exe process. OmniAgent can be installed on any computer in the LAN, - but it must have access to the TC/Report database and to its mailbox. Typically, OmniAgent could be installed on the TCOSS server itself, or on the TC/Report computer. Installation is done via the OmniAgent Setup from HyperSoft (see section Installation).

3.1 User Interface for Configuration

After installation, the TC Tracking Component can be configured via the HyperSoft OmniAgent Manager (*Start* | *All Programs* | *HyperSoft OmniAgent* | *OmniAgent Manager*).



The HyperSoft OmniAgent Manager is installed on the computer where OmniAgent runs. It allows adding servers from which messaging data shall be imported, and configuring settings for these servers.

When you right-click the Servers list, you can *Add* a new server, *Delete* an existing server, show server *Properties* and *Configure Components* for the selected server.

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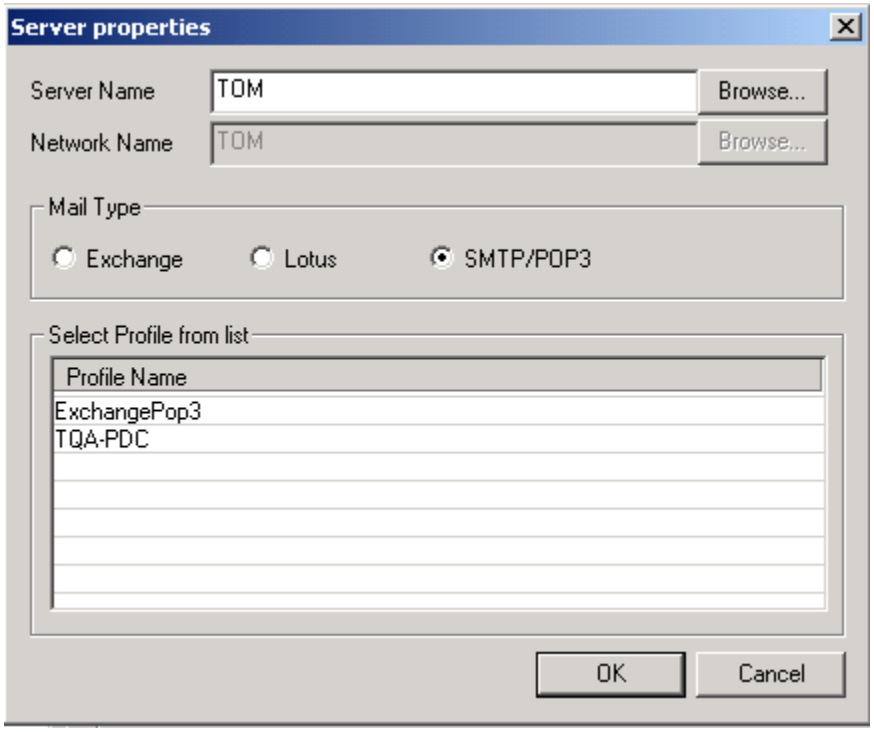
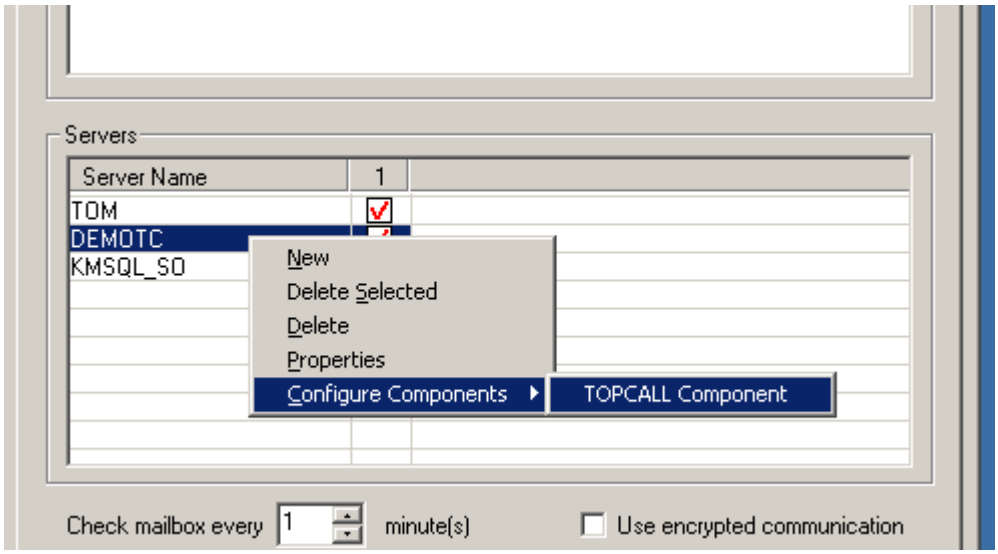
In the server *Properties* panel, you can change the server name and configure the profile that is used for mailbox access.



Currently, you can use either an Exchange or a SMTP/POP3 profile. The list of available profiles for the selected mail type is displayed. You can select one of the existing profiles by clicking on it, or create a new profile by right clicking at the profile list and choosing **New** from the context menu.

Most of these features are standard HyperSoft functionality; - only the configuration of the TC Tracking Component is unique for KCS integration:



<u>Configuration of the TC Tracking Component:</u>

Here you configure from where the TC Tracking Component shall retrieve messaging information.

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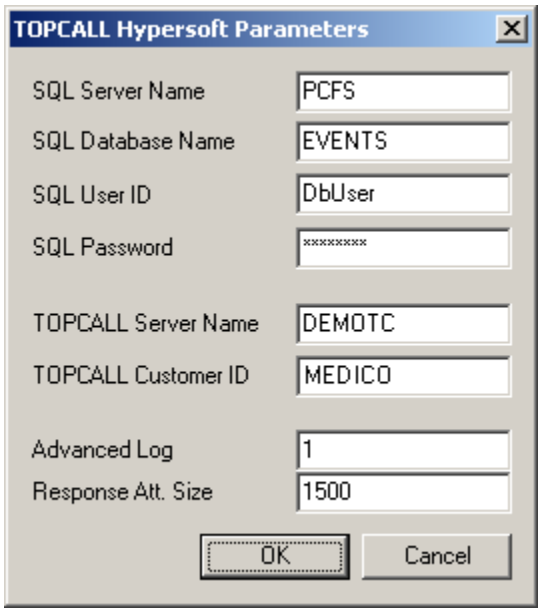

SQL Server Name: Name of the SQL server where the TC/Report database is located.

SQL Database Name: Name of the TC/Report database

SQL User ID: User ID for logon to the TC/Report database

SQL Password: Password for logon to the TC/Report database

TOPCALL Server Name: Name of the TCOSS instance as stored in the TC/Report database

TOPCALL Customer ID: Name of the customer whose data must be imported (only applicable if several customers per TCOSS instance, otherwise empty). The customer id must be stored in a fixed user profile field defined in TC/Report Fetch Agent configuration (see section 1.4.2 for an example).

Advanced Log: Can be 0 or 1. Set to 1 for maximum trace information.

Response Att. Size: Maximum size (in KB) of the file attachment in a tracking response.
If the available information does not fit into this size, it is divided into several response mails. If set to 0, the size check is disabled.

3.2 Configuration File

The configuration of all installed agents (including the TC Tracking Component) is stored in the file OPTIONS.XML. OmniAgent Setup creates this file in the directory where OmniAgent is installed. Normally, you do not edit this file, - because it is maintained by the HyperSoft OmniAgent Manager application.

The following list of parameters defined for the TC Tracking Component is therefore only a description of implementation details:

The following parameters are defined for every server:

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Name	**Type**	**Default Value**	**Description**
AdvancedLog	Integer	0	0: Logging of errors only 1: Advanced logging enabled
SQLServerName	String		Name of SQL server with events database
SQLServerDatabaseName	String		Name of events database on SQL server
SQLUserId	String		User-ID for logon to SQL server
SQLPassword	String		Encrypted password for logon to SQL server
TCServerName	String		Name of TCOSS server in events database (field EV_SERVER)
TCCustomerID	String		Customer name (if several customers share a TCOSS server and OmniAnalyser needs only information from 1 customer)
ResponseAttachmentSize	Integer	1500	Max. size of response attachment (in KB)
NextScanTime	Integer	999999	Means: no automatic scan is done
SQLNetworkLibrary	String		Optional: network library to be used If empty: default network protocol configured via SQL Server Client Network Utility (cliconfg.exe)

The only value that you might probably edit manually is the SQLNetworkLibrary. This option is currently not available via the Component Properties user interface. It defines which network protocol shall be used for accessing the TC/Report database. If the database is on a remote SQL server and access permission problems are encountered with the default protocol, you can configure the protocol used by the TC Tracking Component here. Of course, the selected protocol must be enabled on the SQL Server. This can be done via the SQL Server Network Utility (srvnetcn.exe)

Possible values for SQLNetworkLibrary:

Constant	**Meaning**
DBNMPNTW	Win32 Named Pipes
DBMSSOCN	Win32 Winsock TCP/IP
DBMSSPXN	Win32 SPX/IPX
DBMSVINN	Win32 Banyan Vines
DBMSRPCN	Win32 Multi-Protocol (Windows RPC)

3.3 Logging

The TC Tracking Component writes a log file called TCHSCMP.LOG to the folder LOGS\TCCOMPONENT\<servername> below the OmniAgent application directory. <servername> means the logical server name as visible in the servers list of the OmniAgent Manager. To get a detailed log file set “Advanced Log” to 1.

3.4 Requesting Tracking Data Manually

This is done via OmniAnalyser menu option *“Tools | Send Requests”*, in the same way as done for other server types. After requesting information, make sure that the OmniAgent service is running. Depending on

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the mailbox poll interval configured for OmniAgent, it may take some time until the agent returns response mails. Use the menu option *"Tools| Get Responses"* repeatedly to retrieve the response mails and store information in the OmniAnalyser database.

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4. TC Directory Import Component

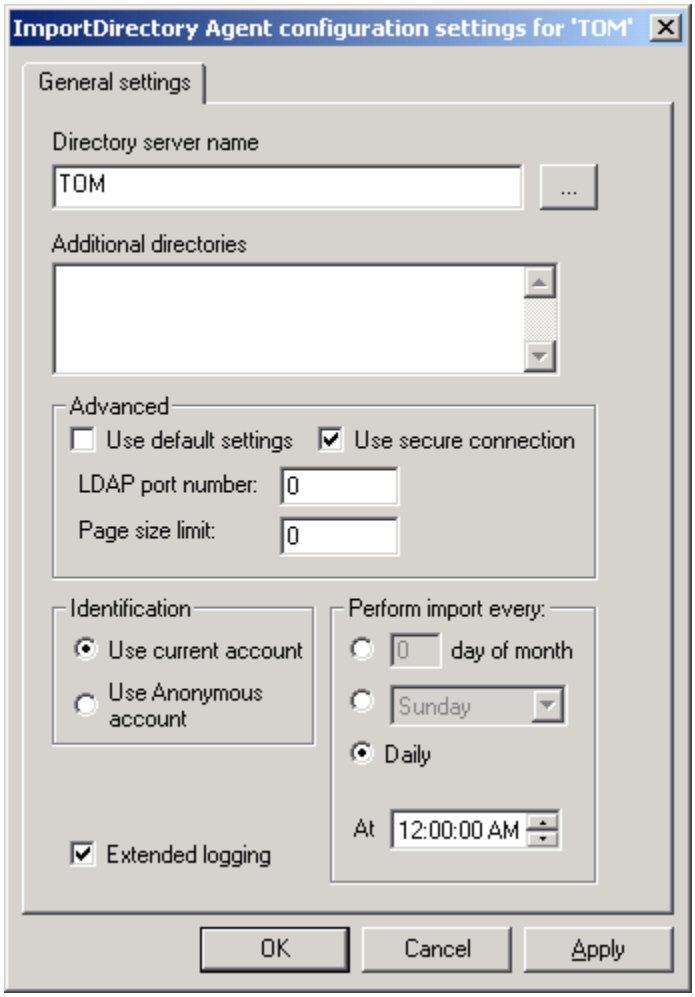
The TC Directory Import Component is implemented in a single DLL called DIREXTRACT.DLL. It is called by OmniAgent or by the OmniAnalyser.exe process.

Attention: There are several versions of Direxttract.dll, - for MS Exchange, for Lotus Notes and for KCS. The OmniAnalyser process loads the Direxttract.dll when starting.

If you use several mail systems (e.g. in an ASP installation of OmniAnalyser), you should only use OmniAgent for directory import, with a dedicated OmniAgent installation for every mail system.

4.1 Configuration of Directory Import

Configure directory import via OmniAgent Manager:



Most settings on this panel are not relevant for KCS directory import. The only important fields are:

Directory Server Name: Comma separated list, holding TCOSS instance names (attribute TCInstanceName from TCDIROPT.XML).

Perform import every: Here you configure when user profiles shall be imported.

Extended logging: If enabled, OmniAgent will write additional information into its log files.

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Directory import is always a full import: existing user information is deleted; then the current user information as stored in the TC/Report database is imported.

4.2 Configuration File

The file TCDIROPT.XML holds configuration values for directory import. These values must match the configuration of TC/Report. In earlier versions of TC/MA, it was necessary to create the TCDIROPT.XML file from scratch via a text editor.

In addition to possible typing mistakes, the most important disadvantage was that the password for accessing the TC/Report database had to be entered in clear text.

Now, TC/Report can be configured to create a TCDIROPT.XML file automatically. This is done by writing the path name of the XML file to be created into registry value TCMA\TCDirOptXMLFile below the TC/Report Fetch Agent configuration. The file is created newly every time TC/Report Fetch Agent starts. It is recommended to let TC/Report create the file after installation (or after adding servers), and to disable the feature afterwards.

The resulting file holds information about all TCOSS instances that are configured in the TC/Report database and from which message tracking information is collected.

If there is only one customer per TCOSS instance, the created file can be copied to the OmniAgent working directory as it is. With multiple customers per TCOSS instance, you have to add virtual server definitions to the file.

For example:

```
<?xml version="1.0" ?>
- <OPTIONS>
  <AdvancedLog>1</AdvancedLog>
  <PrefixUserNames>1</PrefixUserNames>
- <MAP>
  <Mailsystem>Site</Mailsystem>
  </MAP>
- <Servers>
- <Server ID="1">
  <TCInstanceName>TOM</TCInstanceName>
  <TCServerName>TOM</TCServerName>
  <TCCustomerId />
  <SQLServerName>OMNIATEST</SQLServerName>
  <SQLServerDataBaseName>TCReport</SQLServerDataBaseName>
  <SQLUserId>DbUser</SQLUserId>
  <SQLPassword>2B3D2E2D280F1306</SQLPassword>
  <SQLNetworkLibrary />
  </Server>
  </Servers>
  </OPTIONS>
```

The file created by TC/Report holds one TCOSS server with TCInstanceName = TOM.

If there are two customers on this TCOSS (Customer1, Customer2), you copy the server definition and change Server ID, TCInstanceName and TCCustomerId as shown below:

```
  <?xml version="1.0" ?>
- <OPTIONS>
  <AdvancedLog>1</AdvancedLog>
  <PrefixUserNames>1</PrefixUserNames>
- <MAP>
  <Mailsystem>Site</Mailsystem>
  </MAP>
```

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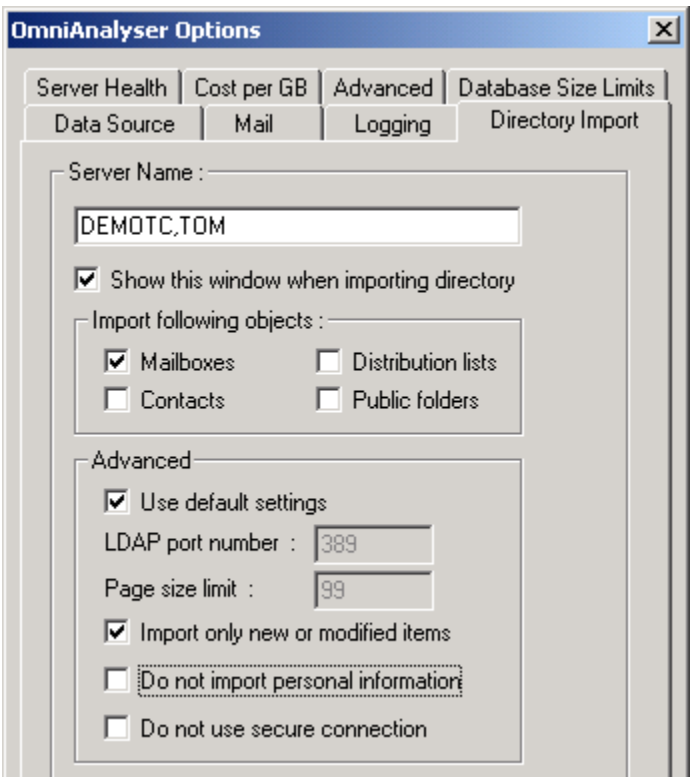
```
- <Servers>
- <Server ID="1">
  <TCInstanceName>TOM1</TCInstanceName>
  <TCServerName>TOM</TCServerName>
  <TCCustomerId>Customer1</TCCustomerId>
  <SQLServerName>OMNIATEST</SQLServerName>
  <SQLServerDataBaseName>TCReport</SQLServerDataBaseName>
  <SQLUserId>DbUser</SQLUserId>
  <SQLPassword>2B3D2E2D280F1306</SQLPassword>
  <SQLNetworkLibrary />
  </Server>
- <Server ID="2">
  <TCInstanceName>TOM2</TCInstanceName>
  <TCServerName>TOM</TCServerName>
  <TCCustomerId>Customer2</TCCustomerId>
  <SQLServerName>OMNIATEST</SQLServerName>
  <SQLServerDataBaseName>TCReport</SQLServerDataBaseName>
  <SQLUserId>DbUser</SQLUserId>
  <SQLPassword>2B3D2E2D280F1306</SQLPassword>
  <SQLNetworkLibrary />
  </Server>
  </Servers>
  </OPTIONS>
```


4.3 Manual Start of Directory Import

It is possible to start directory import via the OmniAnalyser application.

Use the menu item **Tools | Options | Directory Import** in OmniAnalyser to configure manual directory import:



Fill the field Server Name with a comma separated list of TCInstanceName values from the TCDIROPT.XML file.

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Note: All other options are not relevant for KCS directory import. It is also not relevant whether the server is checked in the server list.

Use menu item **Tools | Import Global AddressList** to start manual directory import.

Attention: Do not start directory import via OmniAnalyser if other mail server types (e.g. MS Exchange) are also handled by this OmniAnalyser installation.

4.4 Logging

The component writes a log file called TCDIRIMP.LOG to the folder AnalyserLogs\TCDIRIMPORT below the OmniAnalyser application directory.

Logs are by default appended.

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5. TC/Report Changes for KCS Messaging Analyzer

5.1 Changed Standard Tables

This section describes new fields in standard TC/Report tables.

5.1.1 Table User_Table

Field Name	SQL Datatype	Description	Comment
QueueUser	Int	0: normal user 1: queue user	All users with “visible in outbox” flag and media type set to a value other than “invalid” are considered as queue users. ++INVALID and other users configured for automatic reject of messages are also regarded as queue users. Purpose: distinguish between user mailboxes and queues that are used by applications
CostCenter	Varchar(12)	Cost center of the user	From user store entry field TS_COST_CENTER
UserGroup	Varchar(127)	Group of the user	From user store entry field TS_GROUP
Location	Varchar(8)	Location	From user store entry field TS_LOCATION
MediaType	Integer	Media type	From user store entry, new map field MessagingAnalyser.MediaType Fixed constants + several custom constants
ApplicationName	Varchar(30)	Application name	From user store entry, new map field MessagingAnalyser.Application

The purpose of the new fields CostCenter, UserGroup and Location is to offer reports that are grouped or filtered by the user’s cost center, group and location.

The other three new fields QueueUser, MediaType and ApplicationName allow to distinguish queues from real users, and to assign a media type (e.g. sms, internet mail etc.) to messages sent via queues.

Additionally, queues can be assigned an application name, e.g. all queues polled by parallel instances of TC/LINK-MX might have application name TCLINKMX. This allows filtering for messages that were processed by certain applications.

The fields MediaType and ApplicationName can be edited via TCFW.
TCLINK.EXE 2.08.02 and above sets default values for these fields, corresponding to the link type, when creating new queue users.

