

# estos ECSTA for OpenScape 4000

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5.0.17.794

1	Introduction .....	4
2	Siemens Hicom 300 .....	6
2.1	General Settings .....	6
2.2	Advanced Settings .....	6
2.3	TAPI Lines.....	6
2.4	Supported TAPI operations .....	7
2.5	Connecting to CAP General .....	10
3	Unify OpenScape 4000 .....	11
3.1	General Settings .....	11
3.2	Advanced Settings .....	12
3.3	TAPI Lines.....	12
3.4	Connecting to OpenScape 4000 CSTA.....	13
3.5	Connecting to CA4000 .....	14
3.6	Connecting to CAP SCC 4000 .....	15
3.7	Connecting to CAP SCCP .....	16
3.8	Supported TAPI operations .....	17
4	Licenses .....	21
5	Location Settings .....	22
6	Phone Number Format .....	23
7	Driver Management .....	25
8	PBX systems .....	26
9	Info about estos ECSTA for OpenScape 4000 .....	27

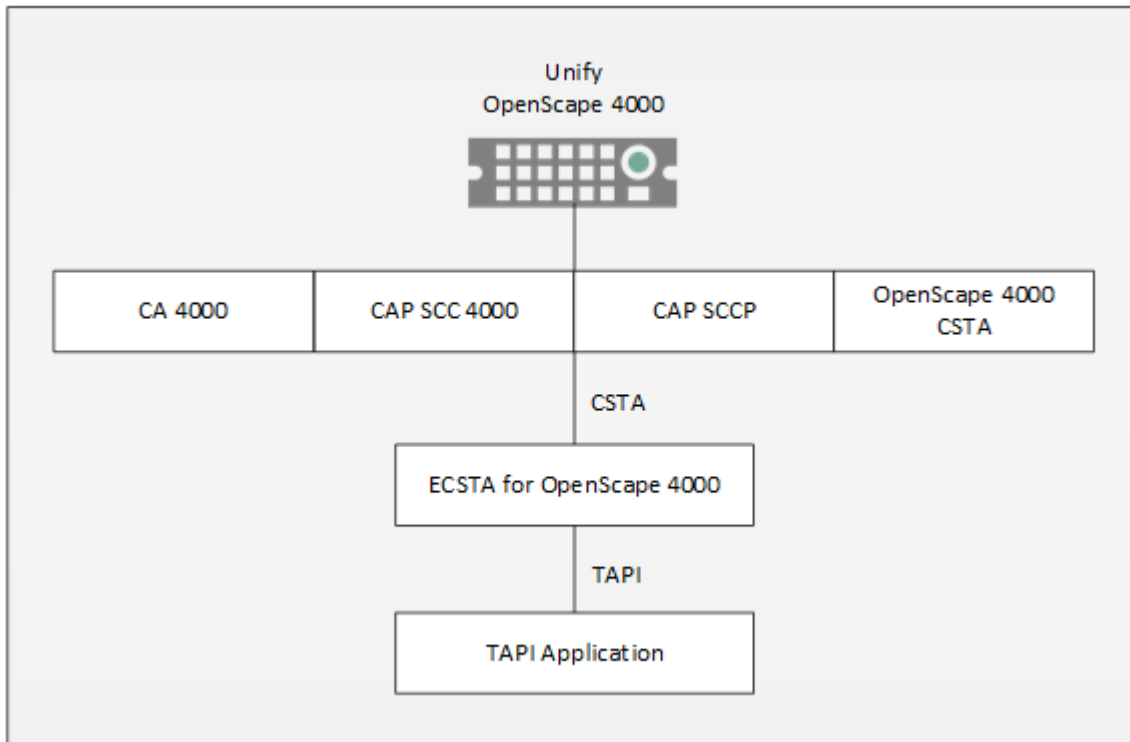


## 1 Introduction

estos ECSTA for OpenScape 4000 makes available several Telephony Service Providers for Microsoft® TAPI 2.1 (also 2.2 and 3.0). These TAPI drivers produce a central communication between a PC and the telephone system. On this server all devices on the telephone system are available as TAPI lines.

