Kofax Communication Server

KCS Package Manual

Version: 10.3.0

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KOFAX

Legal Notice

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Chapter 1

Preface

The Kofax Communication Server (KCS) Server Package contains core KCS server applications, configuration, monitoring, and reporting programs, server extensions, TC/Web interface and various tools. The most important components include

- TCOSS server
- Fax over IP
- TC/Archive server
- Voice mail

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.

Chapter 2

Installation

All KCS software including server package is available for download on https://delivery.kofax.com/.

Server Package setup is started with setup.exe. Refer to the appropriate manuals for more details.

Unattended setup: If you clear the **Show Setup Dialogs** check box on the first screen of the setup, the setup dialogs and information message boxes will not be displayed. Default values will be used for new installation. For upgrades, existing configuration will be used. Error messages and the Setup Finished screen will be shown. The **Show Setup Dialogs** check box is selected by default.

Note Installers and tools launched during the installation can still require user interaction, even if server package setup runs in unattended mode.

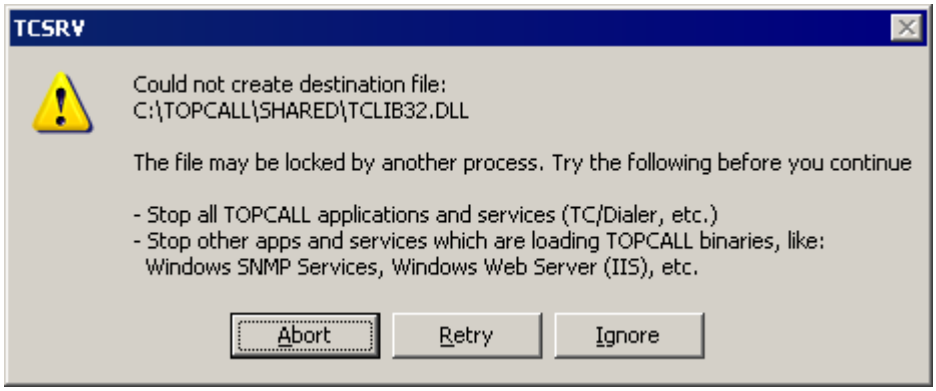
Prerequisites

This section describes the installation perquisites.

Stop All Kofax Processes

The setup of the package installs shared files (DLLs,OCXs, etc.) which can be used by more applications which might be in different packages. To ensure that a file can be updated by the setup it must not be in use by any process while setup is running.

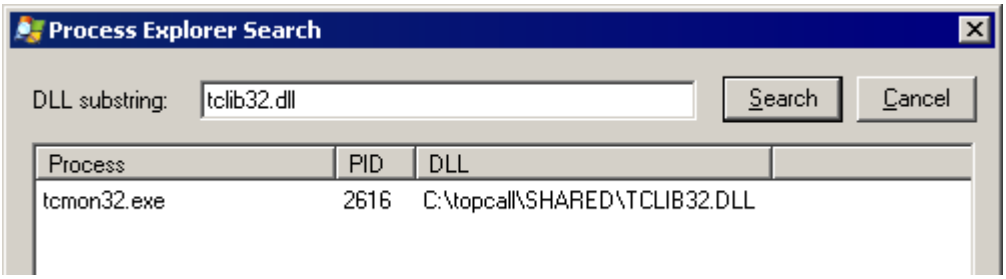
This is the reason why it is strictly required to stop all Kofax applications, services, etc. and all other processes which could possibly load Kofax binaries. Use the Windows Task Managers Process View to see a list of running processes.



If you experience problems like this during the setup, check for running processes which are locking the certain shared file(s). Take care of applications like TC/Dialer which are started automatically at system start.

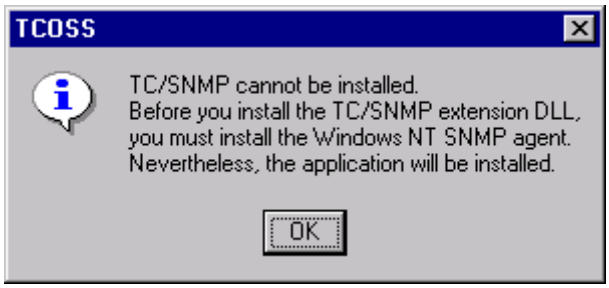
Stop any running processes that may cause the problem and then select Retry.

Hint: You can use the freeware tool *Process Explorer* from http://www.sysinternals.com to find processes locking the DLLs. Use Find – Find DLL from the menu.



SNMP Support

If you want to use SNMP Maintenance with this package, take care that Windows SNMP agent is installed before the server package setup is started. Otherwise, you will get a message box as shown below.



If you do not want to use SNMP, this message box can be ignored.

Details about SNMP are described in the TC/SNMP documentation.

Release Upgrade

If a TCOSS Release update is made, both TCOSS and MAKETCOSS must be selected during Setup!