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5.1.2 Table Server_Table

Field Name	SQL Datatype	Description	Comment
NodeAlias	Varchar(128)	If server is an LCR node: Node alias from rr99, without trailing – character.	Used in LCR systems only. User names, channels and channel groups are here prefixed with the NodeAlias. TC/Report must recognize and correctly interpret this prefix.
Fetch_Events	Bit	1: create events for this server (if configured globally) 0: do not create events for this server	With this flag, you configure whether media server events are assigned to the media server (needs a separate tracking agent) or to the storage server.
CustomerIdField	Integer	Specifies which user profile attribute holds the customer id (if TCOSS instance shared by several customers)	This is a TCSI field ID. Default is 0. Possible values: 0: only 1 customer per TCOSS 191: costcenter 201: group 205: company 206: department 207: fullname 208: salutation 209: freetext 282: location

5.2 Tables used by TC Tracking Component

This chapter describes the new tables for message tracking events. In a default installation, these tables and corresponding procedures are installed in a separate database (EVENTS) on the same SQL server. Nevertheless, it is also possible to install them into the standard TC/Report database.

If the standard reporting mechanism (Crystal Reports via the KCS Report Agent) is used in addition to OmniAnalyser, performance will be better when using two separate databases. For performance reasons, they should be located on different disks.

If only OmniAnalyser is used as a reporting tool, it is better to use a single database and to disable usage of the old tables (Action_Table, Log_Table).

If the TC/Report Fetch Agent is configured to store message tracking events, all new database objects are created automatically by KCS Server Package Setup.

The TC/Report Fetch Agent then fills the tables with messaging events. This is done while fetching mail entries and log information from the TCOSS short term archive.

5.2.1 Table EVMSG

This table holds per-message properties, i.e. information that is the same for every recipient of the message.

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Field Name	SQL Datatype	DB Info	Description	Comment
M_MSGID_STRING	Varchar(150)	Primary key, indexed, no duplicates	Unique message id	Format: <serverid>.<ts_tc_msg_id>.<ts_file_name> Example: DEMOTC.0000181510FA309F.123456789012
M_TIME_FIRST	DateTime		Time of first event	Used internally for correlation of in-events to original message.
M_ORIGINATOR_ADDR	Varchar(200)		Originator address	If originator is a TCOSS user, this field holds the user ID. Otherwise, it holds the normalized address (including channel)
M_SUBJECT	Varchar(100)		Message subject	From mail entry
M_SIZE	Int		Message size in bytes	
M_ORIGINATOR_SITE	Varchar(100)		Originator “site”	For TCOSS users, the site is the server name. For internet addresses, the site is the domain name. For other addresses, the site is the media type of the originator, e.g. fax, telex etc.
M_PAGES	Int		Number of pages	
M_FILE_NAME	Varchar(12)		TCOSS filename of the message	
M_FIRST_ID	Int		Type of first event (submit or transfer in)	Used internally for correlation of in-events to original message.
M_DURATION	Int			For voice mail: duration of voice message in seconds. For other messages: 0

5.2.2 Table ALLEVENTS

This table holds 1 entry for every messaging event.

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Field Name	SQL Datatype	DB Info	Description	Comment
EV_CREATOR	Varchar(30)	Not null	TCOSS server name (record was written while polling this server)	Used internally
EV_SERVER	Varchar(30)	Not null	TCOSS server responsible for the event action.	This can be the TCOSS server that was polled, - or a media server.
EV_TIME	DateTime	Not null	Date and time of the event	In UTC.
EV_ID	Int	Not null	Event ID	See table in section “Event types”.
EV_MSGID	Varchar(150)	Not null, indexed, foreign key	Message ID	Must match a M_MSGID_STRING value in table EVMSG
EV_RECIPIENT_ADDR	Varchar(200)	Indexed	Recipient address	For TCOSS users, this field holds the user ID. Otherwise, it holds the normalized address (including channel).
EV_NUM_RECIPIENTS	Int		Always 1	
EV_PRIORITY	Int		Priority	-1: low 0: normal 1: high (includes the extra high priorities possible in TCOSS send orders)
EV_PARTNER	Varchar(200)		Channel or application that created this event	For channels, this field holds: <serverid>.<channel> e.g.: DEMOTC.13 For applications, this field holds: <serverid>.<application> e.g.: DEMOTC.TCLINKMX Mainly used for Transfer In and Transfer Out events. Empty in most other cases.
EV_RECIPIENT_SITE	Varchar(100)		Recipient “site”	For TCOSS users, the site is the server name. For internet addresses, the site is the domain name. For other addresses, the site is the media type of the originator, e.g. fax, telex etc.
EV_COST_CENTER	Varchar(128)		Cost center of the send order	
EV_COST	Float		Costs for the send order	
EV_DISTRIBUTOR	Varchar(128)		Distributor	Only for Distributed event
EV_LAST_ERROR	Varchar(2)		Error code	Only for non-delivery event. From TCSI field TS_LAST_MDA_ACTION.
EV_BROADCAST	Int		1 if send order is part of broadcast job	

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EV_QUEUE_WAITTIME	Int		Queue wait time in seconds	Only for Selected event
EV_TIME_INTENDED	DateTime		Intended send time	
EV_CUSTOMER_TO	Int		Recipient customer ID	Default 0. Only used if several customers per TCOSS instance.
EV_CUSTOMER_FROM	Int		Originator customer ID	Default 0. Only used if several customers per TCOSS instance.
EV_MSGCLASS	Varchar(20)		Message class for this event	

5.2.3 Table CUSTOMERS

This table is only used if several customers share one TCOSS instance. It holds the customer names from shared TCOSS instances, and it is used by stored procedure GET_EVENTS_FOR_CUSTOMER.

Field Name	SQL Datatype	DB Info	Description	Comment
CU_ID	Int	Identity	Unique customer id	Is used as a foreign key in EV_CUSTOMER_FROM and EV_CUSTOMER_TO
CU_NAME	Varchar(80)	Not Null	Customer name	
CU_SERVER	Varchar(30)	Not Null	TCOSS instance name	Corresponds to Server_ID in Server_Table

5.2.4 Stored Procedure GET_EVENTS

The stored procedure GET_EVENTS can be used to retrieve event information for a given server and time frame. It accepts 3 parameters:

Parameter Name	SQL Datatype	Description
pServer	Varchar(30)	Server ID (event server id must be the same as pServer)
pFrom	DateTime	Start date in UTC (event time must be >= pFrom)
pTo	DateTime	End date in UTC (event time must be < pTo)

5.2.5 Stored Procedure GET_EVENTS_FOR_CUSTOMER

The stored procedure GET_EVENTS_FOR_CUSTOMER has an additional parameter where you can specify a customer name. It is used for installations where several customers share one TCOSS instance.

Parameter Name	SQL Datatype	Description
pServer	Varchar(30)	Server ID (event server id must be the same as pServer)
pFrom	DateTime	Start date in UTC (event time must be >= pFrom)
pTo	DateTime	End date in UTC (event time must be < pTo)
pCustomer	Varchar(80)	Customer name

Both stored procedures perform a query on the above tables and return a record set (sorted by ascending event time) with the following fields:

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Field Name	SQL Datatype	From Table	Comment
EV_SERVER	Varchar(30)	ALLEVENTS	Server ID (storage or media server)
EV_ID	Int	ALLEVENTS	Event ID
EV_TIME	DateTime	ALLEVENTS	Event date and time in UTC
EV_MSGID	Varchar(150)	EVMSG, ALLEVENTS	Message ID
EV_ORIGINATOR_ADDR	Varchar(200)	EVMSG	Originator address
EV_ORIGINATOR_SITE	Varchar(100)	EVMSG	Originator site
EV_RECIPIENT_ADDR	Varchar(200)	ALLEVENTS	Recipient address
EV_RECIPIENT_SITE	Varchar(100)	ALLEVENTS	Recipient site
EV_NUM_RECIPIENTS	Int	ALLEVENTS	Number of recipients
EV_SUBJECT	Varchar(100)	EVMSG	Subject
EV_SIZE	Int	EVMSG	Size
EV_PAGES	Int	EVMSG	Pages
EV_PRIORITY	Int	ALLEVENTS	Priority
EV_PARTNER	Varchar(200)	ALLEVENTS	Partner
EV_COST_CENTER	Varchar(128)	ALLEVENTS	Cost center
EV_COST	Float	ALLEVENTS	Cost
EV_DISTRIBUTOR	Varchar(128)	ALLEVENTS	Distributor
EV_LAST_ERROR	Varchar(2)	ALLEVENTS	Last error
EV_BROADCAST	Int	ALLEVENTS	1 if broadcast
EV_QUEUE_WAITTIME	Int	ALLEVENTS	Queue wait time in sec
EV_TIME_INTENDED	DateTime	ALLEVENTS	Intended send time (UTC)
EV_FILE_NAME	Varchar(12)	EVMSG	TCOSS file name
EV_MSGCLASS_S	Varchar(20)	ALLEVENTS, EVMSG	Message class for this event (e.g. IPM.FAX, IPM.NOTE)

5.2.6 Stored Procedure GET_BILLING_EVENTS

The stored procedure GET_BILLING_EVENTS can be used to retrieve billing information for a given server and time frame. It accepts 3 parameters:

Parameter Name	SQL Datatype	Description
pServer	Varchar(30)	Server ID (the server where the event occurred)
pFrom	DateTime	Start date in UTC (event time must be >= pFrom)
pTo	DateTime	End date in UTC (event time must be < pTo)

5.2.7 Stored Procedure GET_BILLING_EVENTS_FOR_CUSTOMER

The stored procedure GET_BILLING_EVENTS_FOR_CUSTOMER has an additional parameter where you can specify a customer name. It is used for installations where several customers share one TCOSS instance.

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Parameter Name	SQL Datatype	Description
pServer	Varchar(30)	Server ID (the server where the event occurred)
pFrom	DateTime	Start date in UTC (event time must be >= pFrom)
pTo	DateTime	End date in UTC (event time must be < pTo)
pCustomer	Varchar(80)	Customer name

Both stored procedures return a record set (sorted by ascending event time) with the following fields:

Field Name	SQL Datatype	From Table	Comment
EV_MSGID	Varchar(150)	EVMSG, ALLEVENTS	Message ID
EV_TIME	DateTime	ALLEVENTS	Event date and time in UTC
EV_PAGES	Int	EVMSG	Pages
EV_COSTS_ CUMULATED	Float	ALLEVENTS	Cost
EV_COST_CENTER	Varchar(128)	ALLEVENTS	Cost center
EV_SIZE	Int	EVMSG	Size
EV_DURATION	Int	EVMSG	Duration in seconds (for voicemail)
EV_RETRIES	Int	ALLEVENTS	Number or retries needed
EV_SPECIAL_ OPTIONS	Int	ALLEVENTS	Broadcast flag and other flags
EV_MSGCLASS_S	Varchar(20)	ALLEVENTS, EVMSG	Message class for delivery (e.g. IPM.FAX, IPM.NOTE)
EV_RECIPIENT_ADDR	Varchar(200)	ALLEVENTS	Recipient address

5.3 Database Cleanup

The TC/Report Fetch Agent is responsible for regular database cleanup. During Fetch Agent Setup, you can define for how many days information must be kept in the database and when the daily database cleanup shall occur. Once a day at a configurable time, the Fetch Agent deletes all entries from table ALLEVENTS that are older than the configured number of days. Entries in table EVMSG that did not have an event for the configured number of days are also deleted.
This cleanup affects only the TC/Report tables – the OmniAnalyser database is not changed.

5.4 New Fetch of Server

If a new fetch of a server is initiated via TC Management Console, the TC Management Console deletes all entries from table ALLEVENTS where the field EV_CREATOR matches the server id, and all entries from table EVMSG that start with server id followed by a dot.

New fetch does not affect the OmniAnalyser database.

5.5 Deletion of a Server

The same actions are done when you delete a server via TC Management Console.

Deletion of a server via TC Management Console affects only the TC/Report tables – the OmniAnalyser database is not changed.

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5.6 Registry Values

Registry value	Type	Default value	Description
TCMA\ WithEvents	DWORD	0	0: do not fetch message tracking information (old operation mode) 1: fetch message tracking information needed for OmniAnalyser (for all servers where it is not explicitly disabled)
General\ WithActionTable	DWORD	1	1: write information to the Action_Table (old operation mode, needed for Crystal Reports based reports) 0: do not write information to the Action_Table (saves disk space, if only OmniAnalyser is used for reporting)
TCMA\ DBName	SZ	“EVENTS”	Only applicable if WithEvents = 1. Name of the events database. If equal to TCREPORT database, DBPath is ignored.
TCMA\ DBPath	SZ	Same as General\ DBDirectory	Only applicable if WithEvents = 1. Folder for the events database.
TCMA\ DBCleanupTime	SZ	00:00	Time (local time) for event database cleanup
TCMA\ DBCleanupDays	DWORD	30	Number of days that information must be kept
TCMA\ DBLastCleanup	SZ	2000-01-01	Date (local time) of last event database cleanup
TCMA\ PrefixUserNames	DWORD	0	If 1, user names are prefixed with server name
TCMA\ UseReceiveQueue	DWORD	1	If 1: all messages posted to TCOSS via TCLINK create a Transfer In event, media type preserved If 0: Messages from shadow users posted via TCLINK create a Submit event, media type is lost For developer only.
TCMA\ TCDomain	SZ	Topcall	The fictitious root domain name used for KCS media types (e.g. fax.topcall, sms.topcall)
TCMA\ TCDirOptXMLFile	SZ	C:\TOPCALL\SHARED\ TCDIROPT.XML	Complete path name of the TCDIROPT.XML file that shall be created by TC/Report If empty: no file created

5.7 Short Term Archive Entries Converted to Events

TC/Report gets messaging information from 3 different types of short term archive entries:

- Submit log entries created by TCOSS, 1 per send order.
- In-action log entries created by TCOSS, 1 per send order.
- send attempts (1 or more per send order, - send retries are only fetched if so configured for the server). Only normal messages are evaluated, - send orders of type ROUTE and NOTIF are ignored.

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Each short term archive entry is converted into one or more events that are written to the events database.

Event types

Constant	Name	Description
0	Transfer In	A send order entered the server via a (local or remote) hardware channel or an application queue (e.g. TCLINK).
4	Submit	A TCOSS user submitted the send order directly to TCOSS via a client application (TCFW, TCWEB).
7	Transfer Out	A send order was successfully sent out via a hardware channel or an application queue (link, voicelink)
9	Local Delivery	A send order was delivered to a local user mailbox. Delivery to queue users is not considered as “Local Delivery”.
34	Non Delivery Report (NDR All)	A send order was terminated negatively.
29	In-Event	A new send order (for an existing message) was created via an in-event.
1010	Scheduled	A send order was scheduled for transmission (put into a queue).
1020	Selected	A send order was selected for transmission by a TUM or an application.
1014	Retry Needed	A send attempt failed, a retry will follow.
2002	Corrected	A send order was corrected by an operator.
2006	Distributed	A send order was distributed by an operator.
2007	Least Cost Routing	A send order passed a (non-entry) node in a least cost routing system.

Events are assigned to the server where the event happened. In a stand-alone TCOSS instance without media servers all events are assigned to the TCOSS instance.

In a system with configured media servers, the events Transfer In, Transfer Out, Retry Needed and NDR All are assigned to the media server if a media server channel is involved.

In a system consisting of several Least Cost Routing Nodes, only the send order on the entry node is processed for event logging. But after termination of the send order, TC/Report creates Least Cost Routing events for the other involved nodes. Thus, it is documented which nodes were passed.

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6. Installation

6.1 Planning the Installation

First you need a decision about the physical deployment of the software in the network. The following list of requirements shall help with this decision:

Operating system:

Any currently supported Operating System. For more details about supported operating systems, refer to Platform System Manual.

Databases:

Both OmniAnalyser and TC/Report need a database on an MS SQL Server (version 7.0 or above). MSDE is also supported, but not recommended, because of its size restriction for databases (2 GB maximum). The OmniAnalyser database can only be installed on a case-insensitive SQL server.

It is possible to use the same MS SQL Server for both databases.

TC/Report and OmniAgent need ODBC access to the TC/Report database.

OmniAnalyser, OmniAnalyser Web Reports and OmniAnalyser Report Scheduler need ODBC access to the OmniAnalyser database.

Internet Information Server:

OmniAnalyser Web Reports need MS IIS 4.0 or above.

Mail Server:

You need some mailboxes on a mail server (for OmniAnalyser, OmniAgent and for an operator). These mailboxes can be on an MS Exchange server, or on any mail server with POP3 / SMTP access.

Currently, the easiest way of installation is to use the same server for all mailboxes and to use SMTP / POP3 for access.

Access to TCOSS server:

TC/Report needs a network connection (TCTI) to the TCOSS server.

Simple installation example:

- Server1: SQL Server, MS IIS, TC/Report, OmniAgent, OmniAnalyser, OmniAnalyser Web Reports + Report Scheduler
- Server2: MS Exchange Server (with mailboxes)
- TCOSS Server

6.2 KCS Software Versions

KCS Link Package: 2.09.03 or above

KCS Server Package: 7.57.04 or above for TCOSS, 7.58.02 or above for TC/Report

KCS Client Package: 5.09.03 or above (TCfW)

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6.3 HyperSoft Software Versions

OmniAnalyser Integration Server Enterprise Edition, Version 8.7 or 9

OmniAnalyser Web Reports is part of the OmniAnalyser Integration Server EE Setup files.

OmniAgent for TOPCALL, Version 8.7 or 9

6.4 Upgrading Existing TC/Report Installations to TC/MA

When upgrading an old TC/Report installation (without OmniAnalyser support), only the information fetched after the upgrade will be available in OmniAnalyser.

Please note that several other prerequisites affect usability of old TCOSS send orders for TC/MA:

- in-events should be archived
- config line 19 must be configured as described below

If you do a new fetch of all information in the TCOSS short term archive, OmniAnalyser web reports can only show correct delivery times for send orders that match both prerequisites.

6.5 Upgrading an Existing OmniAnalyser Installation

If the customer already uses OmniAnalyser Enterprise Edition and just wants to add support for KCS messaging, the following remarks apply.

OmniAnalyser, OmniAgent and OmniAnalyser Web Reports must be upgraded to version 8.7.

Install “OmniAgent for Topcall“ on a separate workstation, where no other OmniAgent (e.g. for Notes or Exchange) runs. Reason for this restriction: the directory import agents for different server types cannot coexist on the same workstation.

Always use the OmniAgent-based Directory Import component for importing KCS user profiles. Do not use the Global Address List import option in OmniAnalyser for this purpose.

6.6 Overview of Installation Steps

The following overview describes a simple new installation:

One TCOSS server and one link server involved, TC/Report and OmniAnalyser not yet installed, MS Exchange server used for mailboxes, same (existing) SQL server used for TCREPORT and OmniAnalyser.

1. Upgrade TCOSS, configure system config line 19

2. Upgrade TCLINK

3. TCOSS user profile changes (queue users etc.)

4. Install and configure TC/Report Fetch Agent

5. Prepare mailboxes for OmniAnalyser

6. Install and configure OmniAnalyser

7. Install and configure OmniAgent

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6.7 Installation Steps in Detail

6.7.1 TCOSS Upgrade

All involved TCOSS instances (except pure media servers) must be upgraded to TCOSS 7.56.03 or above.

TCOSS must be configured to write additional log entries for TC/MA. This is done via wconfig in the TCOSS system configuration:

System Configuration line 19, 2nd position, write log entries for TC/MA:

00 .. no
01 .. write SUBMIT log entries (when a message enters the system)
02 …write IN-ACTION log entries (when an in-event is created)
03 …write SUBMIT and IN-ACTION log entries

Set line 19, 2nd position to 03.