All estos ECSTA for OpenScape 4000 drivers use the efficient interface CSTA in order to communicate with the telephone system.

For the installation and management of the driver see Driver Management.



### Supported Telephone Systems

Driver	PBX	Telecom identification
ECSTA for OpenScape 4000	Unify OpenScape 4000	Telekom Octopus F900
ECSTA for OpenScape 4000	Unify CAP General	Telekom Octopus F CAP
Driver	PBX	Telecom identification
ECSTA for Hicom 300	Siemens Hicom 300 with CA300	

### Using the driver in the network

After installing the driver, you may use all configured line devices on the server as TAPI-lines. If you are using a server based CTI Software, you may install it now. To have the TAPI-devices available on all workstations, the TAPI-driver must be distributed in the network. There are the following options:

1. **estos UCServer**  
The estos UCServer is a CTI/UCC server software which distributes the telephony information across the network using a graphical client or a multi-line TAPI driver. Workgroups, domains, Active Directory® and Terminal Server are supported.
2. **estos CallControlGateway**  
The estos CallControlGateway for Lync/OCS is a gateway that connects the TAPI-lines with the Lync/OCS server. This enables the Lync/OCS client to use traditional telephone devices via Remote Call Control (RCC).
3. **Windows® Telephony Server**  
The Windows® Telephony Server is a component of Windows® server operating systems since Windows® NT. You will need a domain. The service is limited to domain users.

## 2 Siemens Hicom 300

When setting up the driver, follow these steps:

1. **Setup of the Connectivity Adapters CA 300**  
The action is analogous to CA 4000.
2. **Check network connection**  
If the connection is established using TCP/IP, check if you can reach the PBX system (ping hostname)
3. **Driver installation**  
See also Settings

### 2.1 General Settings

The connection between ECSTA and CA 300 is established over a TCP/IP network communication.

#### Connection using a network (TCP/IP)

- Input here the host name or the IP address of the computer on which the CA300 is installed. The TCP port for the connection must be the same one which was configured in the application of the CA300.
- **Please note the following**  
You require, in any case, a Connectivity Adapter CA300 that establishes a connection to the telephone system.

### 2.2 Advanced Settings

#### Node numbers

If your PBX system is using node numbers you can enter these numbers semicolon separated. These node numbers are removed from numbers presented by the pbx.

#### Snapshot for active calls

The driver can validate existing calls. This prevents that calls are displayed on the PC that do no more exist in the PBX system.

Enter a time interval in seconds.

The higher this value the longer it takes for the driver to detect a hanging call. The lower this value the higher is the load on the PBX.

#### Retry MonitorStart

In the event that the driver cannot start monitoring an extension because, for example, the extension has not been connected to the PBX, the driver will attempt to start monitoring at periodic intervals.

Enter a time interval in seconds.

### 2.3 TAPI Lines

Enter the lines that the driver should make available through TAPI. The numbers are the internal phone numbers for your devices. The names will be used to display the TAPI lines.

#### Phone Number Format

The lines can optionally be indicated as an internal phone number, for example 123 or canonical +49(30)12345-123.

You should use canonical phone numbers if you use several instances of Tapi driver and thus switch on several telephone systems at the same time. A canonical phone number consists as follows:

*+Country code (prefix) Local prefix-extension*

In the dialogue Location You can configure the country code, area code and local dialing prefix.

**Load Lines**

The available lines are determined automatically from the telephone system. Thereby all phone numbers are requested that are configured under Location in the extension area.

**Manual addition of a line**

Give the internal phone number of the phone. Optionally, a name can also be given.

**Import text**

You can import a list of lines from a text file. The file must begin every line with the phone number. Optionally, the name can also be split with a comma.

**Export text**

You may export the actual line configuration to a text file.

**Attention**

After the installation of the driver it may be necessary to restart the computer.

**2.4 Supported TAPI operations**

The driver offers the following TAPI call control operations.