Upgrade from KCS 9.1.1 or Earlier

Starting with version 9.2.0, KCS supports Unicode. Refer *Unicode Installation Guide* for more information.

Upgrade from TC/SP 7.56.00 or Lower

This section describes the upgrade from TC/SP 7.56.00 or lower version.

Registration Store

The capacity of the registration store, which was 5000 registrations in previous releases, will now depend on the number of users set in the system configuration. The capacity is now calculated as number of users plus 2000, with a minimum of 5000. With the default system configuration of 3000 users the registration store capacity remains unchanged at 5000 records.

The TCOSS internal registration store record length has been extended from 64 to 256 bytes. At the first start up of the new TCOSS release, the existing registration records are deleted and new, empty records with the extended record length are written.

The system file “+MAILSYS/AREGISTRATIO” which holds the registration records will grow as a result of the extended record length and a possibly higher number of records. Files marked for cyclic deletion will be removed if there is no free disk space in the mail area. In the unlikely case that it is not possible to free enough disk space by cyclic deletion, TCOSS will fail to start giving one of the error messages “amregini3”, “amregini4” or amregini5”. If this happens one has to reduce the number of users in the system configuration or increase the size of the mail area.

License Store

The TCOSS internal license store record length has been extended from 64 to 128 bytes. At the first start up of the new TCOSS release, the existing license records are extended without losing license data.

+TECH Folder Size

Due to additional programs for TC Line Server Model 305 (LS1), the available space in the +TECH area may be too small. In that case you will get an error message 308 during installation of +TECH program files with WCONFIG. “308” is a TCSI code which means "out of disk space", "max. store capacity reached". In that case the +TECH area has to be increased with TCDISK from 10 MByte to 20 MByte.

For new installations with this package the default +TECH area size is 20 Mbyte.

Release Downgrade

Installing older package over a newer system is not supported. This can damage your installation.

The only component that you are allowed to downgrade is TCOSS. Refer to the *TCOSS System Manual* chapter *Overview – Release Downgrade* for important hints on downgrading to lower TCOSS releases.

System Requirements

Supported operating systems:

- Microsoft Windows Server 2008
- Microsoft Windows Server 2012

For additional requirement for TC/WEB, refer *TC/Web Installation and Configuration Manual*.

Supported Hardware and Software

The following hardware and software will be supported additionally to Kofax hardware and software.

Hardware:

Hardware delivered by Kofax or third party hardware is supported.

Peripherals like Sound cards, second video card, ... are neither allowed nor supported.

Requirements for 3rd party hardware:

TC/SP can be installed third party hardware servers. The server must have a printer port where a TC93 with the CPU number chip is connected.

If the CPU supports Hyperthreading, if must be disabled in the BIOS setup.

Software:

The following software are allowed but not supported:

1. All Programs, Tools, Applications that are part of Windows operating system
2. All applications that are required for the document conversion.

Any other Windows software than applications used for TCDC may also be used but will not be tested by Kofax. In case of problems we might request that any other of this third party software is completely removed from the servers in order to isolate the problem.

CPU Number

The licenses for Kofax Communication Server are based on a so-called “CPU number”. This value is automatically generated from the MAC address of the first LAN adapter. Other methods are no longer supported.

Hardware Repair or Upgrade

If your hardware changes, the generated CPU number can become invalid. In this case, TCOSS continues to work in a 14-day grace mode. During these 14 days, new permanent license keys for the changed CPU number must be requested from Kofax. These new license keys can be installed while TCOSS is running in grace mode. A restart is not required.

See *TCOSS System Manual* chapter *CPU Keys* for details on the TCOSS grace period.

Special Situations

- The registry variable which contains the CPU-key is deleted by accident: nothing has to be done if no hardware changes have been made. When the CPU-key is read the next time, then the value is written to the registry again.
- A technician changes the MAC address of the LAN adapter. From TCOSS' point of view this is the same case as if the network card has been replaced. The existing CPU-key has been replaced and TCOSS continues in grace mode.
- A technician removes a LAN adapter and starts TCOSS. The CPU-key might have become invalid and is newly generated. After reinserting the original LAN adapter the CPU-key will not be changed back automatically. To force changing back the CPU-key, delete the registry value with the stored CPU-key. The CPU-key will only be restored to its original value if no further hardware changes were made and the original LAN adapter is recognized as the first LAN adapter.

Network Requirements

For monitoring with TCMON32 the network protocols NETBIOS or TCP/IP are required. For server models/22x (or 165) TCP/IP is required on the network connection between primary and secondary master.

This server package release supports to following TCTI protocols.

transport	TCP/IP	NETBIOS	IPX/SPX
native	√	√	Not supported!
RPC	√	√	√

Note It is not possible to use TC/ARCHIVE with a model/x5 server in an IPX/SPX network!