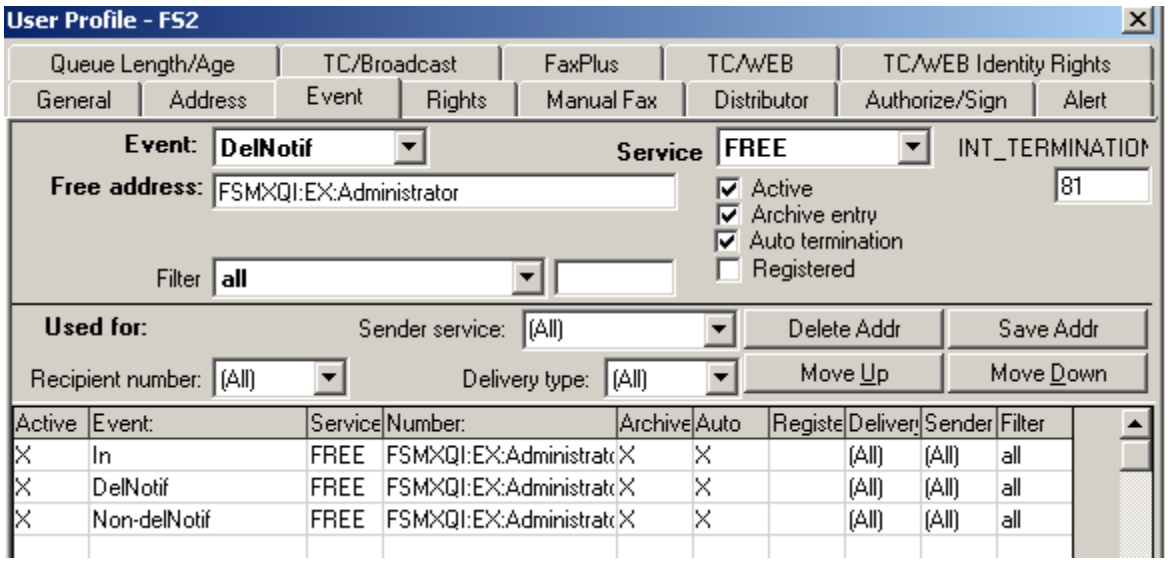
6.7.2 TC/LINK Upgrade

All TC/Link instances used by the customer must be upgraded to Link Package 2.09.03 or above. Send orders created with the new TCLINK version contain information via which link they were posted, even if the originator has a shadow user. With older versions, this information is missing.

TC/LINK should be configured to use status “Cancelled” for messages that cannot be sent. Either configure it via Link Package Setup or use a registry editor to set the value *TOPCALL\ArcNeg* to 1. Otherwise, there will be no indication of message termination until an operator cancels the message via TCFW. This would affect the delivery statistics.

Configuration of In-Events

Make sure that in-events for shadow users are archived (checkbox **Archive entry** in the event definition, see TCFW screen shot below), in order to get complete information about forwarding messages to a mail system. If this is not the case and TCOSS is configured to write Submit log entries, in-events will show up as undeliverable messages in the OmniAnalyser Delivery Time and SLA statistics.



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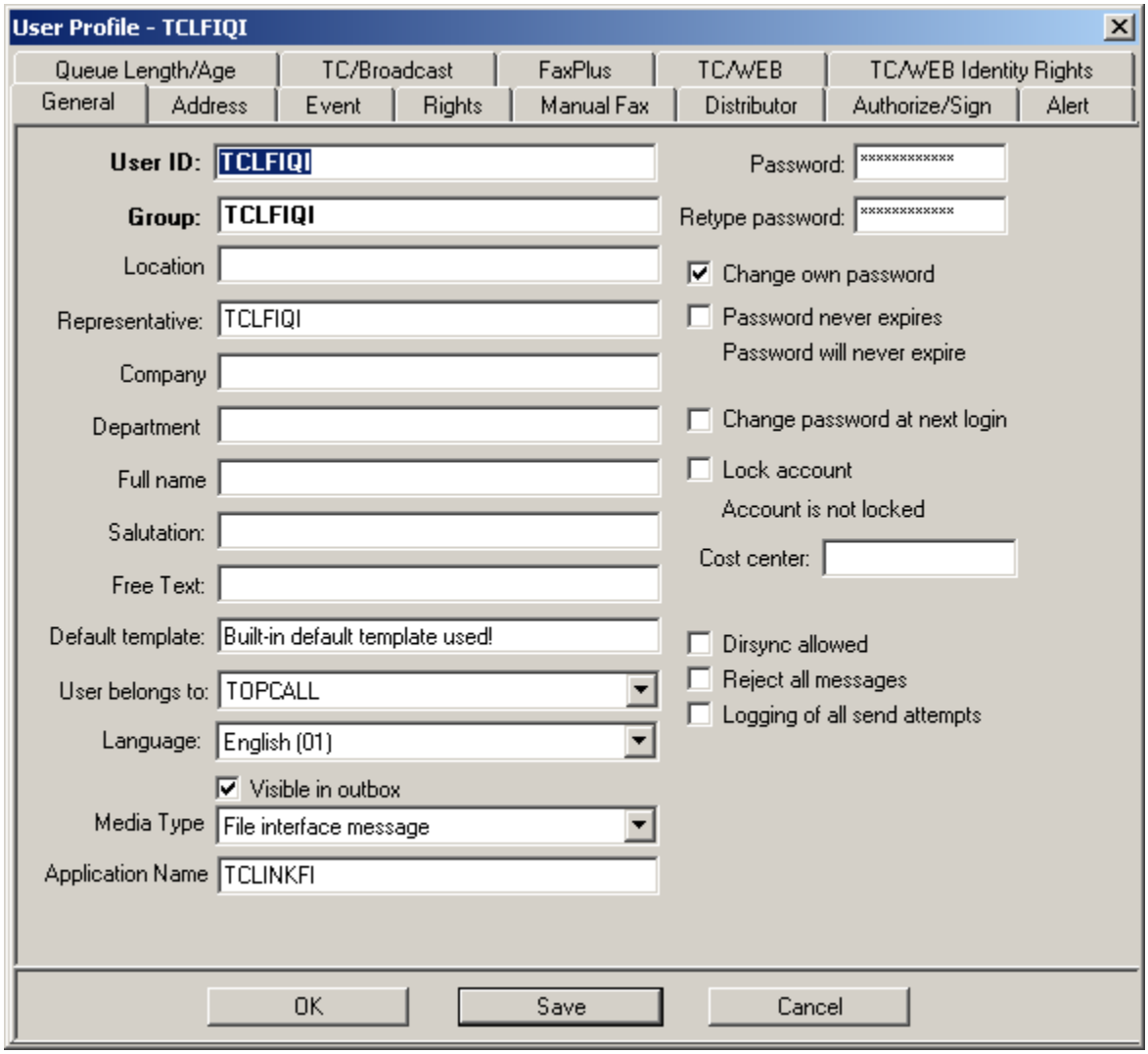
6.7.3 TCOSS User Profile Changes

For this purpose, you need TCFW version 5.14.00 or higher.

For correct reporting of media types and connector names, all queue users polled by applications must be configured correctly via the new fields Media Type and Application Name in the General panel of the TCFW user profile window:



Media Type:
Select the media type that matches the connected mail system or medium.
A list of possible media types is part of chapter “KCS Features Available in OmniAnalyser Reports”, section “Media Types” (2.1.1).

For normal users that have “visible in outbox” set for some purpose, choose the media type “invalid” or leave the media type field empty. This ensures that the user profile information is imported to the OmniAnalyser database and that messages sent to these users are considered as delivered to a local mailbox (instead of a pseudo domain). Therefore, the media type “invalid” is not displayed in reports.

Application Name:
Enter a descriptive name for the application. Usually, you would use the same application name for all

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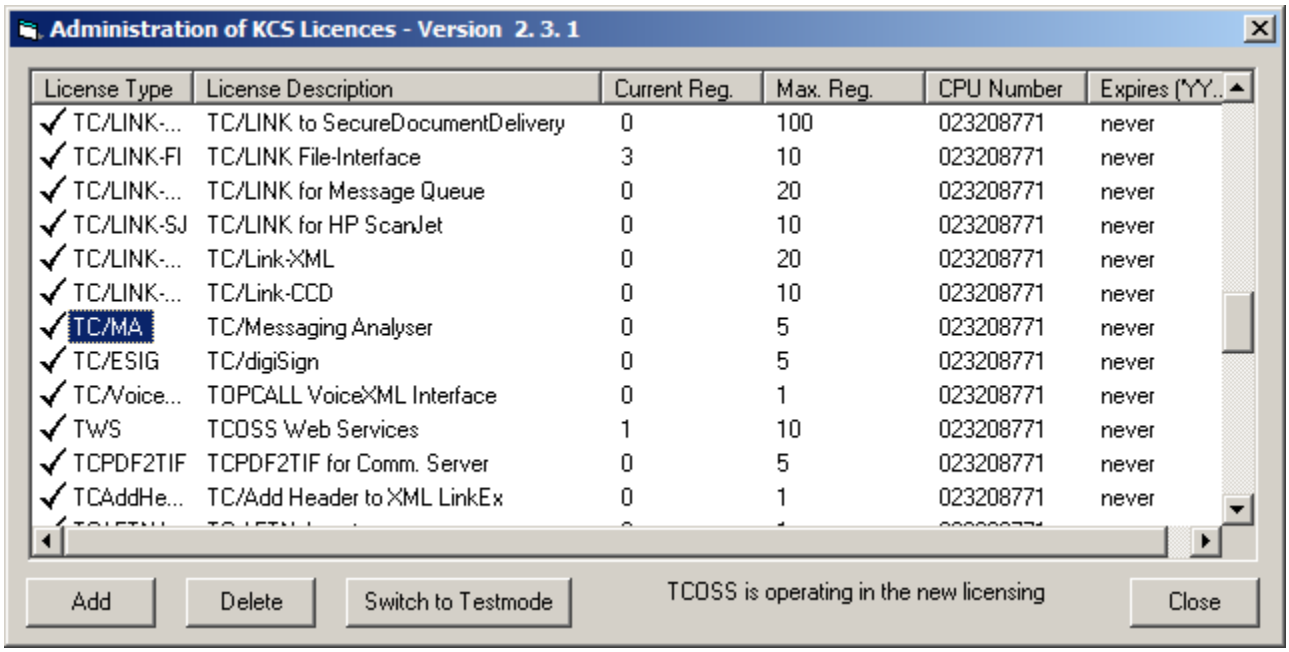
queues polled by an instance. If there are several parallel instances, e.g. for a link, they all might share the same application name.

Note: It is not necessary to restart TC/LINK after editing the queue user profiles.

6.7.4 TC/Report Fetch Agent Installation and Configuration

6.7.4.1 License

A special license for KCS Messaging Analyzer is now available. This license is counted per workstation. You need this license if TC/Report is only used in cooperation with OmniAnalyser (no old reports used). For backward compatibility, the TC/Report license can replace the TC/MA license.



License Type	License Description	Current Reg.	Max. Reg.	CPU Number	Expires (YY..
TC/LINK-...	TC/LINK to SecureDocumentDelivery	0	100	023208771	never
TC/LINK-FI	TC/LINK File-Interface	3	10	023208771	never
TC/LINK-...	TC/LINK for Message Queue	0	20	023208771	never
TC/LINK-SJ	TC/LINK for HP ScanJet	0	10	023208771	never
TC/LINK-...	TC/Link-XML	0	20	023208771	never
TC/LINK-...	TC/Link-CCD	0	10	023208771	never
TC/MA	TC/Messaging Analyser	0	5	023208771	never
TC/ESIG	TC/digiSign	0	5	023208771	never
TC/Voice...	TOPCALL VoiceXML Interface	0	1	023208771	never
TWS	TCOSS Web Services	1	10	023208771	never
TCPDF2TIF	TCPDF2TIF for Comm. Server	0	5	023208771	never
TCAddHe...	TC/Add Header to XML LinkEx	0	1	023208771	never

6.7.4.2 Installation

For TC/MA, the Fetch Agent's TCOSS user needs the following permissions:

- Tech User
- Read System Address Book
- Read System User Profiles
- Read System Folder
- List Inbox and Outbox of all users
- Open Inbox and Outbox of all users

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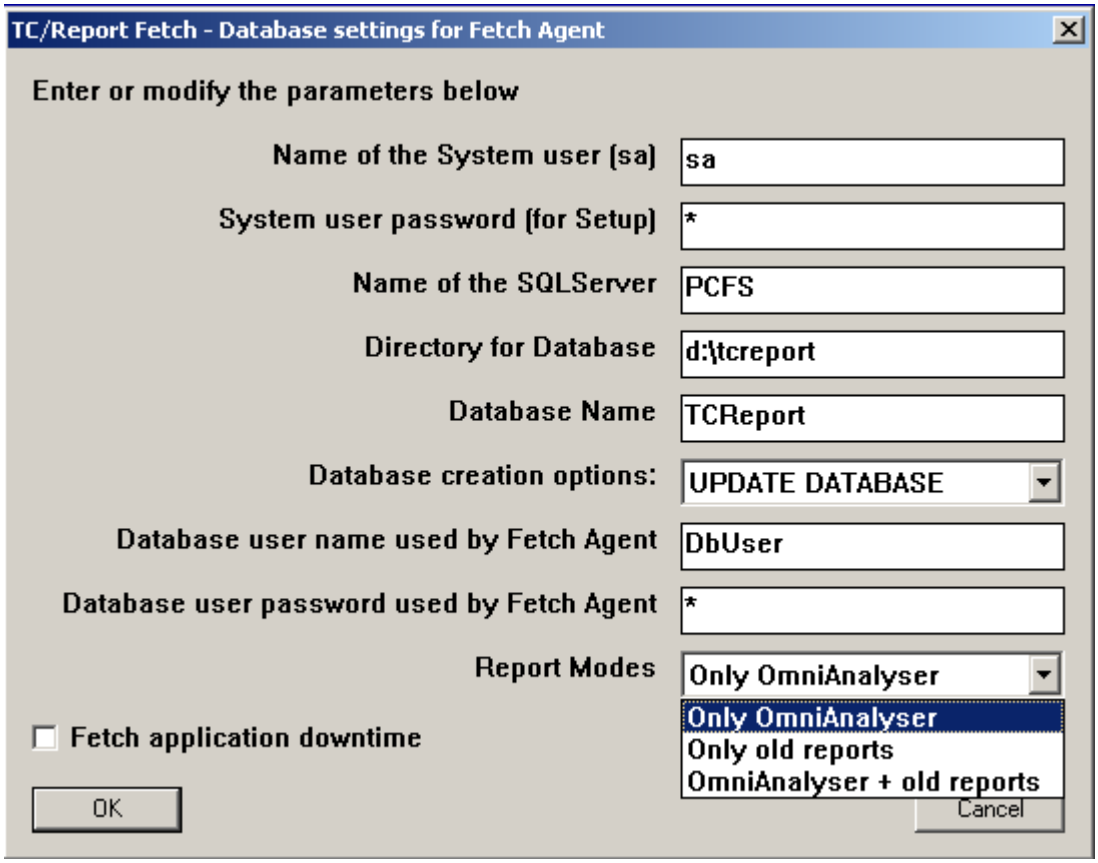
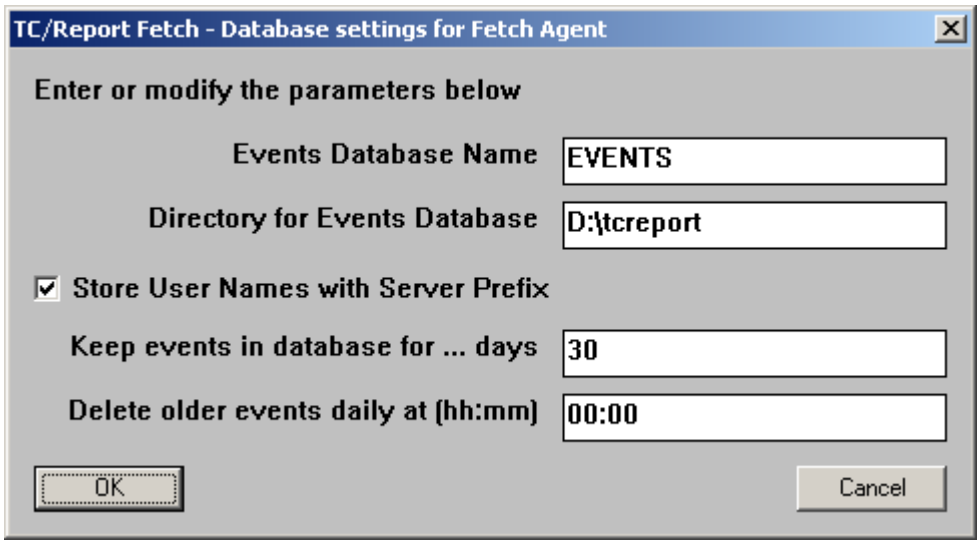


In the setup screen *Database settings for Fetch Agent*, select the correct operating mode:

- only with OmniAnalyser (TC/MA license needed)
- only with old reports, Crystal Reports based or custom reports (TC/Report license needed)
- with OmniAnalyser and old reports (TC/Report license needed).



Setup then asks for additional configuration of the events database.

Events Database Name:

It is recommended to use a separate database for message tracking events, - as a different cleanup mechanism is used for the event tables and for the standard TC/Report tables: The oldest entries of

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standard TC/Report tables are deleted when the database size exceeds a configured value. The oldest entries of the event tables are deleted when they are older than a configured amount of days.

It is nevertheless possible to use the standard TC/Report database for events also. In this case, the second parameter (Directory for Events Database) is ignored.

Directory for Events Database:
If using a separate database for message tracking events, enter here the folder where the database shall be located. Default value: same as for TC/Report database.

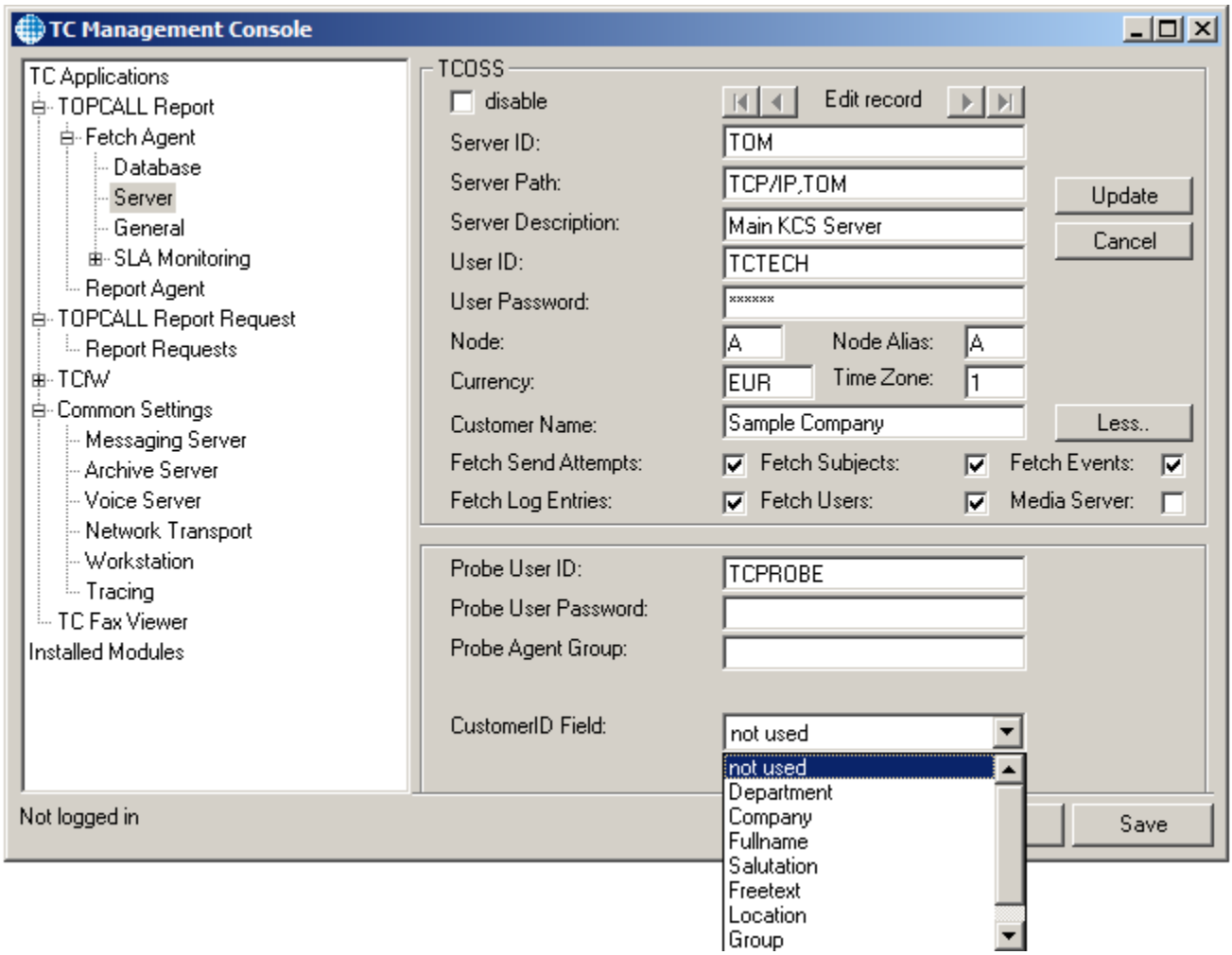
Store User Names with Server Prefix:
You must select this checkbox if multiple TCOSS instances will be stored in one OmniAnalyser database. The effect is that user names (in message tracking and directory) will have the TCOSS instance name as a prefix, e.g. “DEMOTC.FS” instead of “FS”. Default: no

Keep events in database for … days:
Specify how long events shall be kept in the database until they are deleted. Default: 30 days

Delete older events daily at (hh:mm):
The Fetch Agent will perform event database cleanup daily at the specified local time.