Action:	Corresponding TAPI function:
Dial	TSPI_lineMakecall
Hang up	TSPI_lineDrop
Answer call	TSPI_lineAnswer
Hold call	TSPI_lineHold
Retrieve call	TSPI_lineUnhold
Redirect call	TSPI_lineRedirect
Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
Add to conference	TSPI_lineAddToConference
Remove from conference	TSPI_lineRemoveFromConference
Pickup	TSPI_linePickup

DTMF dialing	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Forwarding	TSPI_lineForward TSPI_lineGetAddressStatus <ul style="list-style-type: none"> <li>• LINEFORWARDMODE_UNCOND</li> <li>• LINEFORWARDMODE_BUSY</li> <li>• LINEFORWARDMODE_NOANSW</li> </ul>
Message waiting	TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

The following TAPI functions are implemented due to requirements of the TAPI subsystem.

**Other functions exported by the driver:**

TSPI\_lineSendUserUserInfo

TSPI\_lineClose

TSPI\_lineCloseCall

TSPI\_lineConditionalMediaDetection

TSPI\_lineDevSpecific

TSPI\_lineDevSpecificFeature

TSPI\_lineGetDevConfig

TSPI\_lineSetDevConfig

TSPI\_lineGetAddressCaps

TSPI\_lineGetAddressStatus

TSPI\_lineGetAddressID

TSPI\_lineGetCallAddressID

TSPI\_lineGetCallInfo

TSPI\_lineGetCallStatus



TSPI\_lineGetDevCaps

TSPI\_lineGetExtensionID

TSPI\_lineGetIcon

TSPI\_lineGetID

TSPI\_lineGetNumAddressIDs

TSPI\_lineNegotiateExtVersion

TSPI\_lineNegotiateTSPIVersion

TSPI\_lineOpen

TSPI\_lineSelectExtVersion

TSPI\_lineSetDefaultMediaDetection

TSPI\_lineSetStatusMessages

TSPI\_lineSetAppSpecific

TSPI\_lineSetCallData

TSPI\_providerCreateLineDevice

TSPI\_providerEnumDevices

TSPI\_providerFreeDialogInstance

TSPI\_providerGenericDialogData

TSPI\_providerInit

TSPI\_providerShutdown

TSPI\_providerUIIdentify

TSPI\_lineGetCallIDs

TUISPI\_lineConfigDialog

TUISPI\_lineConfigDialogEdit

TUISPI\_providerConfig

TUISPI\_providerInstall

TUISPI\_providerRemove

TUISPI\_providerGenericDialog

TUISPI\_providerGenericDialogData

## 2.5 Connecting to CAP General

The ECSTA for Unify CAP requires a CAP-S license for each line. You may enter the CAP license, the ECSTA should use when connecting to the CAP server.

The operation of CAP is independent of the related telephone system and takes place via the CAP Multidomain SCCP in "Harmonized Mode". See also Connecting via SCCP.

When setting up the driver, follow these steps:

1. **Install and configure CAP**  
Install the CAP Server, the Connectivity Adapter and the SCCP.
2. **Add a user in CAP**  
Add and configure a user in the CAP server.
3. **Driver installation**  
See also Settings

### 3 Unify OpenScape 4000

You can switch on the driver on the following modes at the telephone system:

1. **OpenScape 4000 - Native Mode OpenScape 4000 CSTA**  
The driver will be connected to the OpenScape 4000 CSTA middleware. The software OpenScape 4000 CSTA is included inside the OpenScape 4000 V6 and does not require a PC installation. For connecting a OpenScape 4000 V5 or lower the middleware must be installed on a windows PC (stand alone). See also Connecting to OpenScape 4000 CSTA
2. **OpenScape 4000 - Native Mode CA4000 (CAP Version 2)**  
At the Connectivity Adapter CA4000, the driver in the "Native Mode" with CSTA Phase 3 can be switched on directly at a OpenScape 4000. See also activation at CA 4000
3. **OpenScape 4000 - Native Mode CAP Call Control**  
At the CAP Call Control, the driver in the Single domain "Native Mode" with CSTA Phase 3 can be switched on at a OpenScape 4000. See also activation at SCC 4000
4. **Harmonized Mode SCC Proxy**  
At the CAP Multi domain SCC proxy, the driver can either be operated in the "Harmonized" or in the "Native Mode".  
In "Native Mode", only the OpenScape 4000 is supported. The setup takes place correspondingly to Connection to SCC 4000. In the "Harmonized mode", all CAP connected telephone systems are supported according to the compatibility of CAP. See in addition General connection to CAP.