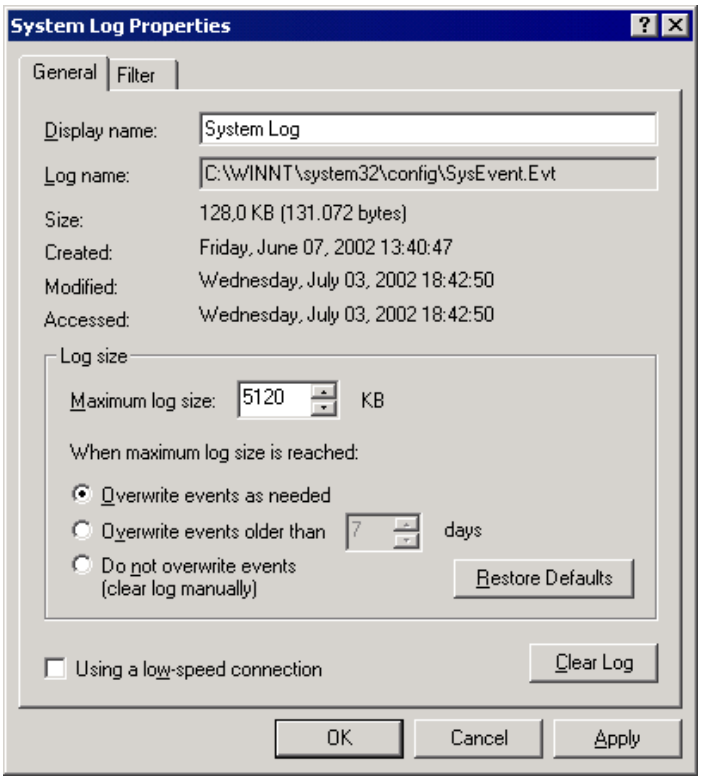
Installation of Windows

1. Windows operating systems are usually installed from a bootable CD or DVD. Insert the disk and follow the instructions. During the installation you will be able to determine the disk partition sizes. Create two partitions. The first will become the drive C. Windows must be installed on drive C. The second partition (drive D) occupies the remaining disk space. Both partitions have to be formatted as NTFS partitions.
2. At the end of the installation you will be asked for both the password of the Administrator account and for the name and password of a new user having administrator rights. It is recommended to use TCTECH as the name for the second administrator user.

   Choose your passwords carefully not to give unauthorized persons access to the KCS server!
3. Install Network, Printers and Applications as appropriate. Interrupt 3 should not be used for the network card (change it to e.g. IRQ 5) since Interrupt 3 is normally used COM2 port.
4. From the Control Panel open the System Icon. Change the time-out value for the startup menu to 5 seconds. Do not change any Recovery or Tasking options since these settings are set by the TC/SP Setup program.
5. Install Windows service packs and updates.

6. You should change the settings of the application event logs with the event viewer as shown in the screen shot below. Otherwise the event log may be corrupted, if Dr. Watson tries to create event log entries that does not fit into the application event log (default size is 512kB).

   Event log settings on Windows:



7. It is recommended to create an “Automated System Recovery” backup after the first installation. This backup should be updated whenever changes in the Windows installation are made.

Required Services and Devices

Service or Device Name	Recommended Startup Option	Required For
Net Logon	Auto	For authentication on a domain controller
Workstation	Auto	
Event Log	Auto	Store all error messages. THIS SERVICE IS MANDATORY!
Messenger	Auto	Required for reception of LAN break messages
Remote Procedure Call (RPC)	Auto	Required for TCTI transport RPC. It is recommended to use RPC instead of native transport wherever this is possible.

Service or Device Name	Recommended Startup Option	Required For
Server	Auto / Manual	Only required if files or printers should be shared on the network. **Note** If this service is not running, the Computer is not visible in the Computer Browser list (e.g. Network Neighborhood), but administrative shares (e.g. C$ for drive C) are still useable.
TCP/IP NETBIOS Helper	Auto	Required when using windows networking via TCP/IP.
Print Spooler	Auto	Required for printing
Alerter	Auto	This service allows to sent alerts if a critical system state has been detected (e.g. disk drive almost out of space). It is not mandatory but recommended for KCS servers.
SAP Agent	Auto	Required if TCTI via IPX/SPX (RPC) is used on a KCS or KCS ARCHIVE server. Can be installed via *Control panel – Network – services – Add – select "SAP Agent"*.
TCSRV	Auto	Required for automatic start-up of KCS application after e.g. power failure and for supervising processes via TCMON.
Telephony	Manual	Required for TC/STATUS connection VNC Server.
NetBIOS Interface	Manual	Required when using TCTI (native or RPC) with NetBIOS interface
WINS Client (TCP/IP)	Auto	Required for TCP/IP
Windows Management Instrumentation	Auto	
Logical Disk Manager	Auto	
Mylex Global Array Manager Server	Auto	Mylex HW Raid controller
Network connections	Auto	General network communication
Security Accounts Manager	Auto	
System Event Notification	Auto	
DNS Client	Auto	
DHCP Client	Manual	Only if DHCP is used

Below you can see an overview of all Services and Drivers (except LAN card driver) required by TCTI:

Protocol	native transport	RPC transport
TCP/IP	WINS Client (TCP/IP)	RPC Service, WINS Client (TCP/IP)

Protocol	native transport	RPC transport
NETBIOS	NetBIOS Interface, NETBEUI	RPC Service, NetBIOS Interface, NETBEUI
IPX/SPX	not supported	RPC Service, SAP agent, NWLink IPX/SPX comp. transport

Installation on Windows Server 2008

For information about installation on Windows Server 2008 and later operating systems, refer to the *Environment Guide - Platform System Manual*.