6.7.4.3 TC/Report Fetch Agent Configuration

The following configuration changes must be done after Setup via TC/MC.



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In the Server panel of the Fetch Agent property page, make sure that the checkboxes **Fetch Users** and **Fetch Log Entries** are enabled, and the checkbox **Fetch Events** is enabled for all TCOSS instances that shall be used for TC/MA.

If event tracking for media servers is needed, configure all involved media servers and make sure that the **Fetch Events** checkbox is enabled for the media servers.

Fetch Send Attempts is optional, - enable it if you want to see events for every send attempt.

Attention: The server ID of the media server must be the same as the media server's network name. TCOSS truncates media server names to 8 characters. Therefore, event tracking for media servers does not make sense if the media server name is longer than 8 characters, e.g. two media servers TQA-SOMEDI1 and TQA-SOMEDI2 will be treated like a single server TQA-SOME.

If TC/Report is only used for TC/MA, it is not necessary to import hardware channel information or to configure channels. Information about TCOSS channels is retrieved automatically when the Fetch Agent starts.

For LCR systems, configure **Node** and **Node Alias** correctly.

If a TCOSS instance is used for several customers and a separate OmniAnalyser database is used per customer, select a matching **CustomerId Field** value from the list box, otherwise select "not used".

The Customer ID can be in one of the following user profile fields:
Company, Department, Fullname, Salutation, Freetext, Location, Group, Costcenter.

See also section 1.4.2.

Daily full fetch of user profiles:
You should also configure TC/Report to fetch all user profiles daily at a certain time. This is necessary because the current version of the Fetch Agent cannot recognize changes in the fields Group, Costcenter, Location and in queue-user specific fields. Configure a daily full fetch of user profiles via the General panel of the Fetch Agent's property page in TC Management Console.

Automatic creation of TCDIROPT.XML file

It is recommended to let TC/Report create a sample configuration file for directory import into OmniAnalyser (TCDIROPT.XML) after configuring the servers. Use a registry editor to set registry value HKLM\Software\TOPCALL\TCReport_Fetch\TCMA\TCDirOptXMLFile to the path name of the XML file to be created. The file is created newly every time TC/Report Fetch Agent starts.

It is therefore recommended to let TC/Report create the file after installation (or after adding servers), and to clear the registry value afterwards.

6.7.5 OmniAnalyser Installation and Configuration

6.7.5.1 Installation of OmniAnalyser

For detailed information about prerequisites and installation of OmniAnalyser, please consult the OmniAnalyser manual. This chapter contains only the most important information.

Prerequisites:

Internet Explorer 6.0 or above must be installed locally.
If OmniAnalyser Web Reports are also installed on this computer, MS IIS 4.0 or above must be installed locally.

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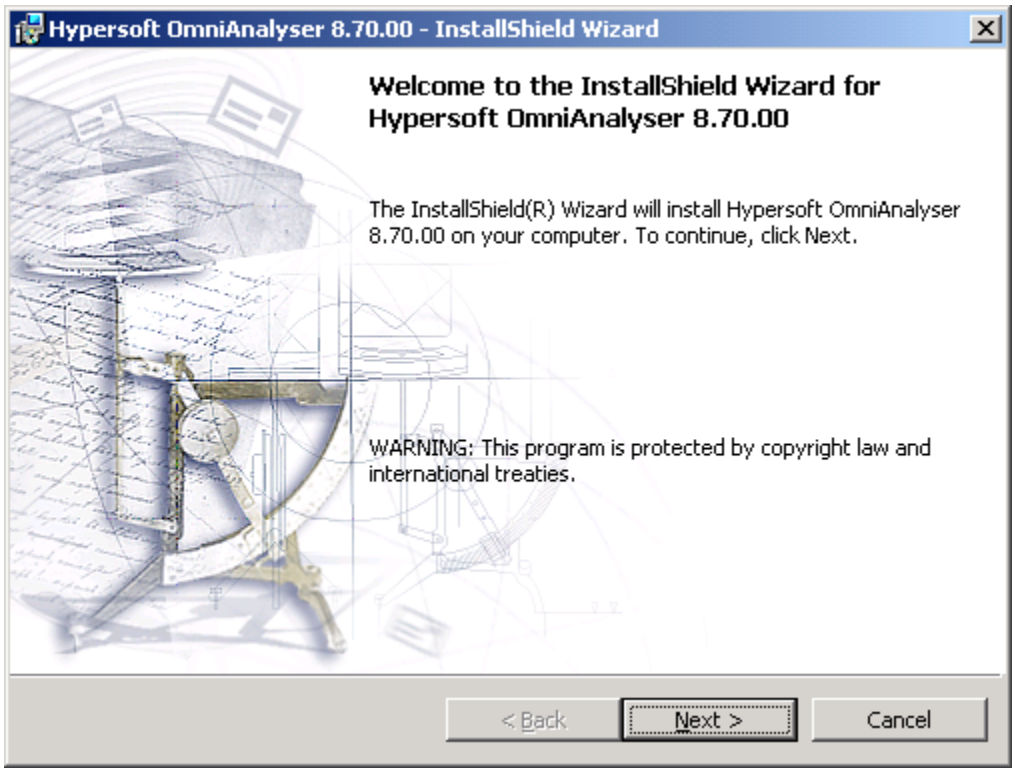
ODBC access to a MS SQL Server 7.0 or above (case insensitive collation) must be available. The person who installs OmniAnalyser should either have database creator rights on the SQL server or know the credentials of an SQL server user who has these rights.

Setup will need two mailboxes on a mail server: for OmniAnalyser and for an operator.
Create these mailboxes on MS Exchange Server or on a mail server with SMTP/POP3 access.

Installation:

Start Setup by double-clicking the file “Hypersoft OmniAnalyser 8.70.00.msi” on the OmniAnalyser Setup medium.



Click Next.

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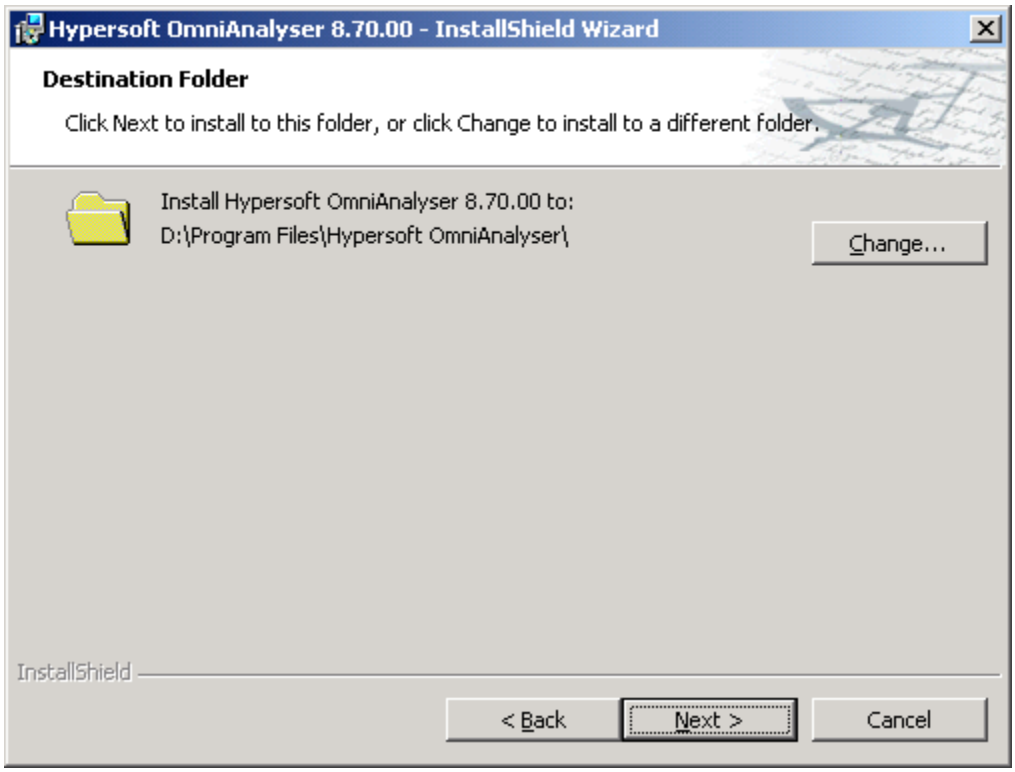
Accept the license agreement.



Accept or change the destination folder.

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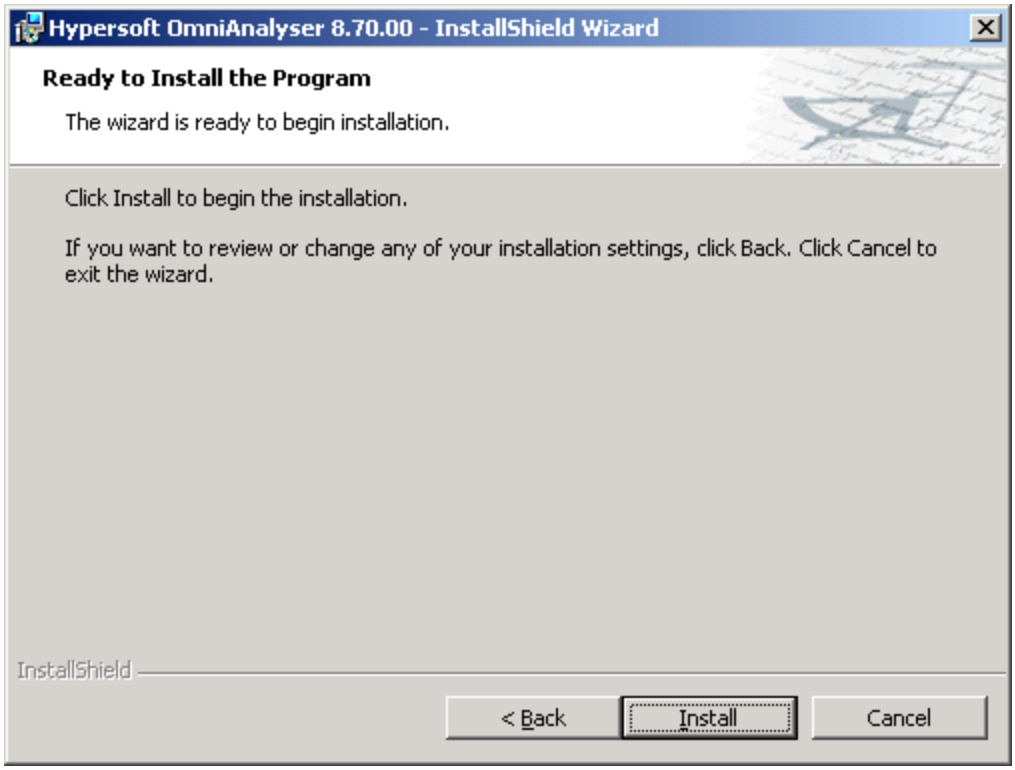
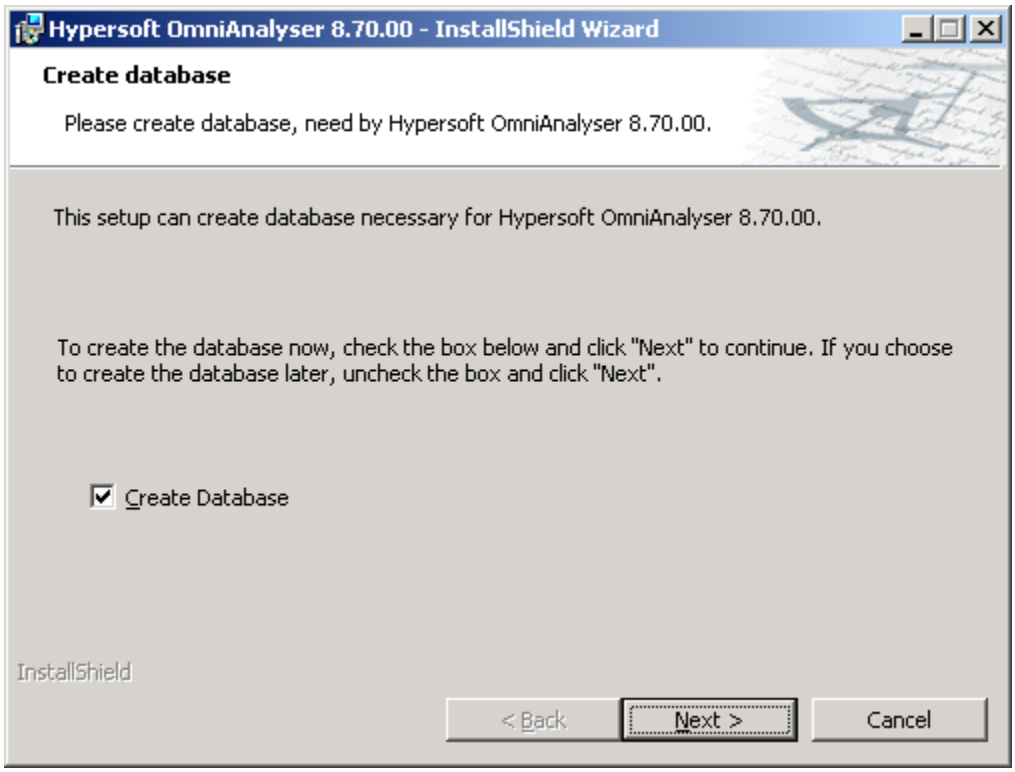


Click Install to begin the installation.



Choose Create Database to install the database.

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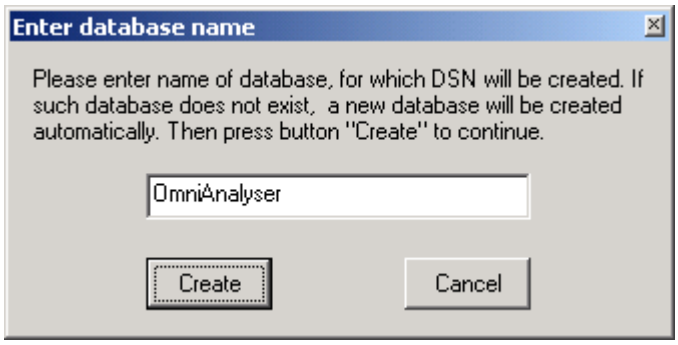
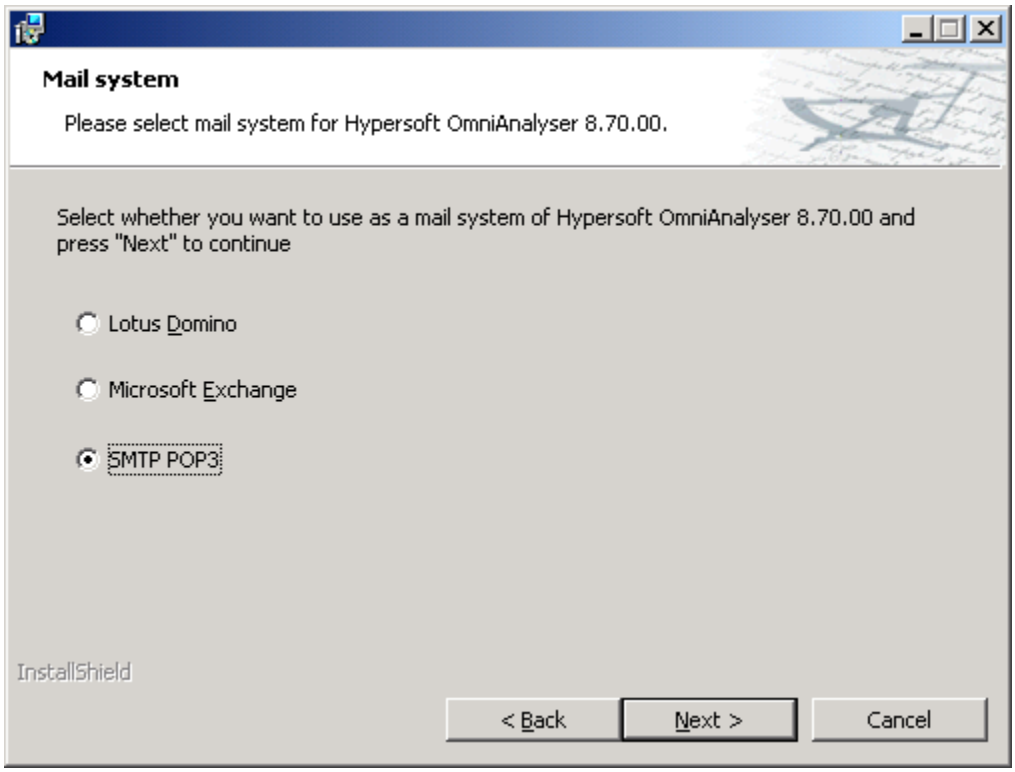


Accept or change the database name, then click Create.

Enter or select the name of the SQL server. If the logged-in user has database creator rights on this server, you can use the trusted connection option. Otherwise, clear the checkbox and enter ID and password of an SQL user who has these rights. Then click OK.



Select a mail system for mailbox access. The easiest way of configuration (even if the mail server is an Exchange server) is SMTP POP3. This example shows configuration for SMTP POP3.

Click Next.

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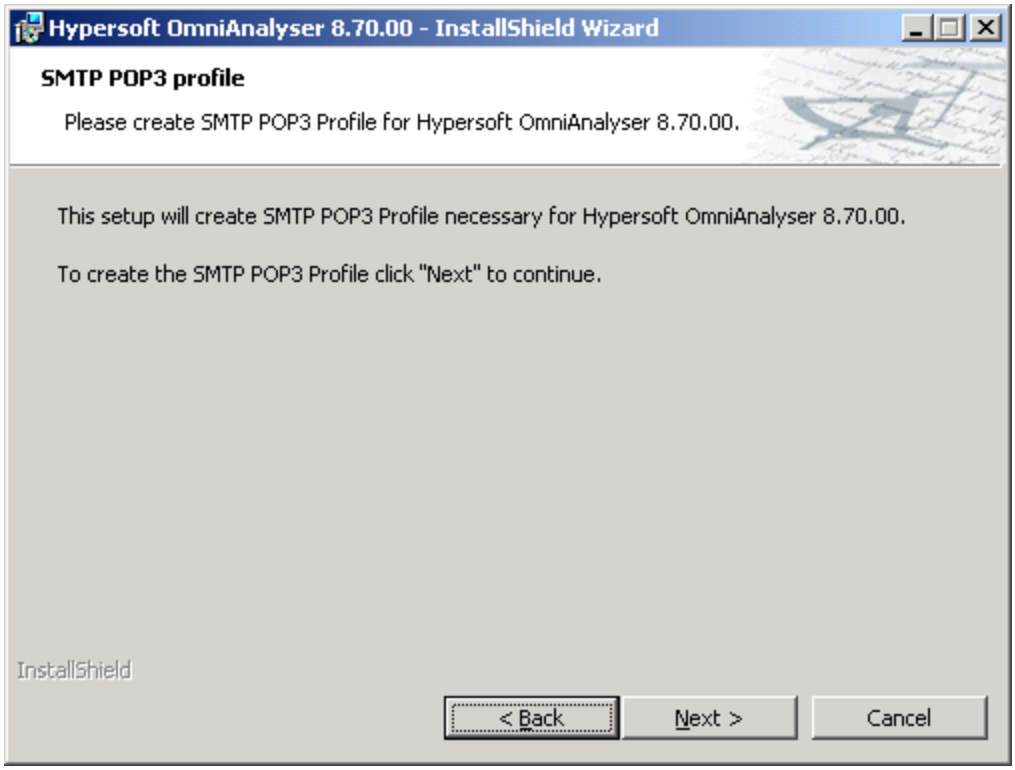
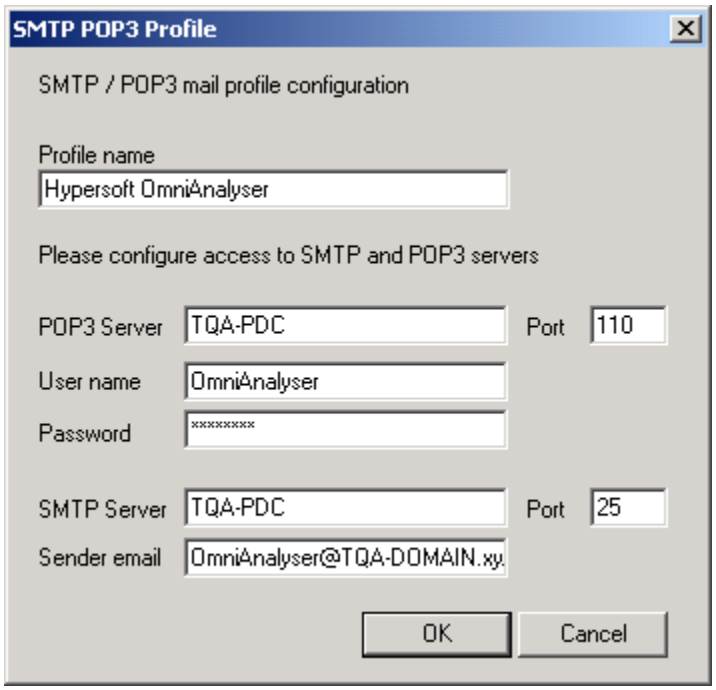


Click Next to create the profile.