When setting up the driver, follow these steps:

1. **Install and configure CAP**  
Install the necessary Connectivity Adapter or the CAP server.
2. **Driver installation**  
See also Settings

#### 3.1 General Settings

The connection between the ECSTA and the CSTA middleware is established using a TCP/IP network connection. The driver may be operated using different modes:

- **OpenScape 4000 - Native Mode OpenScape 4000 CSTA**  
This mode directly uses the OpenScape 4000 CSTA. The OpenScape 4000 CSTA is integrated into the OpenScape 4000 V6. For HiPath 4000 V5 and lower this middleware is installed on a PC. See also Connecting to OpenScape 4000 CSTA.
- **OpenScape 4000 - Native Mode CA4000**  
This mode directly uses the Connectivity Adapter CA4000 (CAP2). This mode can only be used with the OpenScape 4000. See also Connecting to CA4000.
- **OpenScape 4000 - Native Mode CAP Call Control**  
This mode uses the Cap Call Control SCC 4000: This mode can only be used with the OpenScape 4000. It is required to have a valid CAP license (Default CAP-S). It is required to configure a user for CSTA access in the CAP user management. See also Connecting to SCC 4000.
- **Harmonized Mode SCC Proxy**  
This mode uses the CAP SCC proxy. This mode can be used with all telephone systems supported by CAP. It is necessary to input the employed CAP license (Default CAP-S) and install the user in the CAP User management. See also CAP general.

#### Connection using a network (TCP/IP)

- Enter the host name or the IP address of the computer where the CAP server, the CA4000 or the OpenScape 4000 CSTA is installed. The TCP port for the connection should be the same as configured in CAP or CA4000.

- **Please note the following**  
A CAP server, Connectivity Adapter CA4000 or OpenScape 4000 CSTA is required for the connection to the PBX system.  
See also activation in OpenScape 4000

### 3.2 Advanced Settings

#### **Readout trunk lines from the PBX system**

If this option is enabled, the available trunk lines are requested from the telephone system.

#### **Report incoming calls on busy extension**

If an extension is busy any incoming call is notified.

#### **Indicate calls on a diverted extension**

If the driver shall signal incoming calls on a forwarded extension, activate this option.

#### **Use handsfree mode for outgoing calls**

Normally, the end-user device for outgoing calls is transferred to handsfree mode. If you only want to proceed with the call when the telephone receiver is picked up, or the outgoing call is confirmed, deactivate this option.

#### **Node numbers**

If your PBX system is using node numbers you can enter these numbers semicolon separated. These node numbers are removed from numbers presented by the pbx.

#### **Non-unique numbering plan**

If the connected OpenScape 4000 pbx system is using a "non-unique numbering plan" this option has to be enabled. Otherwise leave it disabled.

#### **Snapshot for active calls**

The driver can validate existing calls. This prevents that calls are displayed on the PC that do no more exist in the PBX system.

Enter a time interval in seconds.

The higher this value the longer it takes for the driver to detect a hanging call. The lower this value the higher is the load on the PBX.

#### **Retry MonitorStart**

In the event that the driver cannot start monitoring an extension because, for example, the extension has not been connected to the PBX, the driver will attempt to start monitoring at periodic intervals.

Enter a time interval in seconds.

### 3.3 TAPI Lines

Enter the lines that the driver should make available through TAPI. The numbers are the internal phone numbers for your devices. The names will be used to display the TAPI lines.

#### **Phone Number Format**

The lines can optionally be indicated as an internal phone number, for example 123 or canonical +49(30)12345-123.