Installation on Virtual Systems

For information about installation on virtual machines, refer to the *Environment Guide - Platform System Manual*.

Chapter 3

Troubleshooting Guide

This section describes the troubleshooting information.

Tracing Possibilities

A trace can be activated for every process.

`HKEY_LOCAL_MACHINE\Software\TOPCALL\<processname>`

Values

TraceLevel	REG_DWORD	binary value

Binary value specifying different trace options for the specified process. The value represents the sum of bit-values each enabling certain trace options. Possible bit values are:

Apply to process	Bit value (hex)	Trace information
all processes	0x01	trace not-filtered information and errors (default if any other bit is set)
	0x10000000	less info TCRPC trace
	0x20000000	trace TCRPC calls
	0x40000000	full stream IO trace (not recommended)
	0x80000000	full procedure IO trace (not recommended)
TCOSS	0x02	TUP start/stop
	0x04	TAMIO calls
	0x08	display status and usage of all channels and semaphores when TCOSS terminates
	0x10	trace all calls from external TC-RPC clients
	0x20	TCTI connect and disconnect trace
	0x40	Model/165/22x startup trace
	0x80	Info Trace (LCD, TCCMON output)
	0x100	Link trace (Transputer or LAN Link)
	0x200	Disk trace
	0x800	Status agent trace
	0x1000	Link error trace

Apply to process	Bit value (hex)	Trace information
	0x2000	LANLINK trace (for Branchbox or Line Server)
	0x4000	Remote TAM Trace (for ASP Systems)
	0x8000	Dump process token at start
	0x10000	Link Wait Status trace in TPLINK driver
	0x20000	Rights trace in TPLINK driver

Recommended trace level:

Process	Default	Normal operation	For testing
TCOSS	0x00	0x01	0x23
TCLANPRT	0x00	0x01	0x1FFF
TCFILBRK	0x00	0x01	0x1FFF
TCSRV	0x00	0x01	

TraceLevel	REG_SZ	trace file/path

Fully qualified path to trace file or path relative to <RootDir>\Trace. The actual trace file name is the name specified here (or the default) extended with a number. The number is added before the period (‘.’) of the extension(e.g. ‘TCOSS0.TRC’). The number increments by one every time the maximum file size is reached (see below). In this case the current file gets closed and a new file with the new name is created. If the file exists it gets truncated. When the maximum file number is reached (see below) the current file number is set to zero.

Default … <RootDir>\Trace\<ProcessName><number>.trc

MaxTraceFileSize	REG_DWORD	max. size of a file in kB

Specifies the maximum size of a single trace file for a process. Trace data gets added to the current file until the file size reaches the max. value. In this case the current file gets closed and a new one gets opened.

Default ... 128

MaxTraceFiles	REG_DWORD	max. number of files

Specifies the maximum number of trace files generated for one process. The generated trace files are numbered from 0 to *MaxTraceFiles*-1. This value only restricts the number of trace files (i.e. the amount of trace data) kept on disk and not the total number of files generated while the process is active. When the max. trace file number is reached, the next file generated gets number 0.

Default ... 2

TraceToScreen	REG_DWORD	Boolean value

Note Enables or disables output of trace information to screen. If this value is non-zero trace information is displayed on the screen. Not that all processes that have been started via TCSRV do have a console window. Processes without a console window will ignore this value.

(Hint: To attach console windows to TCSRV and all its processes set the option *Allow Interaction with Desktop* for the service TCSRV using the control panel/services)

Default … 1

TraceToFile	REG_DWORD	Boolean value

Enables or disables output of trace information to files. If this value is non-zero trace information is written to files as described above.

Default … 1

AppendTrace	REG_DWORD	current file number or zero

If this value is zero, the corresponding process starts writing trace files at trace file number 0. Any previously stored data gets deleted before the first line of new trace data is written to the file.

If this value is non-zero, the corresponding process starts writing trace files at trace file number *AppendTrace*-1. But, the previously stored trace data is preserved. Any new data gets appended to the current file until it reaches *MaxFileSize*.

Specifying 0 or 1 is equal, but in the first case the trace file gets truncated when the process starts.

Note If this value is non-zero, it automatically changes during run-time to store the number of current trace file.

Default … 0

Module Load Addresses

Each load modules (DLL or EXE) has a preferred load address. This address can be viewed by opening the file with the standard Windows tool **Quick View**. You have to examine the value **Image Base** in the **Image Optional Header**.