Accept or change the profile name. Enter the POP3 and SMTP server name(s), and the credentials for accessing the mailbox you created for OmniAnalyser. In the Sender email field, enter the email address of the OmniAnalyser mailbox. Then click OK.

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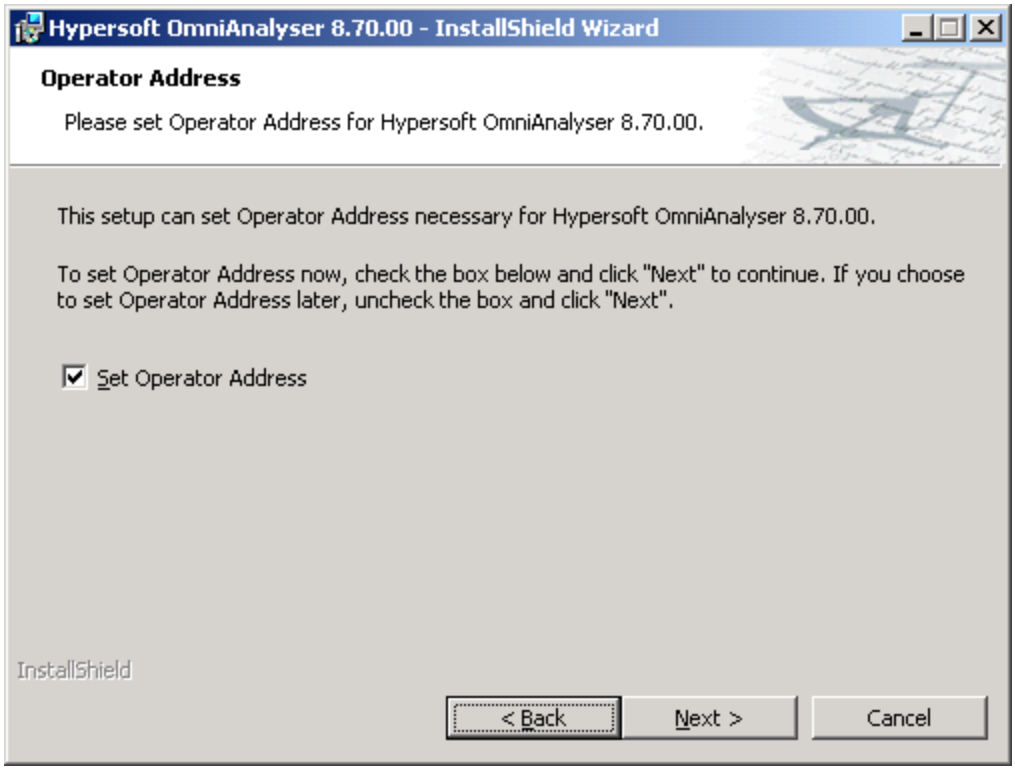
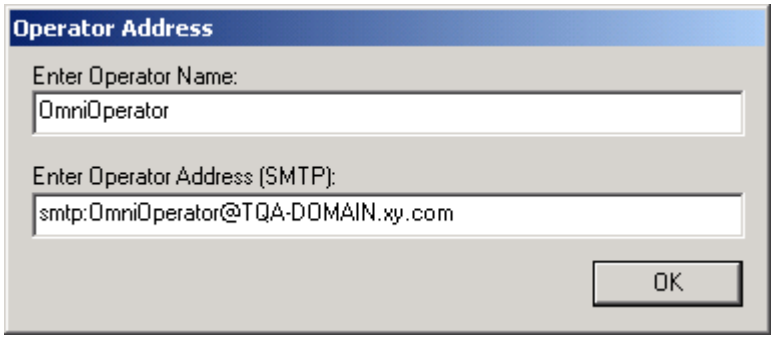
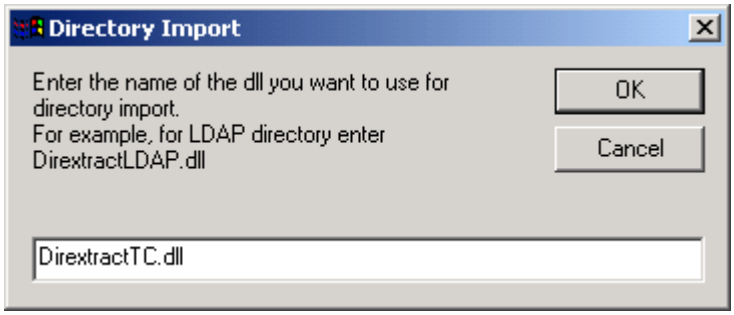


Setup prompts you to configure an operator address. The operator will get emails about OmniAnalyser operations. Click Next to proceed.



Enter the name and SMTP address (with smtp: as prefix) of the operator and click OK to proceed.



Setup will install a directory import DLL that enable manual directory import from the OmniAnalyser GUI. To install the DLL for KCS user import type DirextractTC.DLL into the text box. (The DireextractLDAP.dll is for directory import from Microsoft Exchange). Then click OK.

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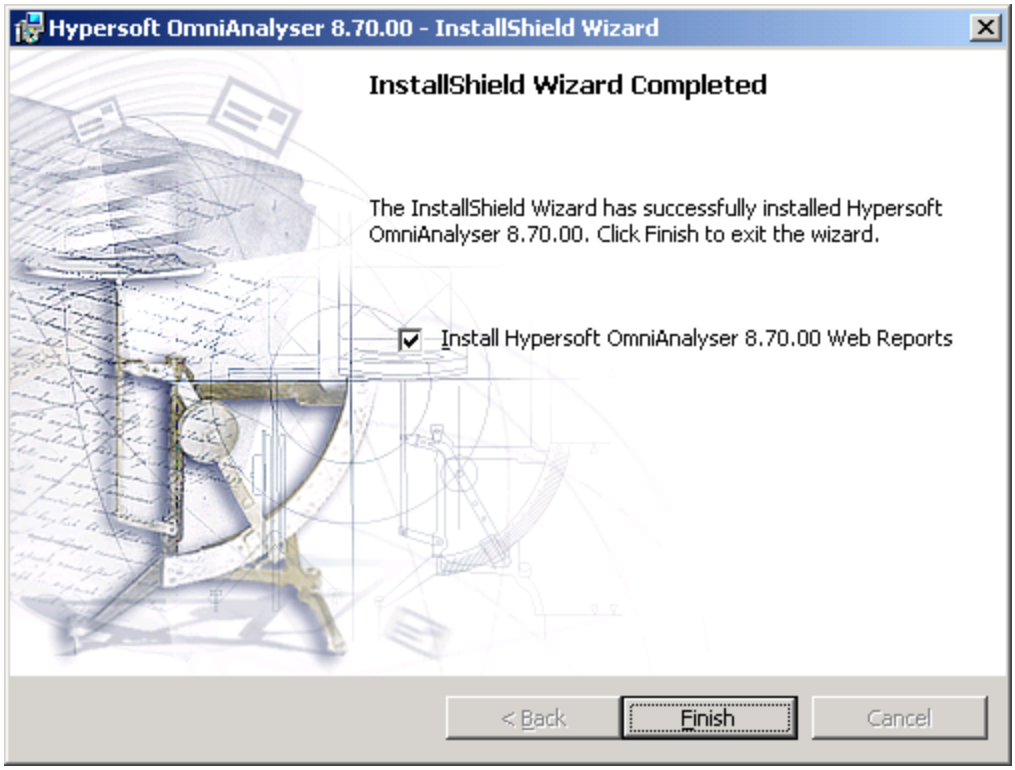
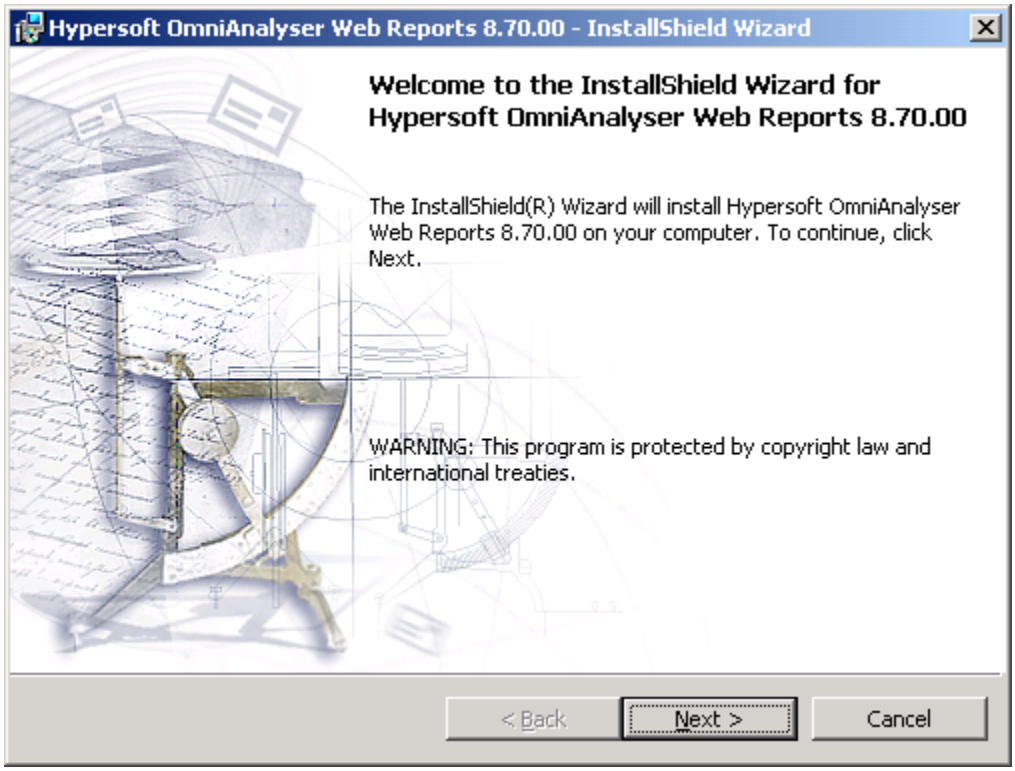


Now Setup of OmniAnalyser is complete, and you can continue with installation of the OmniAnalyser Web Reports. Activate the checkbox and click Finish.

6.7.5.2 Installation of OmniAnalyser Web Reports

Note: If the Web Reports shall be installed on a separate computer, you can start this installation via “Hypersoft OmniAnalyser Web Reports 8.70.00.msi” on the OmniAnalyser installation medium.



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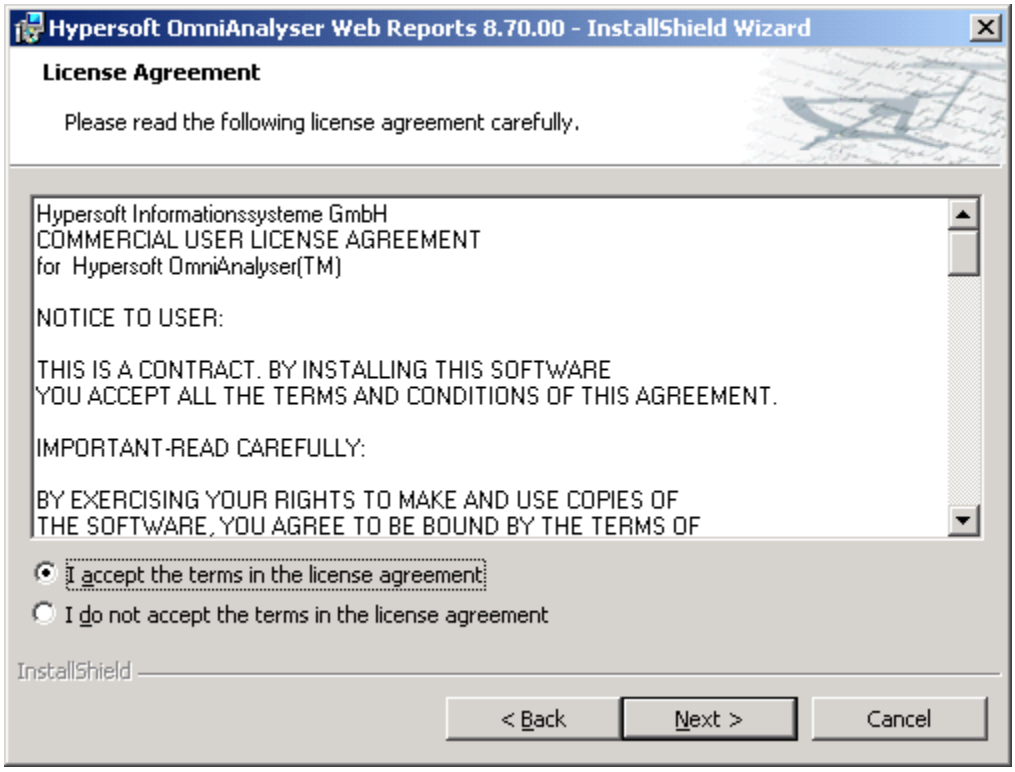
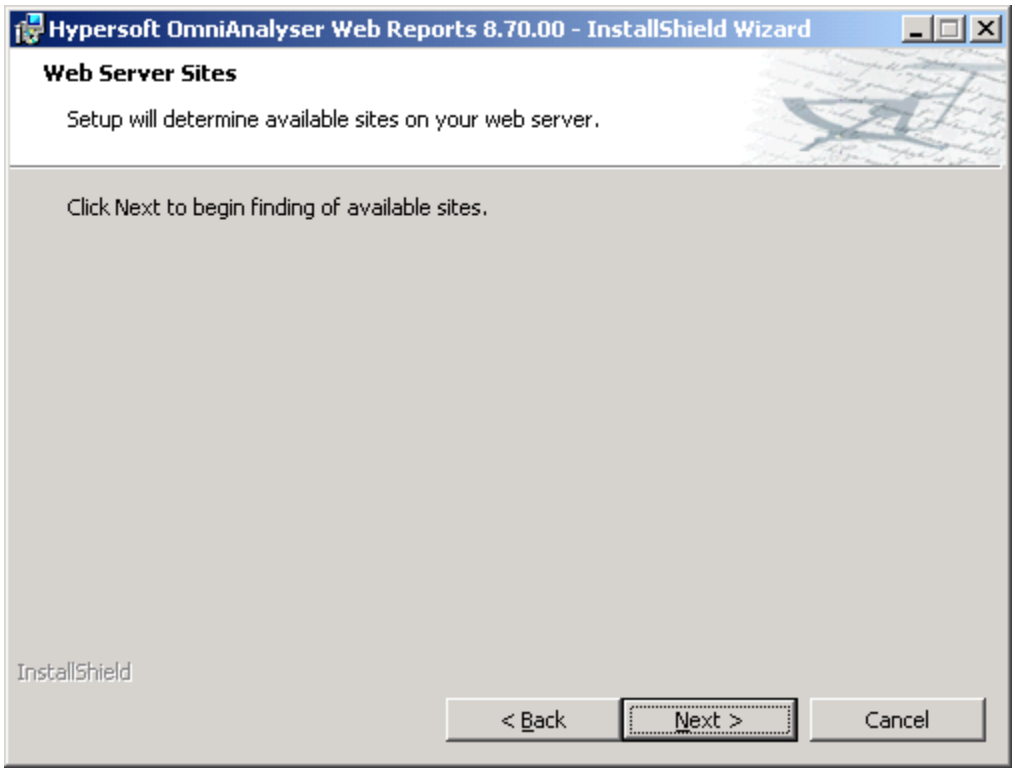
Click Next to start the installation.



Accept the license agreement and click Next.



Click Next to get a list of available web server sites.

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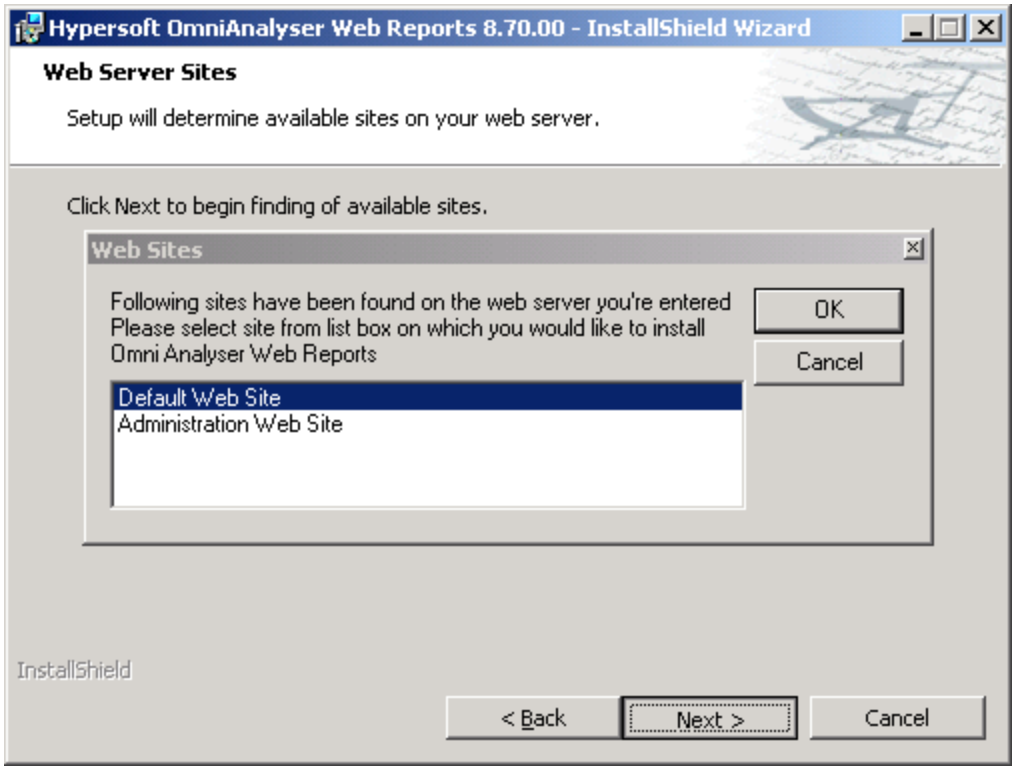
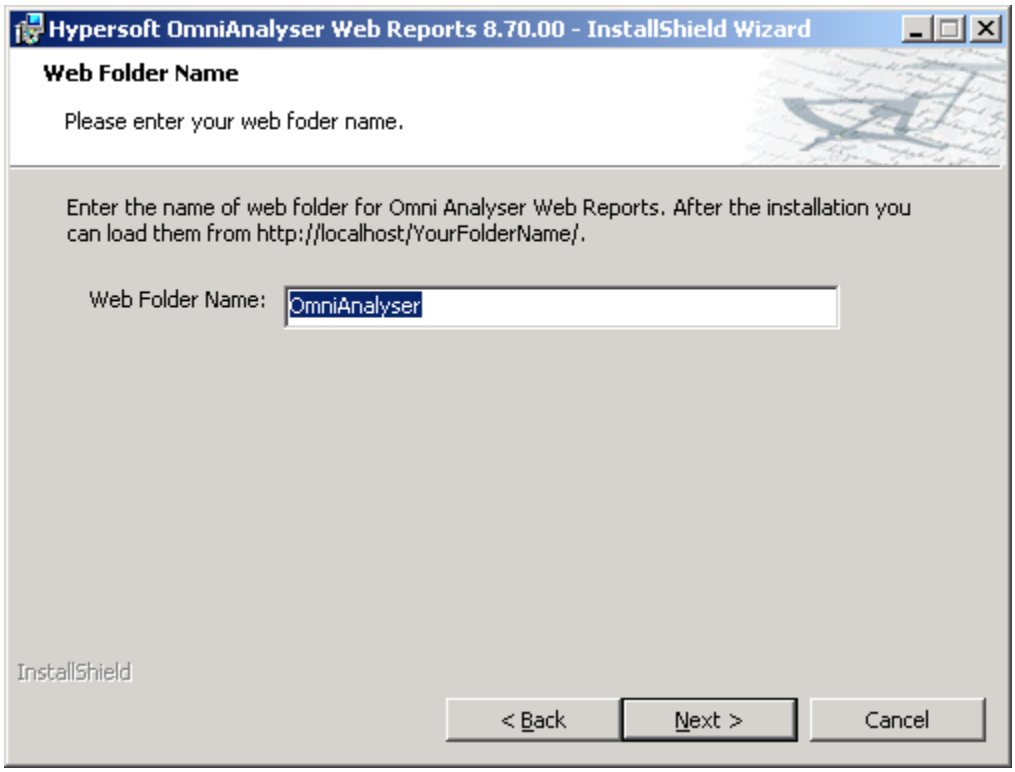


Select the Default Web Site and click Next.