You should use canonical phone numbers if you use several instances of Tapi driver and thus switch on several telephone systems at the same time. A canonical phone number consists as follows:

*+Country code (prefix) Local prefix-extension*

In the dialogue Location You can configure the country code, area code and local dialing prefix.

**Load Lines**

The available lines are determined automatically from the telephone system.

**Manual addition of a line**

Give the internal phone number of the phone. Optionally, a name can also be given.

**Import text**

You can import a list of lines from a text file. The file must begin every line with the phone number. Optionally, the name can also be split with a comma.

**Export text**

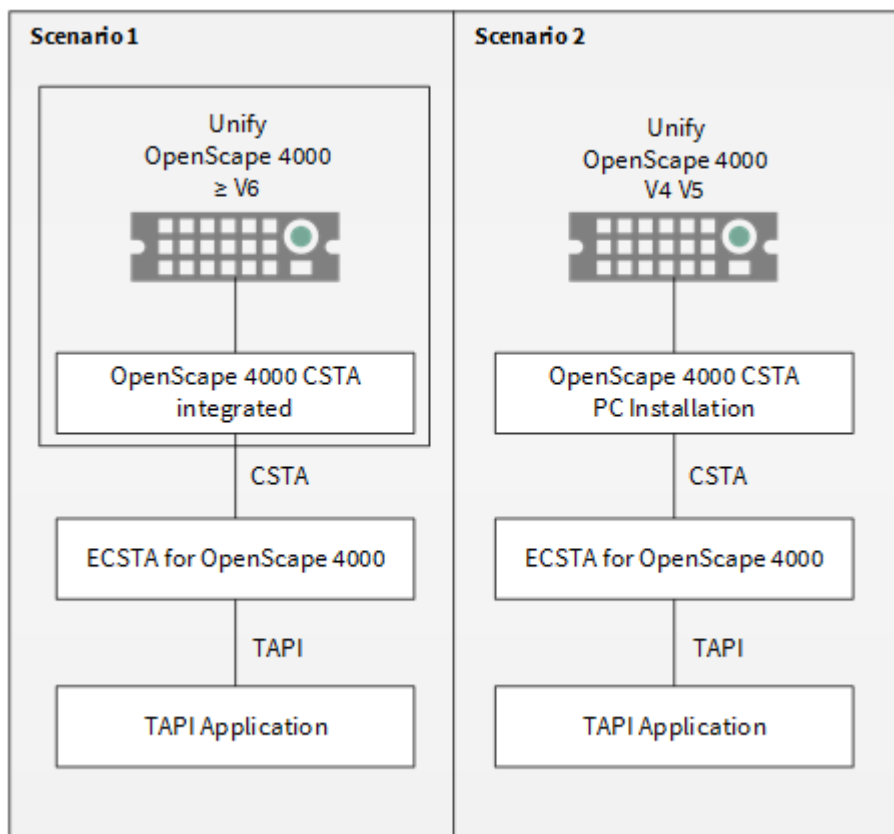
You may export the actual line configuration to a text file.

**Attention**

After the installation of the driver it may be necessary to restart the computer.

**3.4 Connecting to OpenScape 4000 CSTA**

The OpenScape 4000 CSTA is a Unify product that allows to connect the ECSTA to the OpenScape 4000. The OpenScape 4000 CSTA is the successor of the HiPath CAP Inside V1. The middleware is integrated into the OpenScape 4000 V6 (Scenario 1) and does not require a PC installation. For connecting a OpenScape 4000 V5 or lower the middleware will be installed (stand alone) on a PC.



**Licensing for the OpenScape 4000 CSTA**

The Application (ECSTA) identifies itself using an Application-ID. The Application-ID can be configured in the ECSTA connection options. In the OpenScape 4000 CSTA Administration you can configure an appropriate license option for this application.

When using a OpenScape 4000 V6, the OpenScape 4000 CSTA is integrated into the PBX system and does not require a PC installation. The OpenScape 4000 CSTA is configured on the the PBX system.