This information is very useful in case of access violation faults (generates Dr. Watson dump) to find out which DLL causes the fault. But, if an application loads different DLLs with conflicting load addresses, Windows automatically assigns other load addresses.

image base (hex)	Module	checked version	Created by
00400000	all *.exe files	n/a	n/a

image base (hex)	Module	checked version	Created by
02050000	TCE_LS1.dll	1.00.17	Kofax DLLs
10000000	TCGENDEP.dll	1.00.01	
10000000	TCIMAP.dll	7.23.02	
10000000	TCLDAP.dll	7.23.02	
10000000	TCLICONV.dll	7.23.02	
10000000	TCMIME.dll	1.13.00	
10000000	TCMSG.dll	1.00.09	
10000000	TCPOP3.dll	7.23.02	
10000000	TCSX.dll	7.23.03	
10000000	TFC32.dll	1.01.01	
10000000	TOS32.dll	7.24.02	
1F000000	TCLIB32.dll	7.11.00	
1F100000	TCRPC32.dll	7.09.02	
1F200000	TP80.dll	7.09.00	
1F300000	tcCapiFx.dll	1.04.02	
1F500000	TCTI32.dll	2.10.01	
1F600000	TCSI32.dll	2.19.00	
1F700000	TCRTF.dll	1.00.01	
1F800000	TFC.dll	1.05.02	
1F900000	TCSPILN.dll		
1FA00000	TCSPIMX.dll	1.00.12	
20000000	tcrt.dll	2.00.15	
20100000	tcEngine.dll	2.00.14	
20200000	tce_res.dll	2.00.22	
20300000	tce_rem.dll	2.00.11	
20400000	tce_snd.dll		
20500000	tce_h323.dll	1.05.07	
20600000	tcCont.dll		
20700000	tce_host.dll	2.00.04	
20800000	tcprep.dll	1.02.01	
20900000	tcvredirect.dll	1.00.01	
33300000	TCIMG32.dll	2.10.05	

image base (hex)	Module	checked version	Created by
5F3E0000	ATL.dll	7.00.7024	Microsoft DLLs
5F400000	MFC42.dll	4.21.7160	
71590000	COMCTL32.dll	5.80.2314.1000	
74A10000	TAPI32.dll	4.00	
77670000	MSWSOCK.dll	4.0.1381.201	
776A0000	WSHELP.dll	4.0.1381.31	
776B0000	WS2_32.dll	4.0.1381.172	
776D0000	WSOCK32.dll	4.0.1381.201	
777E0000	SAMLIB.dll	4.0.1381.135	
77800000	NETAPI.dll	4.0.1381.93	
77840000	NETRAP.dll	4.0.1371.1	
779C0000	LZ32.dll	4.0.1371.1	
77A90000	VERSION.dll	4.0.1371.1	
77C40000	SHELL32.dll	4.0.1381.171	
77DC0000	ADVAPI32.dll	4.0.1381.203	
77E10000	RPCRT4.dll	4.0.1381.193	
77E70000	USER32.dll	4.0.1381.133	
77ED0000	GDI32.dll	4.00	
77F00000	KERNEL32.dll	4.00	
77F60000	NTDLL.dll	4.0.1381.174	
78000000	MFCRT.dll	5.00.7128	

Chapter 4

Hints

This section describes additional information about KCS system.