Accept or change the name of the web folder (this will be part of the URL where the reports are available). Click Next.

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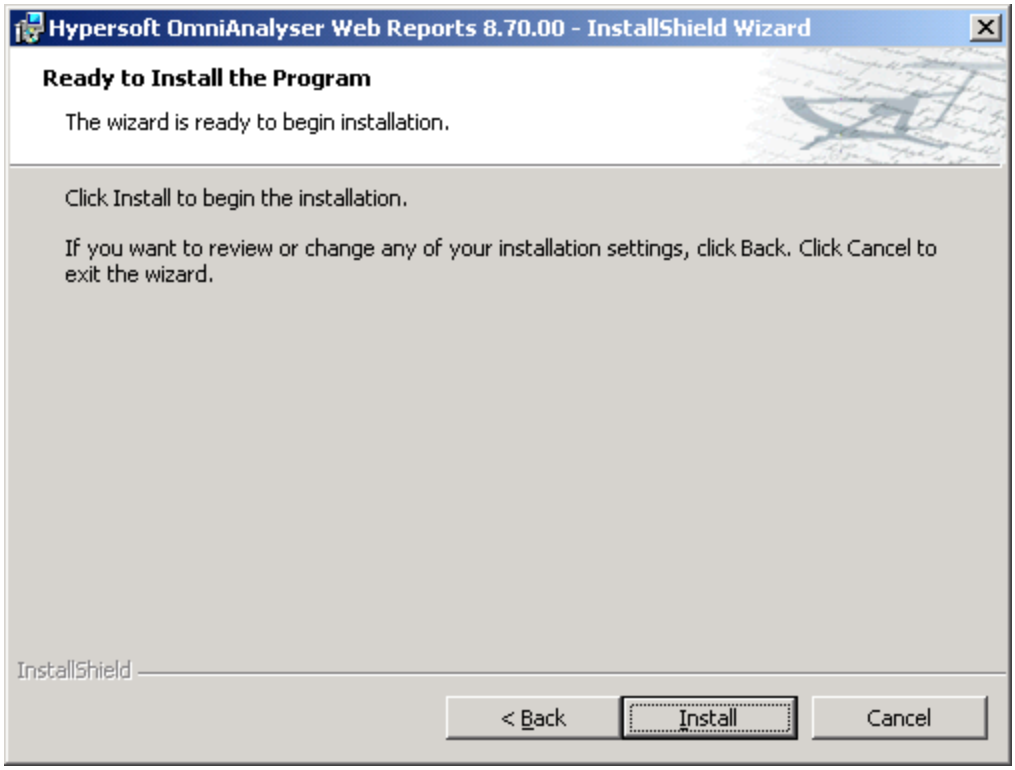
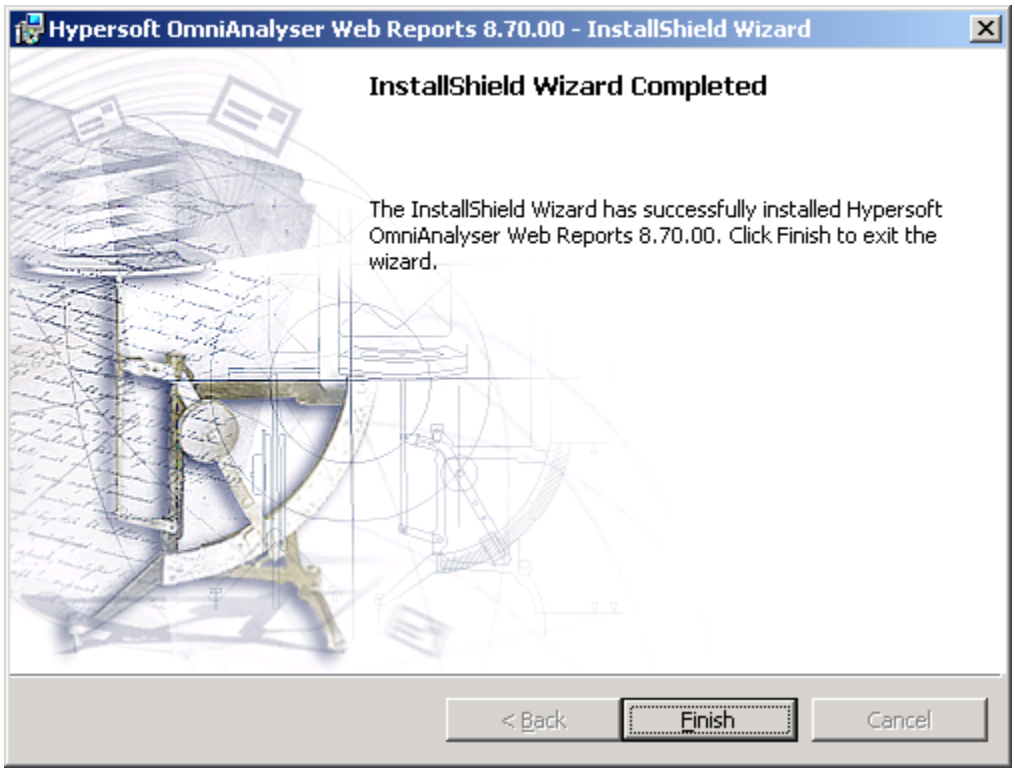


Click Install to install the reports.



Click Finish to exit the installation.

6.7.5.3 Configuration of OmniAnalyser

Start HyperSoft OmniAnalyser (*Start* | *Programs* | *HyperSoft OmniAnalyser* | *OmniAnalyser*).

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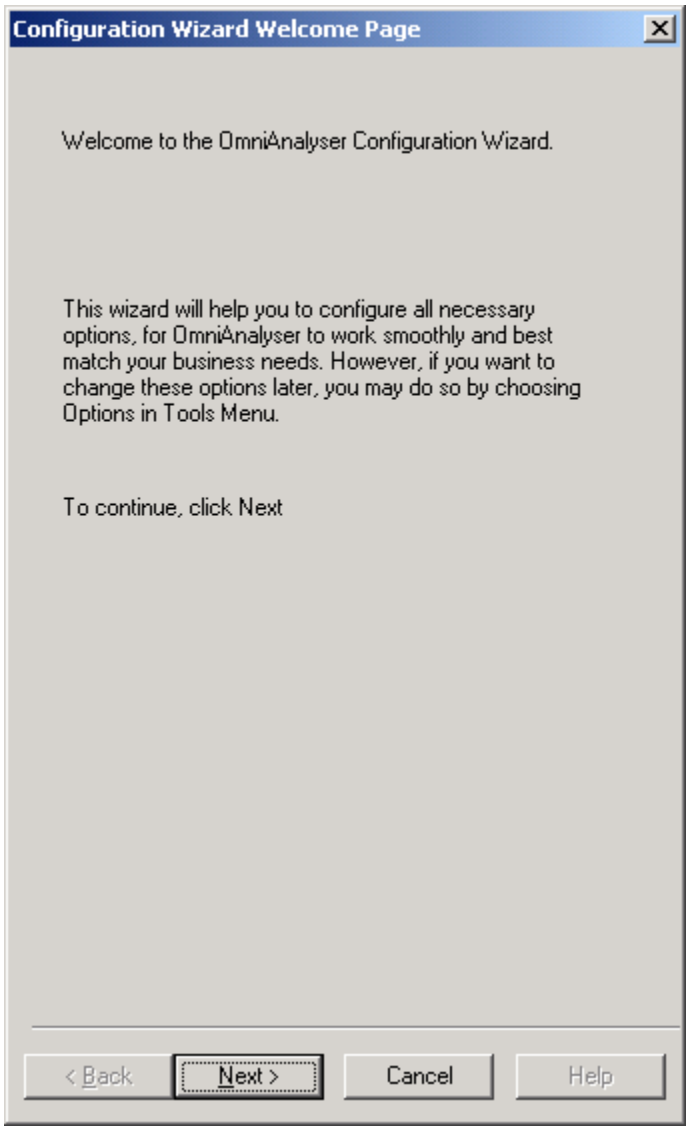
When you start the application for the first time, the OmniAnalyser Configuration Wizard is opened and prompts you to view and configure some basic settings. If you have run Setup as described above, it is not necessary to go through the wizard steps. You can exit the wizard by clicking Cancel.



Click Cancel to start working immediately.

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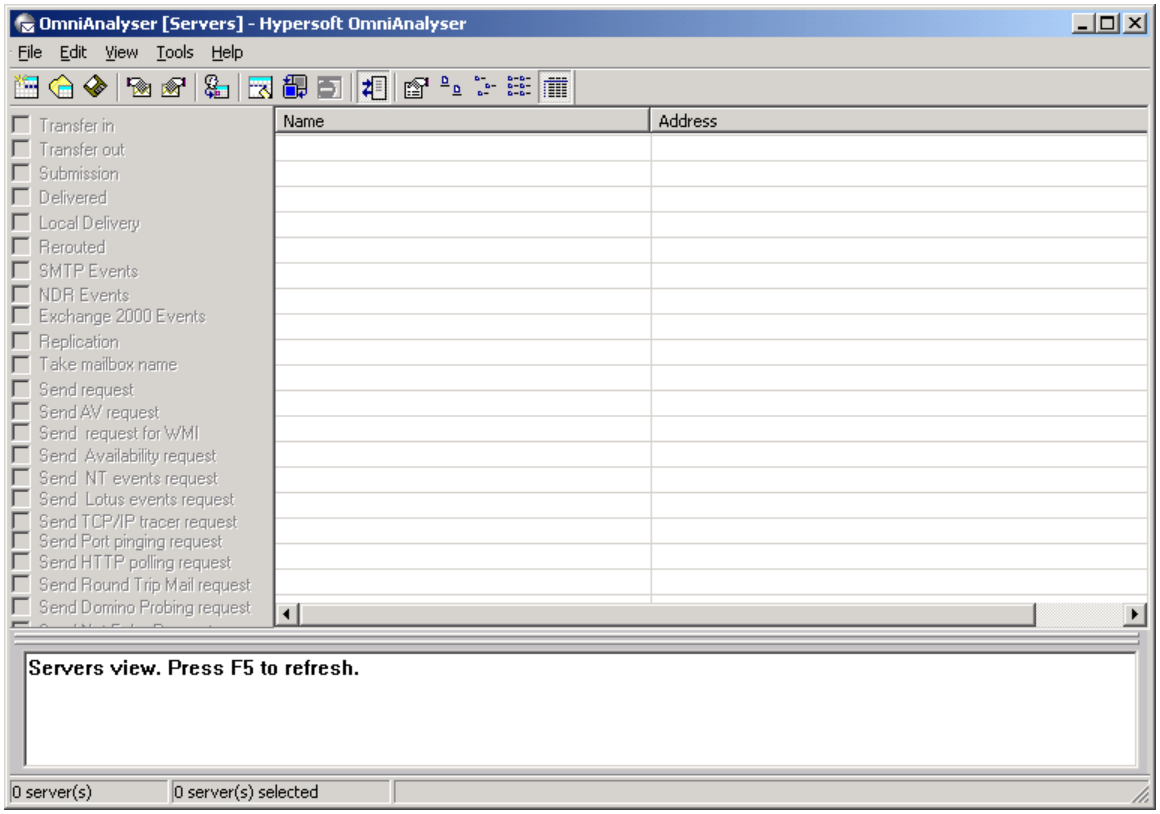
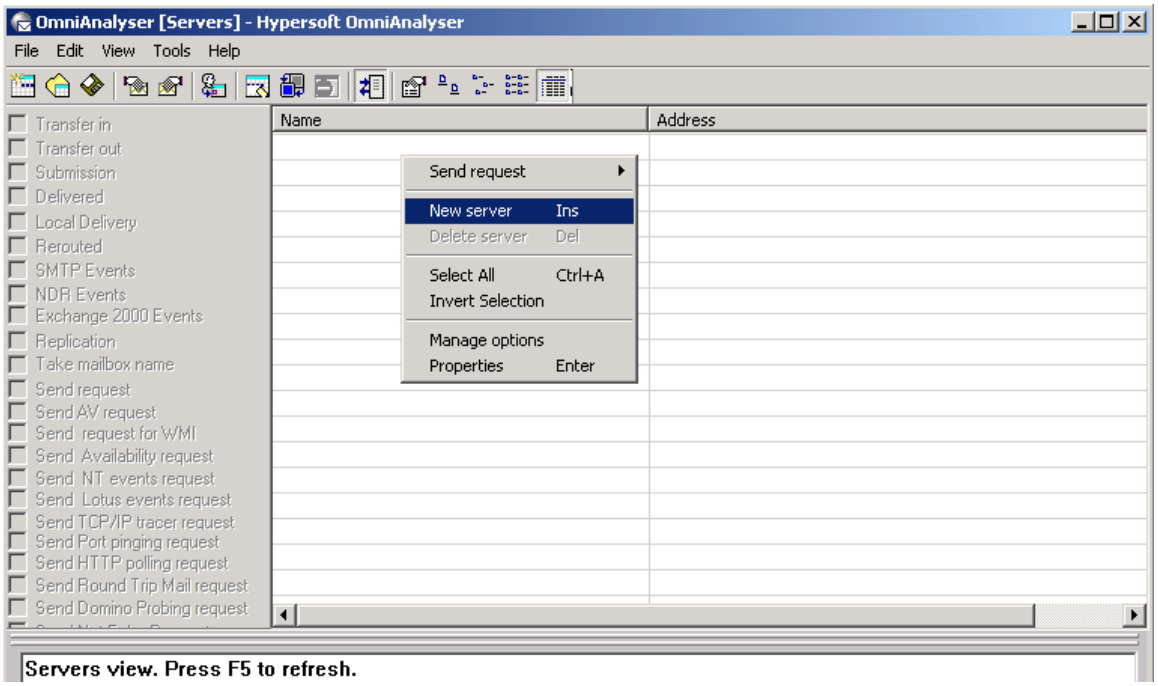


No servers are configured yet.



To configure the TCOSS instance that shall be subject to reporting, right click into the empty list on the right side of the window and select New server from the context menu.

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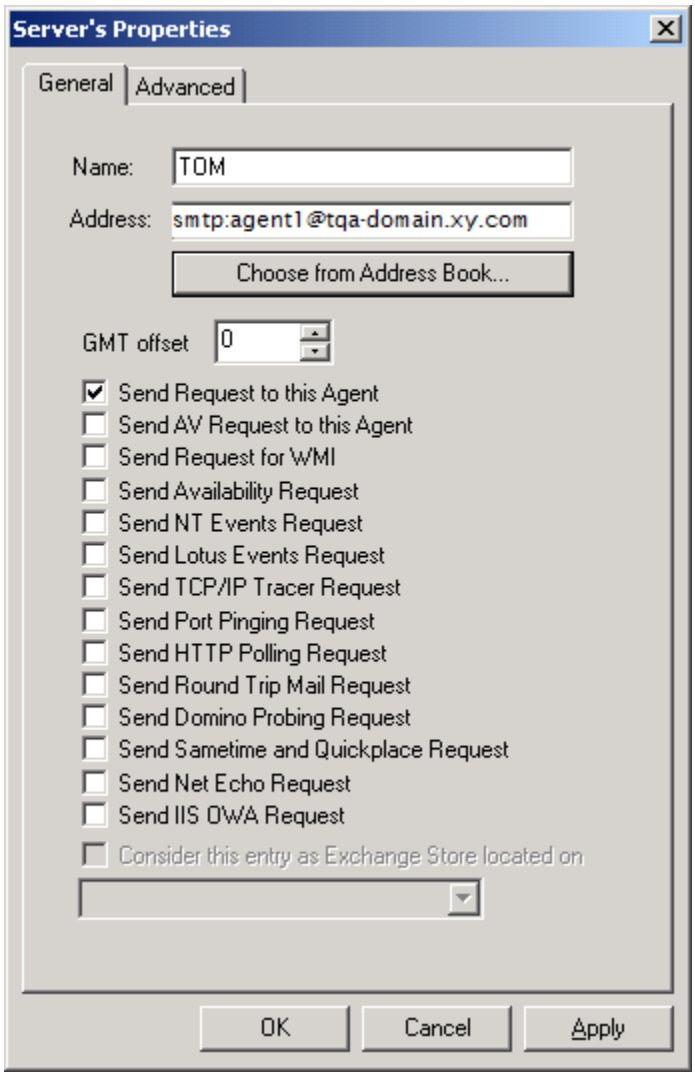

Configure the server properties.

Name: the server name as configured in the TC/Report database.

Address: smtp: followed by the email address of the OmniAgent mailbox that will be used for this server.

Activate the checkbox “Send Requests to this Agent”.

You can configure a GMT offset here, if the TCOSS server is not in the GMT time zone.

6.7.6 OmniAgent Installation and Configuration

6.7.6.1 Installation

Prerequisites

OmniAgent can be installed on any computer that can access the TC/Report database via ODBC.

OmniAgent needs a mailbox for each monitored server. The mailbox should be on a mail server accessible via SMTP and POP3. In this example, the OmniAgent mailbox is called agent1 and is situated on the same mail server as the OmniAnalyser mailbox.

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MSXML 4.0 must be installed on the local computer. Install MSXML Version 4.0 via the batch file install_xml.bat. The batch file and the MSXML 4 modules are copied to folder C:\TOPCALL\SHARED\MSXML4 during Setup of the TC/Report Fetch Agent.

For your information: MSXML4 is also installed as part of the KCS Link Package (TC/LINK-FI with XML protocol, TC/LINK-CCD).

The syntax of the batch command is:

install_xml <SetupDirectory> <WindowsSystemDirectory>

Parameters:

<*SetupDirectory*>: full path name of the folder where install_xml resides
(files are copied from this folder)

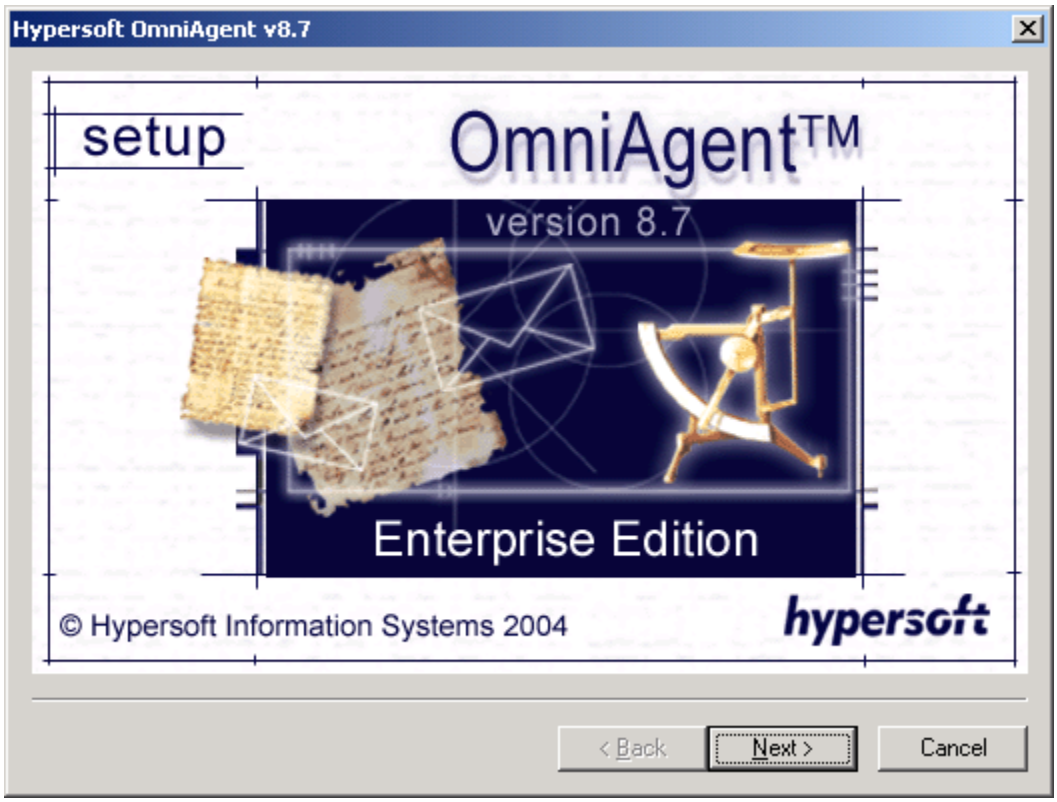
<*WindowsSystemDirectory*>: full path name of the Windows System folder
(files are copied to this folder)

Important:

If OmniAgent runs on the same computer as OmniAnalyser, you must stop OmniAnalyser and the OmniAnalyser service during setup. Otherwise, setup fails with a file access error.