When using a OpenScope 4000 V4 or V5, the OpenScope 4000 CSTA must be installed on a PC.

### Installation and Configuration

The installation and configuration of the OpenScope 4000 CSTA is described in the document 'OpenScope 4000 CSTA V1 Installation and Problem Determination Guide'. It can be found in the Internet.

### Licensing

The Software OpenScope 4000 CSTA requires a license if more then 10 lines will be used. The licensing is configured for each application in the Web based Administration.

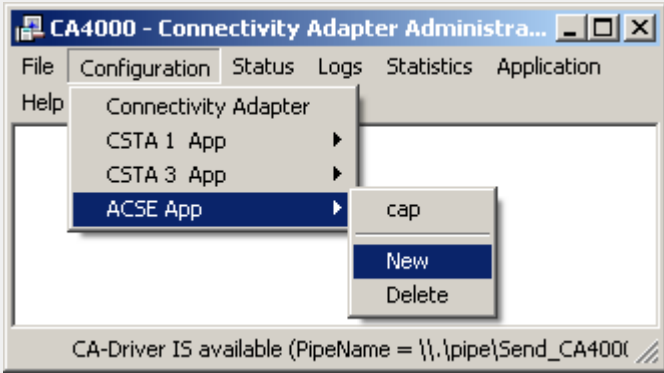
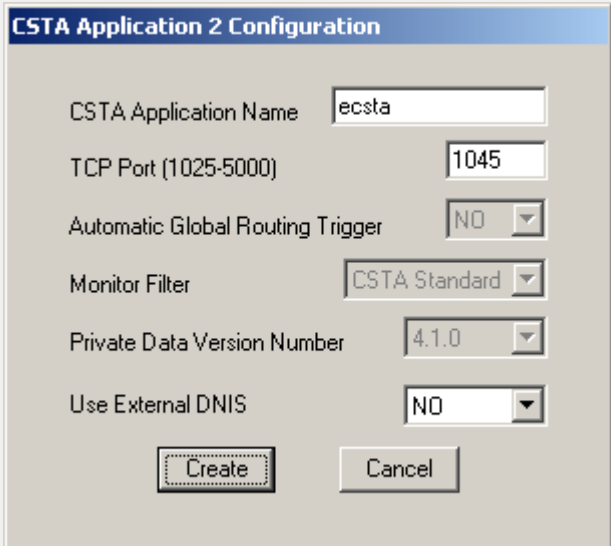
### Application settings

In the Web based Administration add a new application. Enter the name (ECSTA) and the TCP Port (Default 1040).

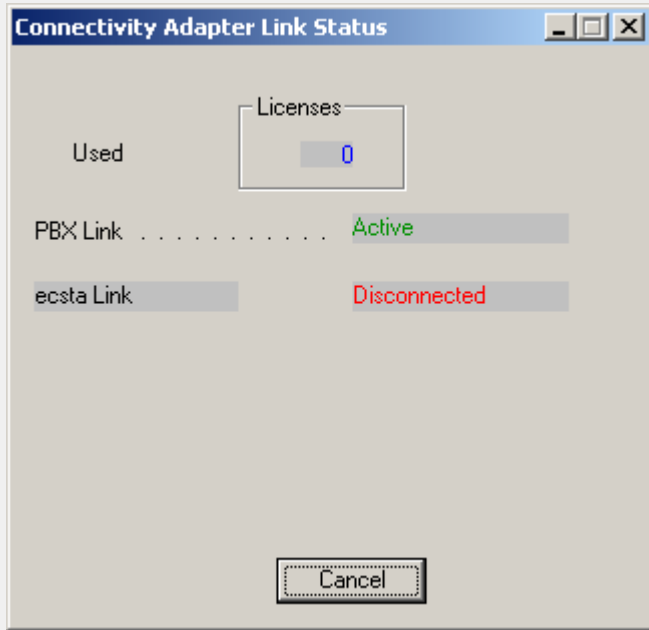
The ECSTA connects to the OpenScope 4000 CSTA during the lines are read out and as soon as a Tapi line is opened.