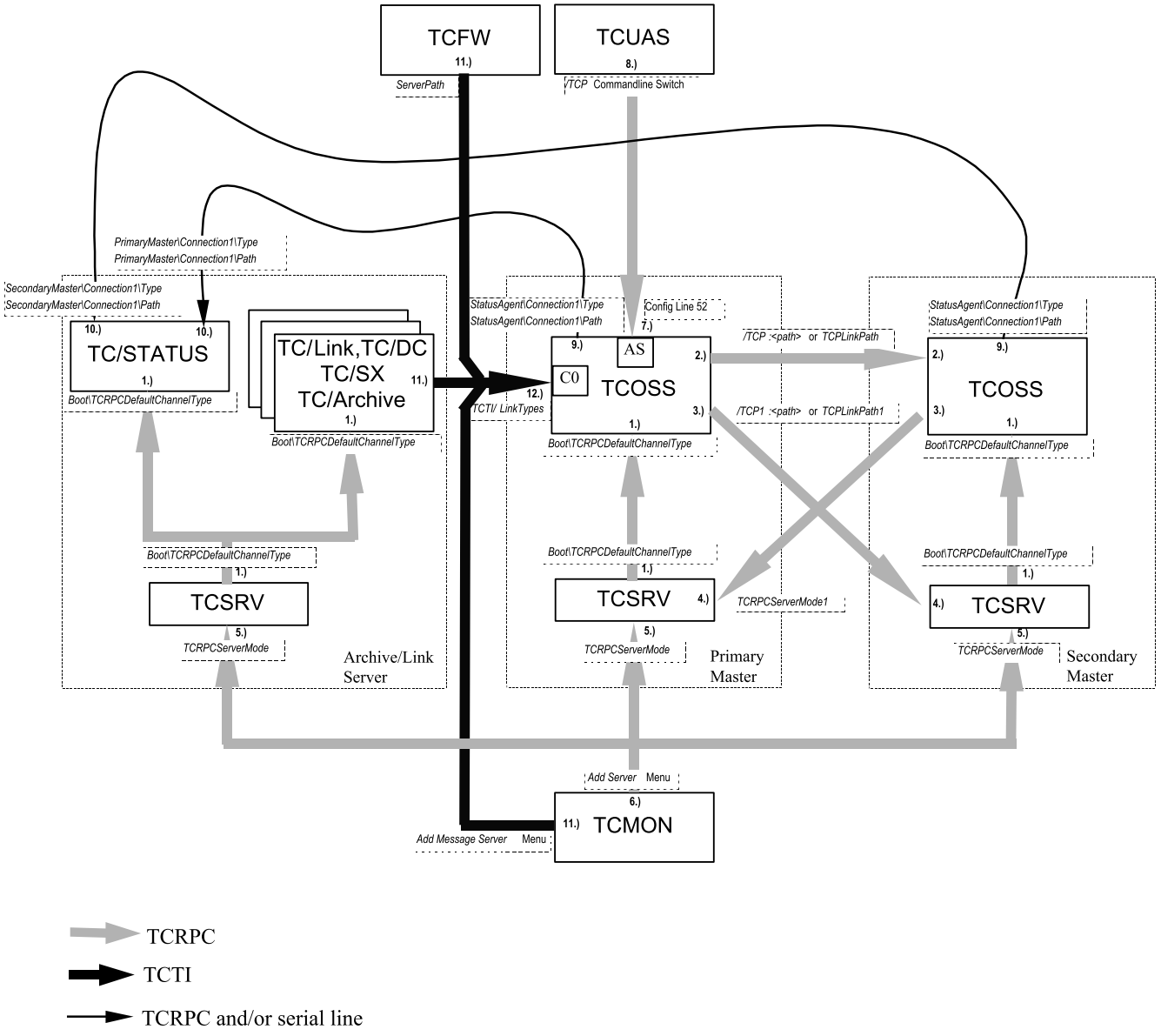
Inter-process Communication

Within a KCS system, applications and processes use two basic ways – TCTI and TCRPC – to communicate with each other.

The status agent TC/STATUS may additionally use a serial line for communication.

TCTI I is used as transport for TCSI based client applications. It allows highly concurrent access to the TCOSS server using various types of underlying network protocols.

TCRPC in contrast, is a fast and lightweight point to point transport between single processes. It can only use TCP/IP, named pipes and a special local underlying protocol.



The picture above shows the major communication paths between KCS processes and applications. Every path has a server side (indicated by the arrow head) which responds to commands from a client side.

Both sides have configuration options to determine the type of transport and/or the network path to the opposite side. The picture shows these options for every communication path.

1. Internal channel of the supervisor service TCSRV to communicate with processes started by TCSRV. The service cyclically polls the processes via this channel to determine and store their status.

   The type of protocol is determined by a single registry value global to TCSRV and all processes on the specific server.

   `HKEY_LOCAL_MACHINE\Software\TOPCALL\Boot\TCRPCDefaultChannelType`

   This value is set by the Setup program automatically and, usually, does not need to be changed. Possible values are (REG_DWORD):

   3 … Named Pipes (default, for compatibility reasons)

   4 … Local

   New installations (with TCRPC32.DLL equal or higher than 7.09.01) should use the local protocol type (value 4).

2. Data link channel between primary and secondary master servers. This is a full duplex channel for transferring hard disk data and TCOSS-channel data between both master servers.

   The protocol type is determined by a command line switch when starting TCOSS:

   `/TCP:[<TCP/IP Path>]`

   The command line can be found in the registry value (REG_SZ)

   `HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\CommandLine`

   If there is no TCP/IP-Path specified with the /TCP: switch, TCOSS reads the path from the registry (REG_SZ)

   `HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\TCPLinkPath`

   The Setup procedures set both the command line switch and the registry values.

   Refer to *Tandem Server Technical Manual* and *TCOSS Configuration Manual* for more information.

3. Client side of the control channel used by tandem systems. The control channel is used by TCOSS on one master server to determine the status and to control TCOSS on the other master server. This configuration is optional. If TCOSS is configured to use TCP/IP for the data link channel (see 2.), it automatically uses TCP/IP for the control channel. In this case there is no way to override the automatically determined protocol type TCP/IP with the protocol Named Pipes!

   If TCOSS is configured to use Named Pipes for the data link channel, it uses named pipes for the control channel as well. In this case TCOSS can be forced to use the protocol TCP/IP for the control channel by the command line switch

   `/TCP1:[<TCP/IP Path>]`

   This switch enforces TCP/IP for the control channel. Additionally it can be used to override any default TCP/IP path settings. Default is the TCP/IP path setting specified for the data link channel (see 2.)