Installation:

The OmniAgent for TOPCALL is installed via RUNME.EXE on the OmniAnalyser Setup medium.



Click Next.

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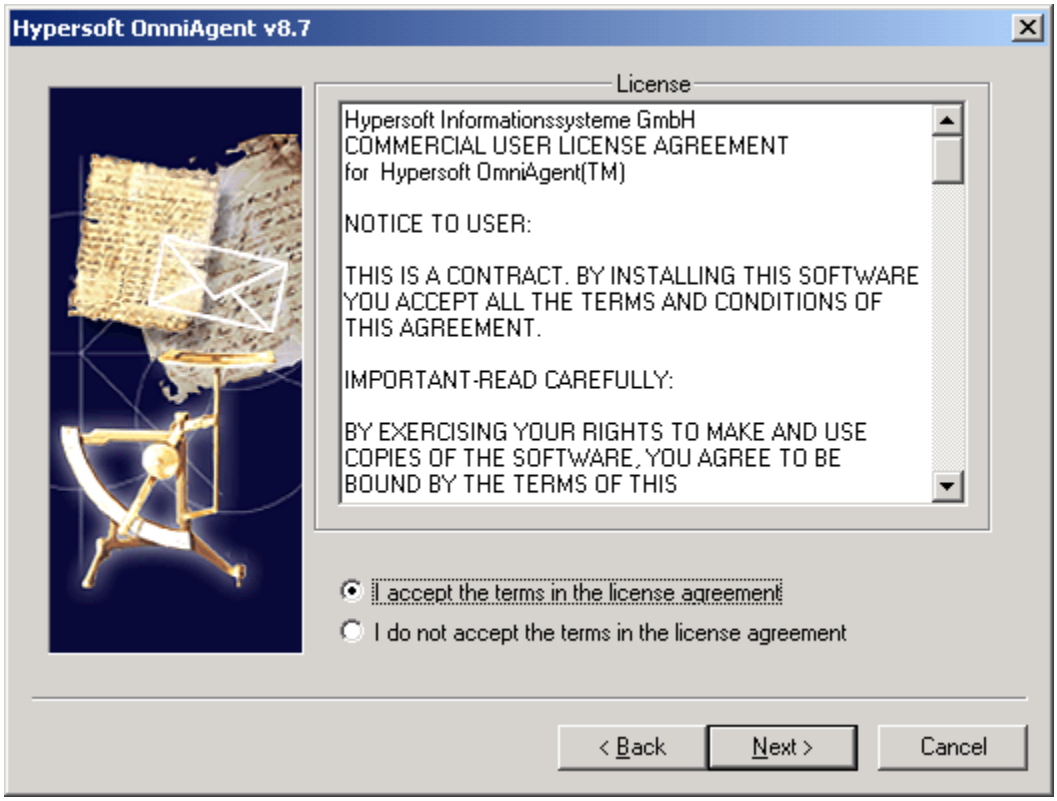
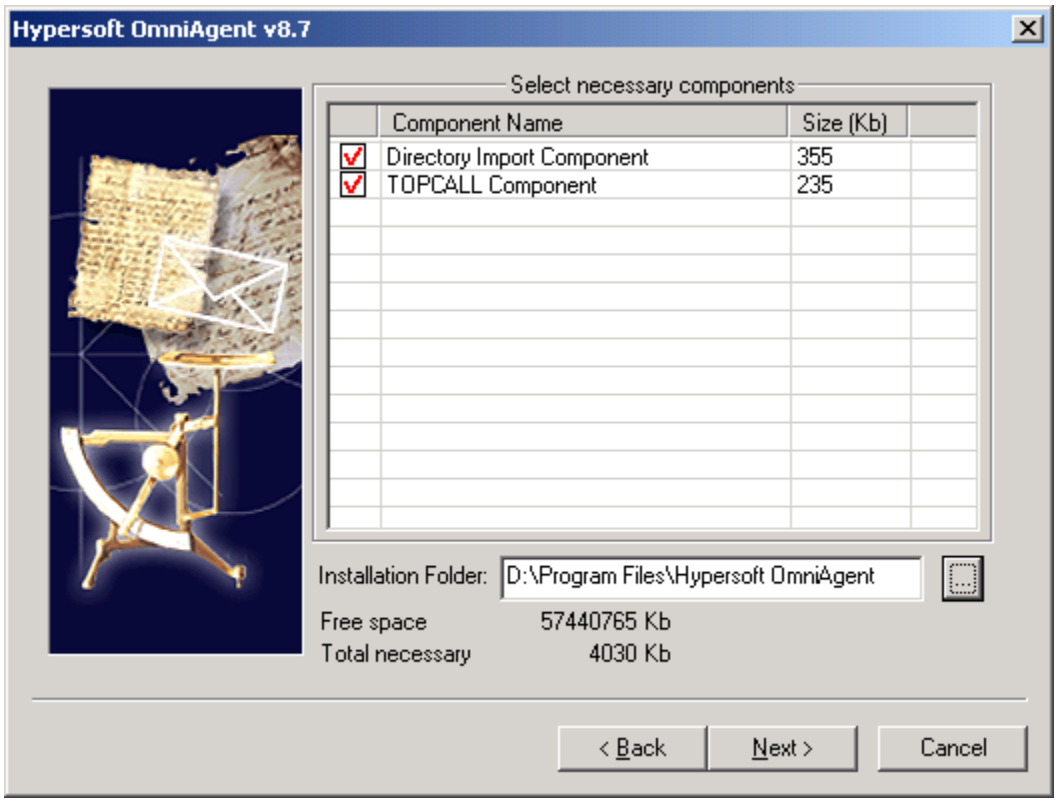


Accept the license agreement and click Next.



Select both components (Directory Import Component only if needed) and choose an installation folder. Click Next to continue.

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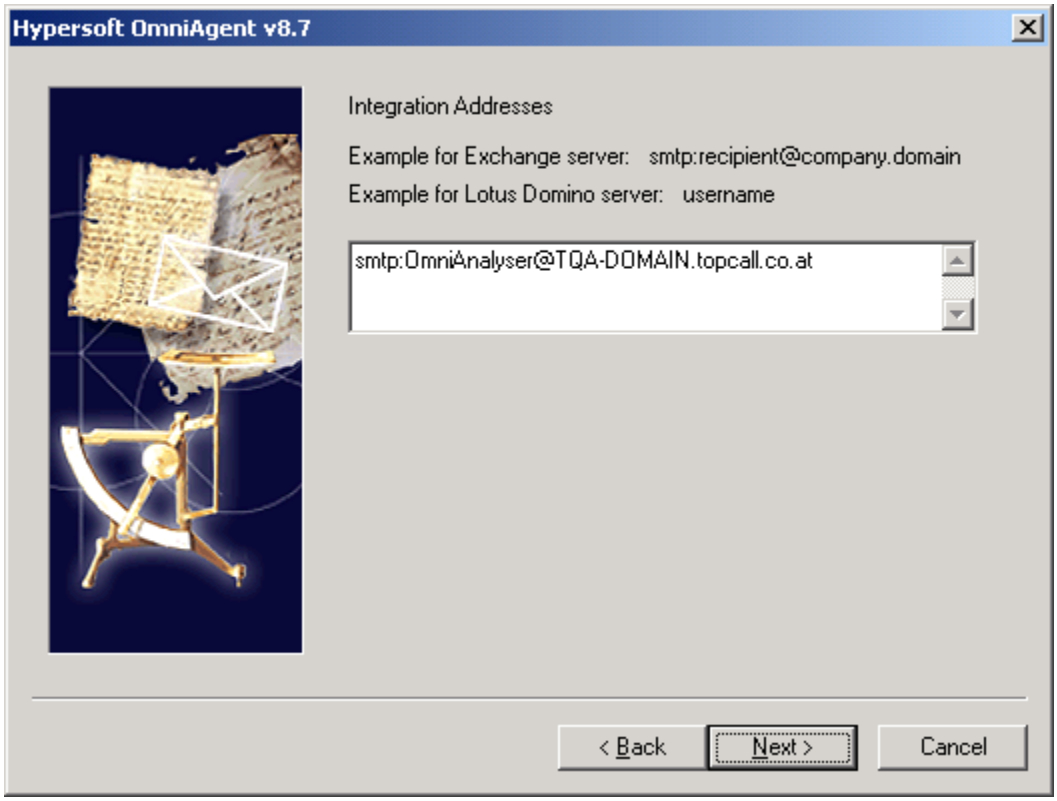
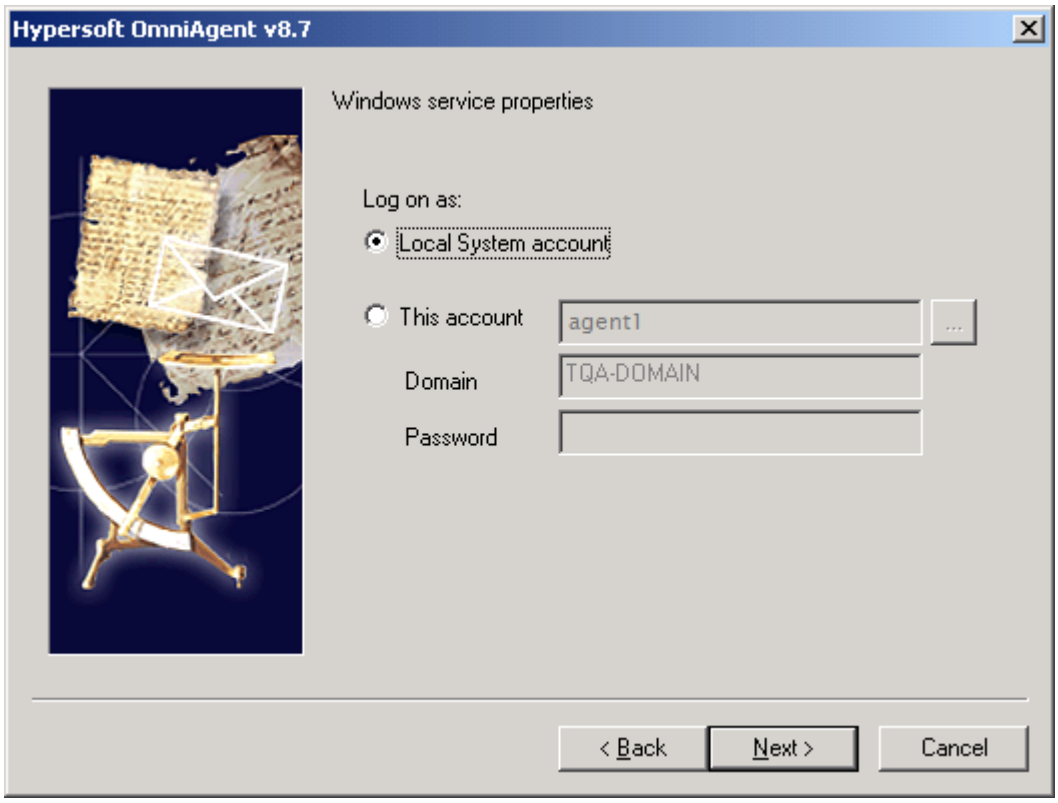


Enter the SMTP address of OmniAnalyser (with “smtp:” prefix). Click Next to continue.



Here you can select an account for the OmniAgent services. With SMTP / POP3 mailboxes, you can use the local system account. Click next to continue.

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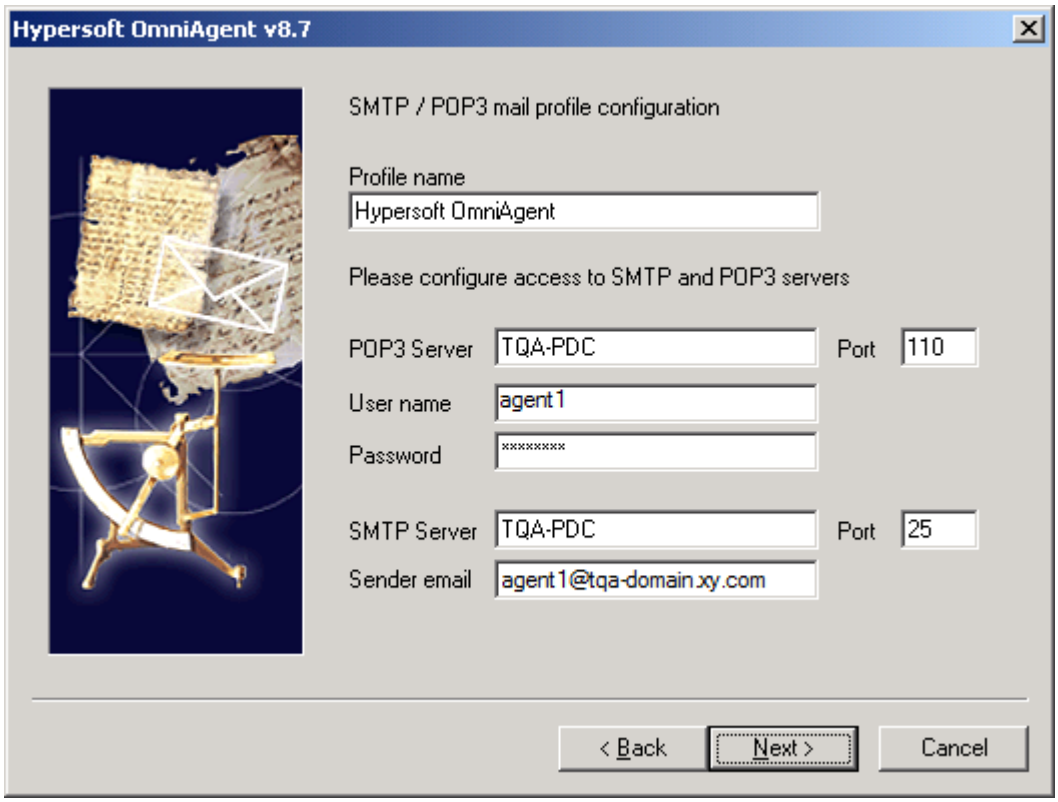
If the TC/Report database is on a remote computer, you might need a dedicated user account for the service. The account must be able to access the TC/Report database via the LAN. If the “Named Pipes” network protocol is used, this must be a user who is allowed to log on to the SQL server.



Configure the mail profile for OmniAgent:

Accept or change the profile name, enter the POP3 and SMTP server name(s), the credentials for accessing the OmniAgent mailbox (agent1 in this example), and the email address of this mailbox. Click Next to continue.

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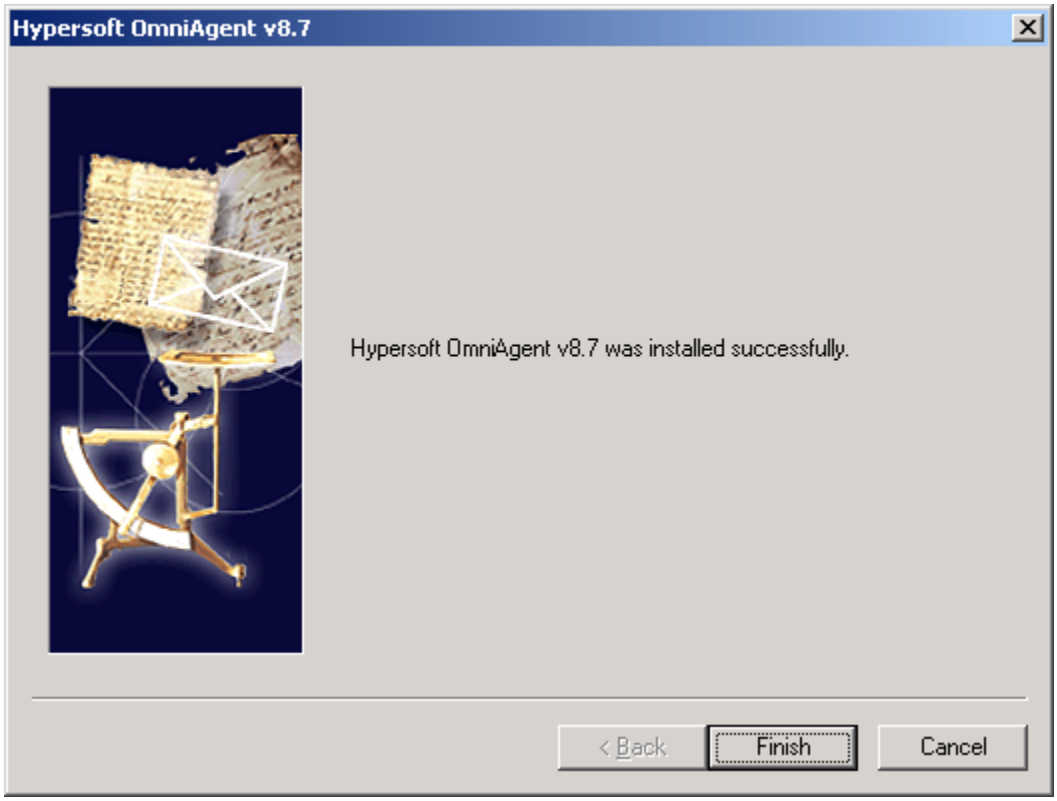

Click Finish to terminate installation.

6.7.6.2 Configuration

Stop the OmniAgent services during this first configuration.

Start OmniAgent Manager (from Start | Programs | HyperSoft OmniAgent | OmniAgent Manager).

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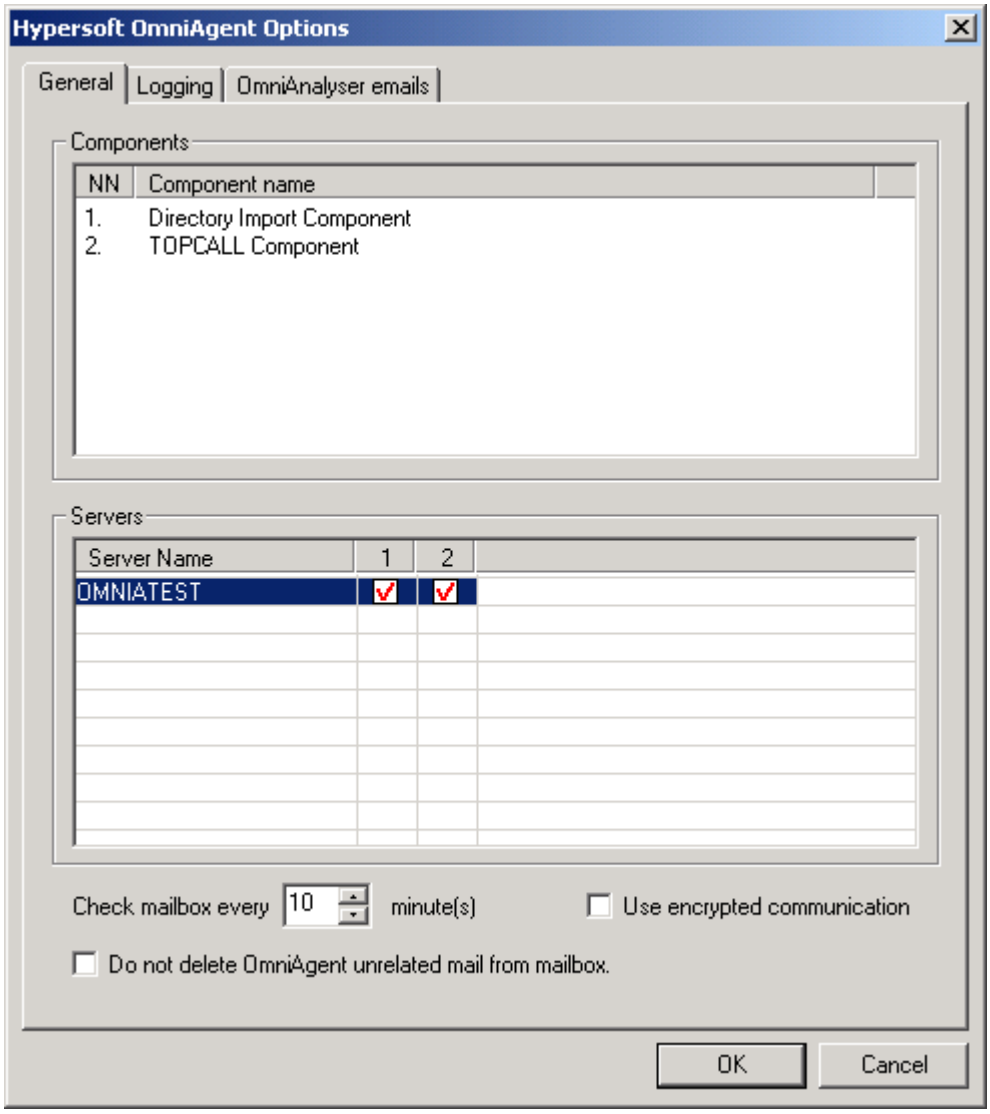

After Setup, one server is configured for OmniAgent, the server name is the name of the local workstation. Change the server name to the TCOSS server name (as configured in TC/Report and for OmniAnalyser). In our example, the TCOSS server is called TOM.