## 3.5 Connecting to CA4000

Install the Connectivity Adapter CA4000. It is part of the Unify CAP Software. The CA4000 Version 6.1.0.1 (CAP2) may be used without installing the CAP server.

<p>Add a new ACSE Application in the configuration of the CA4000 Administration.</p>	
<p>Enter the name (ECSTA) and TCP port (default 1045).</p>	

You may watch the status of the CSTA link between the ECSTA and the CA4000 using the Connectivity Adapter Link Status window. As soon as the ECSTA is connected to the CA4000, the Link changes to Active. Hint: Please verify that the 'Connectivity Adapter' service is running. The ECSTA connects to the CA4000 during the lines are read out and as soon as a Tapi line is opened.

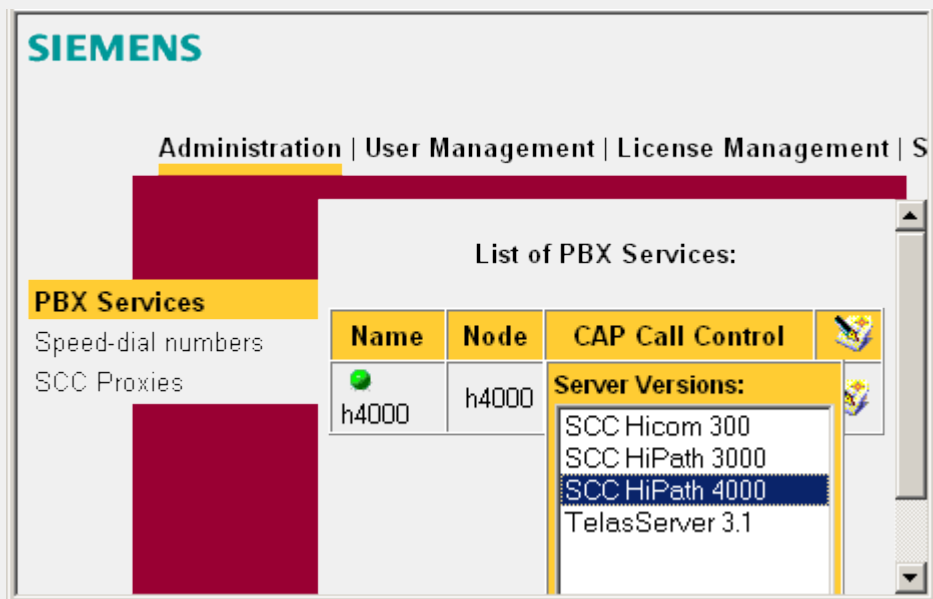


Install the ECSTA. At CAP Login use the option **OpenScape 4000 - Native Mode CA4000**. In network connections use the host, where the CA4000 is installed and use the TSP port (default 1045) that you configured in the CA4000. See also General Settings.



### 3.6 Connecting to CAP SCC 4000

Install the CAP Call Control SCC 4000. It is part of the Unify CAP software. In CAP Version 2, the SCC 4000 requires a CA4000.

If there is no SCC installed in the CAP Administration, add a SCC OpenScape 4000 in PBX Services.



Enter the details using the CAP help file. Remember the CAP Call Control Port (default: 26535).

Service name:	<input type="text" value="h4000"/>	
Service node:	<input type="text" value="h4000"/>	
CAP Call Control host name:	<input type="text" value="caphost"/>	
CAP Call Control IP address:	<input type="text" value="192.168.2.150"/>	(optional)
CAP Call Control port:	<input type="text" value="26535"/>	(optional)
CAP CA4000 IP address:	<input type="text" value="127.0.0.1"/>	(optional)
CAP CA4000 port:	<input type="text" value="1040"/>	(optional)
Speed-dial numbers:	<input type="text" value="No speed-dial numbers"/>	
Outside line access:	<input type="text" value="0"/>	
Country code:	<input type="text" value="49"/>	
Domain numbers:	<input type="text" value="(8151)36856"/>	 
	<input type="checkbox"/> Disable PBX	

Install the ECSTA. At CAP Login use the option **OpenScope 4000 - Native Mode CAP Call Control**. For the Network connection use the host, where the CAP Server is installed and use the TCP port (default 26535), that you configured in the SCC 4000.  
See also General Settings.