   Examples:

`TCOSS /M:TCSEC /TCP:10.1.1.2`	… Prim. Master, Data/Ctrl TCP/IP same path
`TCOSS /M:TCSEC /TCP:10.1.1.2 / TCP1:193.81.166.122`	… diff. TCP paths

`TCOSS /M:TCSEC /TCP1:193.81.166.122`	… data link = Named Pipes, ctrl. = TCP

As with 2.) if <TCP/IP-Path> is omitted from the /TCP1: switch, TCOSS reads the path from the registry (REG_SZ)

`HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\TCPLinkPath1`

The Setup procedures assume that the same protocol and path are used for both data link channel and the control channel. Therefore, neither the */TCP1:* switch nor the *TCPLinkPath1* registry values are set.

Refer to *Model/22x Manual* and *TCOSS Config Manual* for more information.

4. Server side of control channel used by Tandem Systems. The control channel is used by TCOSS on one master server to determine the status and to control TCOSS on the other master server.

   The protocol type is determined by the registry value

   `HKEY_LOCAL_MACHINE\Software\TOPCALL\Boot\TCRPCServerMode1`

   This value is set by the Setup program automatically. It depends on the protocol type of the data link channel (see. 4.).

   Possible values are (REG_DWORD):

   1 … TCP/IP (common for new installations)

   3 … Named Pipes (default)

   Refer to *Tandem Server Technical Manual* and *TCOSS Configuration Manual* for more information.

5. Server side of TCMON channel. This channel is used to allow TCMON to query the status and control the processes (similar to 4.). There can be only one TCMON connected at a time.

   The protocol type is specified by the registry value

   `HKEY_LOCAL_MACHINE\Software\TOPCALL\Boot\TCRPCServerMode`

   This value is set by the setup program automatically.
   Possible values are (REG_DWORD):

   1 … TCP/IP

   3 … Named Pipes (default)

   Refer to *Kofax Communication Server Monitor User Manual*for more information.

6. Client side of TCMON channel to TCSRV. This channel is used by TCMON to query the status and control the processes (see 5.).

   The menu option *Add Server* allows to select between TCP/IP and Named Pipes Protocol.

   Refer to *Kofax Communication Server Monitor User Manual*for more information.

7. Server side of TCUAS channel to TCOSS. This channel is used to let the console application TCUAS connect to a UAS channel at TCOSS.

   The protocol is specified with the configuration of the UAS channel. This configuration can be changed using WCONFIG. Config-line number 52 determines the protocol type.
   Possible values are:

   `:FF FF, 52` … Named Pipes

   `:FF FE, 52` … TCP/IP

8. Client side of TCUAS channel to TCOSS (see 7.). By default TCUAS uses named pipes as protocol. The command line option

   ```
   /TCP
   ```

   switches to TCP/IP mode.

   Example:

   ```
   TCUAS 00 TOPCALL /TCP
   ```

9. Client side of TCOSS channel to the status agent TCSTATUS. TCOSS uses this channel in a tandem server environment to query the hard disk status of the other TCOSS server and to set its own status. There may up to two connections per TCOSS server to the status agent. The type of every single channel is set using the registry values

   ```
   HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\StatusAgent\Connection1\Type

   HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\StatusAgent\Connection2\Type
   ```

   The setup program sets the values automatically. Possible values are (REG_DWORD):

   0 … not active

   1 … serial cable

   2 … modem

   3 … LAN using TCP/IP

   4 … LAN using Named Pipes (must not be used)

   If any of the LAN connection types is used, additionally the network path must be set (REG_SZ, automatically done by setup).

   ```
   HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\StatusAgent\Connection1\Path
   HKEY_LOCAL_MACHINE\Software\TOPCALL\TCOSS\StatusAgent\Connection2\Path
   ```

   Refer to *Tandem Server Technical Manual* for more information.

10. Server side of TCOSS channel to the status agent TCSTATUS (see9.). TCOSS uses this channel in a Tandem Server environment to query the hard disk status of the other TCOSS server and to set

its own status. There may up to two connections per TCOSS server to the status agent. The type of every single channel is set using the registry values (REG_DWORD).

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\PrimaryMaster
\Connection1\Type
```

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\PrimaryMaster
\Connection2\Type
```

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\SecondaryMaster
\Connection1\Type
```

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\SecondaryMaster
\Connection2\Type
```

The setup program sets the values automatically. See 9) for possible values.

For TCP/IP, additionally the network path must be set within the registry at least to specify the port number of the server sockets (REG_SZ, done by Setup program).

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\PrimaryMaster
\Connection1\Path
```

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\PrimaryMaster
\Connection2\Path
```

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\SecondaryMaster
\Connection1\Path
```

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCSTATUS\SecondaryMaster
\Connection2\Path
```

Refer to *Tandem Server Technical Manual* for more information.