Right click the server and select Properties from the context menu:

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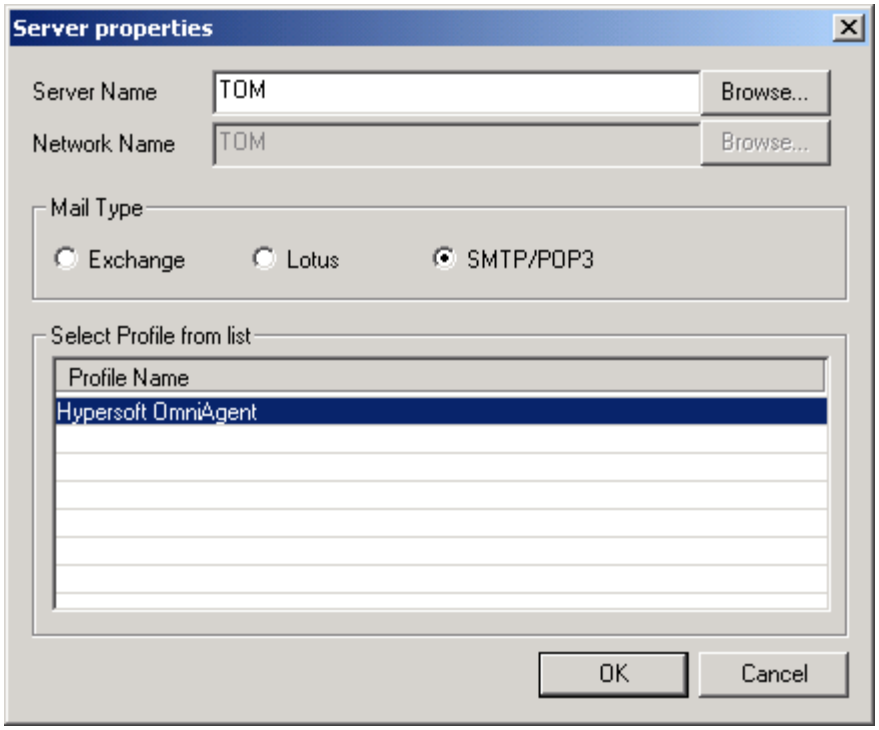
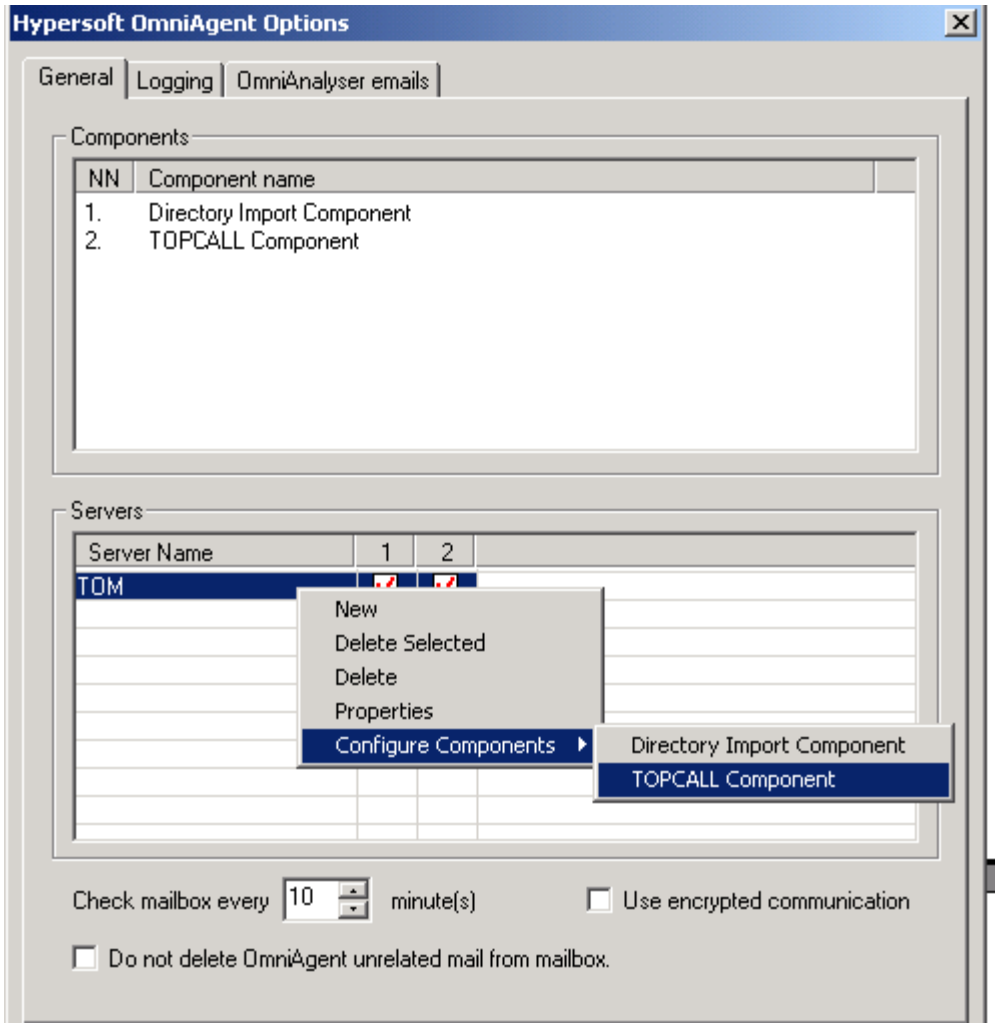


Change the Server Name appropriately and click OK.



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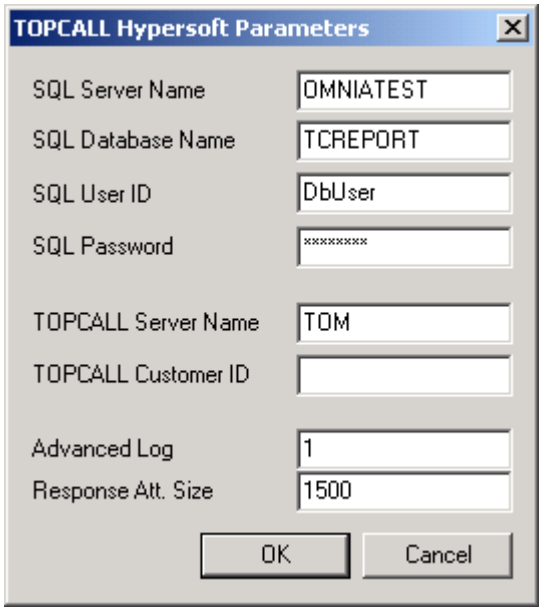
Right click the server and choose “Configure Components | TOPCALL Component” from the context menu:



SQL Server Name: Name of the SQL server where the TC/Report database is located.

SQL Database Name: Name of the TC/Report database

SQL User ID: User ID for logon to the TC/Report database

SQL Password: Password for logon to the TC/Report database

TOPCALL Server Name: Name of the TCOSS instance as stored in the TC/Report database

TOPCALL Customer ID: Name of the customer whose data must be imported (only applicable if several customers per TCOSS instance, otherwise empty).

Advanced Log: Can be 0 or 1. Set to 1 for maximum trace information.

Response Att. Size: Maximum size (in KB) of the file attachment in a tracking response.
If the available information does not fit into this size, it is divided into several response mails. If set to 0, the size check is disabled.

Click OK.

Right click the server and choose “Configure Components | Directory Import Component” from the context menu:

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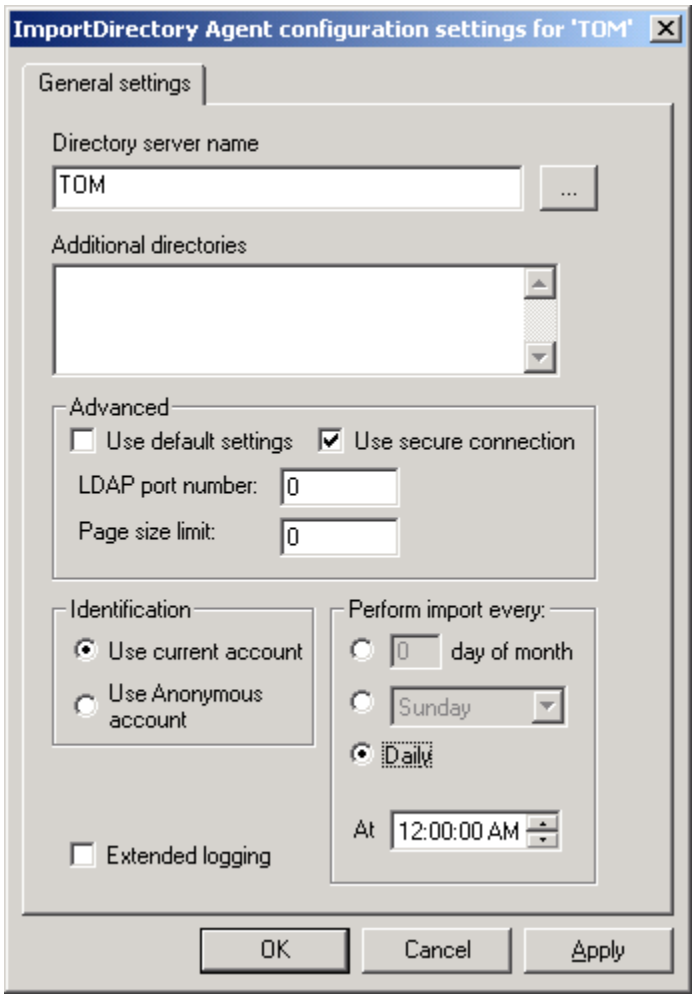

Enter the TCOSS server name in the field labeled “Directory server name”. If users from several servers shall be imported, enter all server names separated with commas.

Choose an interval for directory import, e.g. daily at 12:00:00 AM.

You can turn on extended logging if you experience problems.

Click OK.

Now copy the sample TCDIROPT.XML file created by TC/Report (at the location defined in TC/Report Fetch Agent registry value *TCMA\TCDirOptXMLFile*) into the OmniAgent working directory and edit it with Notepad:

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TcDirOpt.xml - Notepad

File Edit Format Help

```
<?xml version="1.0"?>
<OPTIONS><AdvancedLog>1</AdvancedLog>
        <PrefixUserNames>1</PrefixUserNames>
        <MAP><Mailsystem>Site</Mailsystem>
        </MAP>
        <Servers><Server ID="1"><TCServerName>TOM</TCServerName>
                        <TCCustomerId></TCCustomerId>
                        <SQLServerName>OMNIATEST</SQLServerName>
                        <SQLServerDataBaseName>TCREPORT</SQLServerDataBaseName>
                        <SQLUserId>DbUser</SQLUserId>
                        <SQLPassword>password</SQLPassword>
                        <SQLNetworkLibrary></SQLNetworkLibrary>
                </Server>
        </Servers>
</OPTIONS>
```

Adjust the attributes to match the current installation.

Attributes and their meaning:

Name	Per server	Meaning
AdvancedLog	No	Set to 100 for maximum trace output
Mailsystem	No	Configure where mail system shall be stored
PrefixUserNames	No	If 1, the mailbox names contain the TCOSS server name as a prefix.
Server ID	Yes	Server id, 1 for first server, 2 for second server etc.
TCInstanceName	Yes	If several customers on the same TCOSS, use different instance names for every customer.
TCServerName	Yes	Name of the TCOSS instance as stored in the TCReport database (must match field Server ID)
TCCustomerId	Yes	Empty (if only 1 customer on TCOSS instance) or name of the customer
SQLServerName	Yes	Name of the SQL server where the TCReport database is located
SQLServerDataBaseName	Yes	Name of the TCReport database
SQLUserId	Yes	User-ID for login to TCReport database
SQLPassword	Yes	Password for login to TCReport database (will be written back encrypted after first successful login)

If directory import from several TCOSS instances or customers into the same OmniAnalyser database is needed, you can add more servers to the Servers list.

<u>MAP objects:</u>

In the MAP section, you can choose where the mail system of the KCS user profile (field “user belongs to”) shall be stored. By default, it is stored as the site name. You can change this default, and you can also define additional properties that shall hold this information.

Copy TCDiropt.xml also to the OmniAnalyser working directory.

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After configuration, you can restart the OmniAgent services.

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7. Maintenance

This section describes which actions are needed when new components are added to the system.

7.1.1 Adding TCOSS Instances

TC/Report:

Install the TC/Report license on the TCOSS server.
Stop the TC/Report Fetch Agent.
Use the TC Management Console to configure a new server for TC/Report.
If TCOSS hosts multiple customers, configure the Customer ID field correctly.
Restart the Fetch Agent.

OmniAgent Mailbox:

Create the mailbox on the mail server (e.g. an Exchange server).

OmniAgent:

Either install a new OmniAgent instance, or add the new server to an existing instance via the OmniAgent Manager. Configure both components (TC Tracking component and TC Directory Import Component) for this server.
If TCOSS hosts multiple customers, configure the Customer Name correctly.
Do not forget to add the server to the TCDIROPT.XML file.

7.1.2 Adding a New Customer

This section describes what has to be done when a new customer is added to a TCOSS instance that is shared by several customers. In this example, every customer has his own OmniAnalyser database.

OmniAgent Mailbox:

Create a mailbox for the OmniAgent.

OmniAgent:

Install a new OmniAgent instance. Configure both components (TC Tracking component and Directory Import Component) for this server.
If TCOSS hosts multiple customers, configure the Customer Name correctly.
Do not forget to add the server to the TCDIROPT.XML file.

7.1.3 Adding Applications (e.g. Links)

This section describes what must be done if a new application is added to the system.
These actions are only needed for applications using TCOSS queues (e.g. TC/LINK, TC/VoiceMail, TC/Broadcast).

Configure media type and application name in the queue user profiles.

Restart the TC/Report Fetch Agent to import user information immediately.

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7.1.4 Adding Channels

Restart the TC/Report Fetch Agent, to force the program to read channel information from TCOSS.

7.1.5 Adding New Users

TC/Report will read user profile information once a day, at a time configured via TC Management Console. It is recommended to restart the Fetch Agent immediately after adding user profiles, in order to update him with the new information immediately.

7.1.6 Deleting Information from the OmniAnalyser Database

You can delete information from the OmniAnalyser database via OmniAnalyser, menu item *Tools* | *Clear Database*. With KCS integration only, the tabs “Availability”, “Scan Messages” and “Other scan tables” are not relevant. Please consult the OmniAnalyser Installation Manual for further information.

7.2 Restrictions

7.2.1 Media Servers

Name length restriction

Media servers with names longer than 8 characters are not displayed correctly in reports. TCOSS stores only the first 8 characters of a media server name in the send order. If there are several media servers whose names differ only after the 8th character, they cannot be distinguished from each other in the reports, e.g. TQA-SOMEDI1 and TQA-SOMEDI2 will both show up as TQA-SOME.

Report Average Message Delay by Server

The report Average Message Delay by Server cannot be used for calculating processing time on a media server. If several send attempts for the same send order are done via a media server, the calculated delay will be the time between first and last send attempt, which is of course not the processing time.

7.2.2 No Historic Channel Information

TC/Report Fetch keeps the TCOSS channel configuration in memory. Configuration is read when the Fetch Agent starts. Therefore, you must restart the Fetch Agent after adding channels.
Information about channels that were configured in the past but have been removed is not stored.

7.2.3 No Automatic Update of Some User Attributes

Currently, TC/Report does not recognize changes in the user profile fields Group, CostCenter, MediaType, ApplicationName, Location and VisibleInOutbox.
Therefore, you should configure a daily full user import, in order to keep track of changes.

7.2.4 Status “Inactive – Problems”

It is not supported to use termination status “Inactive – Problems” for TC/LINK configuration, because such messages must be cancelled manually before they go to the short term archive. This means that the

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delivery time displayed in OmniAnalyser will be very long (from message submission to the time the message has been cancelled manually).

7.2.5 Queue Users Must Be Configured Correctly

TCOSS queues are only handled correctly if there are queue user profiles with “visible in outbox” enabled and a media type other than “invalid”. Some applications (e.g. TC/Lanprint) use queues with 2 character names that are not created as queue users. You must create and configure queue users for these queues.

It is also necessary to create queue users for channel groups that are not defined as the primary channel group for any channel.

7.3 Technical Glossary

ASP
Application Service Provider

DLL
Dynamic link library.

HyperSoft
Hypersoft Information Systems is a worldwide leading vendor of metric and analysis software for corporate communication systems and data repositories. The main products are OmniAnalyser and OmniContext.

Integration Address
The mail address used by the OmniAnalyser process.

LCR
Least Cost Routing. Several TCOSS servers can be combined to form a Least Cost Routing system.

KCS
Kofax Communication Server. This term is used for the server itself and also in context with related applications, e.g. KCS environment, KCS applications.

Media types
Describe the format of a message (e.g. fax, telex, SMS, internet message) and sometimes also the mail system where the message comes from or is delivered to (Notes message, Exchange message, GroupWise message).

Node alias
The alias name configured for the node via LCRConfig. This alias is used in the ROUTE section of the rr99 file.

OmniAnalyser
OmniAnalyser™ is a Web-based reporting and analysis solution for Microsoft Exchange, Lotus Domino, Sendmail, and Sun ONE Integration Server (formerly iPlanet).

OmniAnalyser Integration Server
The computer where the OmniAnalyser application runs. This application requests and collects information from the agents and writes the “integrated” information to the OmniAnalyser database.

SLA
Service Level Agreement. OmniAnalyser contains a report called SLA Targets.

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TC Management Console
The TC Management Console is a Win32 desktop application. It is used for configuring the TC/Report Fetch Agent. See TC/Report Technical Manual.

TCOSS
A more technical term for the Kofax Communication Server, meaning the programs that constitute the server. Often used in the same sense as KCS.

TCOSS instance
One TCOSS file system containing messages and users.
The TCOSS instance can be located on a TCOSS single or tandem system, or on a TCOSS storage server (a computer that hosts several TCOSS instances).
In this document, the term “TCOSS Server” is often used instead of “TCOSS instance”.

TCOSS media server
A special TCOSS instance that hosts fax and telex channels, but has no user profiles. TCOSS instances on a storage server use the channels on the media server.

TCOSS storage server
A computer that hosts several TCOSS instances. Used by ASPs.

KCS Messaging Analyser
A set of products that makes statistics about KCS messaging available via the product OmniAnalyser from HyperSoft.

TC Tracking Component Agent
A combination of the application OmniAgent.exe (from HyperSoft) and a dynamic link library (DLL) that provides detailed information about individual messages sent via KCS.

UTC
Coordinated Universal Time. Same as GMT (Greenwich Mean Time).
Time kept on the Greenwich meridian.

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