11. KCS Client Server Interface (TCSI/TCTI) to the TCOSS server. These channels are used by every client application (or TC/Link) using TCSI or TFC. They are the only channels based on TCTI transport (see 12.) and not on TCRPC.
The path and link type is configured using .INI files, TCSI/TCTI keys in the registry or directly by specifying the full server path (including link type and path) somewhere within the application. For example, TCMON allows to specify the link type and path with the menu option *Add Message Server*.

Refer to the corresponding application manuals for more information.

12. Client/Server interface (TCSI/TCTI) at TCOSS. The maximum number of concurrent clients is determined by the number of UC0 channels within TCOSS.
In contrast to TCRPC channels, TCTI channels accept multiple concurrent protocol types. The allowed protocol types are stored in the .INI file

```
C:\TCOSS\SYSTEM\TOPCALL1.INI
```

Refer to *TCOSS System Manual* and *TCOSS Configuration Manual* for more information.

For information on inter-process communication in KCS ASP systems refer to *TCOSS System Manual*.

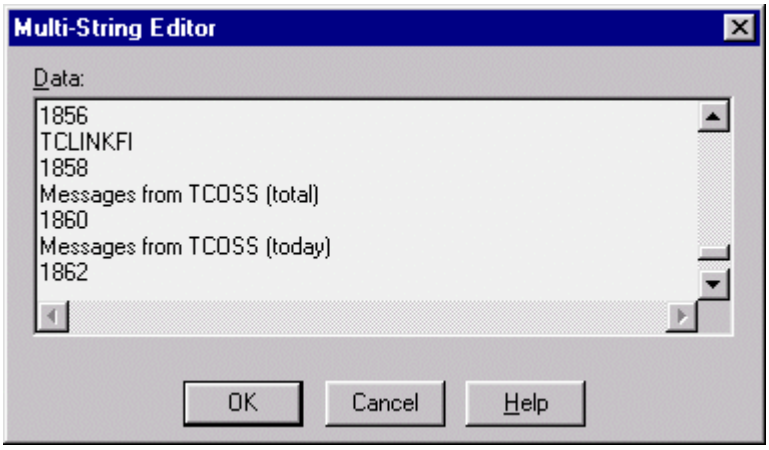
How to Install the Performance Counter Manually

KCS installs only the English names for the performance counters. Therefore only English clients like a remote performance monitor are able to read the values. The performance counters can be added manually by using the registry editor:

1. Start the KCS application with EnablePerformanceCounter set to one
2. Start the register editor regedt32.
3. Open the registry key

```
HKEY_LOCAL_MACHINE
  SOFTWARE
...  Microsoft
       Windows
......  CurrentVersion
......    Perflib
.........  009
.........    Counter
```

4. Search the description for the KCS performance counters you want to copy. For example the TC/Link-FI.



5. Copy the all the performance counter to the clipboard. The syntax is always a number followed by the text.
6. Now open the other registry key. For example for Japanese this would be:

```
Perflib
   007
      Counter
```

7. Insert the content of the clipboard to the right location and save the changes.
8. Start the performance monitor and you will see the performance counter.

Chapter 5

Restrictions

This section describes restrictions applicable for KCS system.

Features Not Available on TS29/32/33 Fax Interfaces

The following features are implemented in the software for TC20 or LS1 or TC/FoIP only.

- Kanji header line (SO #241)
- Layer parameter in ++FX1/FX2 line at begin of overlays
- Ignore code page line (e.g. ++TXT ,,,,,,932) within image or overlay blocks
- Switch to ´overlapped dialing procedure ´ if more than 20 digits have to be dialed (Enh. 7442)
- Extended fax number conversion table (syntax “[~n]” and “[?n])”)
- 2nd dialing stage with DMTF on ISDN lines (Enh. 3856)
- FAX Server commands with an ASP environment (Err. 8752 was solved for TC20 and LS1 only)
- Improved configuration possibility for pulse dialing to achieve PTT certification in Malaysia (Enh. 9651)
- Test Loop for bit error rate tests.
- One Page Delivery Notification (SO 300, send switch ‘o’ and image back reception without leading page break)
- Generation of Fax log entries
- Conversion of Calling Party Number with the fax number conversion table (Number type “C”, implemented in since TCOSS 7.55.04)
- Fax Header line parameters %U% (offset from UTC) and %Z% (time-zone name)

TS29/33/32 interfaces are not supported in Model 202-LAN (“Telex Branchbox”) connected via a TS15 to TCOSS.

Time Zones Support

Currently TCOSS (since 7.56.00) and TC/Archive (since 2.11.00) with TCSI 2.51.01 or higher are the only server package applications, which can handle time zones information.

Other

The performance counters need to be installed differently under non-English Windows. Therefore, for this release the performance counters must be installed manually (see How to Install the Performance Counter Manually in chapter Hints for details).

The KCS Copy utility CTC.exe still uses file ctc.ini (in windows directory) to store its configuration data.

The KCS Voice Server with TDxx interfaces is not supported.