### 3.7 Connecting to CAP SCCP

The multi domain SCCP is part of the Unify CAP Software. After installing a Connectivity Adapter and the CAP CAP Call Control Service, install the multi domain SCC Proxy.

If there is no SCC Proxy installed, add one in the CAP Administration. Enter the details as described in the CAP elp. Remember the SCCP Port (default: 27535).

Service Name:	<input type="text" value="sccp4000"/>
Service Identifier:	<input type="text" value="sccp4000"/>
SCC Proxy hostname:	<input type="text" value="caphost"/>
SCC Proxy IP address:	<input type="text" value="192.168.2.150"/>
SCC Proxy port:	<input type="text" value="27535"/>
	<input type="checkbox"/> Disable SCC Proxy

Install the ECSTA. At CAP Login use the option **Harmonized Mode SCC Proxy**. For the network connection use the host where the CAP server is installed and use the TCP port (default 27535), that you configured in the SCCP.  
See also General Settings.



### 3.8 Supported TAPI operations

The driver offers the following TAPI call control operations.

Action:	Corresponding TAPI function:
Dial	TSPI_lineMakecall
Hang up	TSPI_lineDrop
Answer call	TSPI_lineAnswer
Hold call	TSPI_lineHold
Retrieve call	TSPI_lineUnhold
Redirect call	TSPI_lineRedirect
Blind transfer	TSPI_lineBlindTransfer
Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
Add to conference	TSPI_lineAddToConference
Remove from conference	TSPI_lineRemoveFromConference
Callback busy	TSPI_lineCompleteCall (LINECALLFEATURE2_COMPLCALLBACK)
Pickup	TSPI_linePickup
DTMF dialing	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Forwarding	TSPI_lineForward TSPI_lineGetAddressStatus <ul style="list-style-type: none"> <li>• LINEFORWARDMODE_UNCOND</li> <li>• LINEFORWARDMODE_UNCONDEXTERNAL</li> <li>• LINEFORWARDMODE_UNCONDINTERNAL</li> <li>• LINEFORWARDMODE_BUSY</li> </ul>

	<ul style="list-style-type: none"> <li>LINEFORWARDMODE_NOANSW</li> </ul>
Do not disturb	TSPI_lineForward TSPI_lineGetAddressStatus
Message waiting	TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

The following TAPI functions are implemented due to requirements of the TAPI subsystem.

**Other functions exported by the driver:**

TSPI\_lineSendUserUserInfo

TSPI\_lineClose

TSPI\_lineCloseCall

TSPI\_lineConditionalMediaDetection

TSPI\_lineDevSpecific

TSPI\_lineDevSpecificFeature

TSPI\_lineGetDevConfig

TSPI\_lineSetDevConfig

TSPI\_lineGetAddressCaps

TSPI\_lineGetAddressStatus

TSPI\_lineGetAddressID

TSPI\_lineGetCallAddressID

TSPI\_lineGetCallInfo

TSPI\_lineGetCallStatus

TSPI\_lineGetDevCaps

TSPI\_lineGetExtensionID

TSPI\_lineGetIcon

TSPI\_lineGetID

TSPI\_lineGetNumAddressIDs

TSPI\_lineNegotiateExtVersion

TSPI\_lineNegotiateTSPIVersion

TSPI\_lineOpen

TSPI\_lineSelectExtVersion

TSPI\_lineSetDefaultMediaDetection

TSPI\_lineSetStatusMessages

TSPI\_lineSetAppSpecific

TSPI\_lineSetCallData

TSPI\_providerCreateLineDevice

TSPI\_providerEnumDevices

TSPI\_providerFreeDialogInstance

TSPI\_providerGenericDialogData

TSPI\_providerInit

TSPI\_providerShutdown

TSPI\_providerUIIdentify

TSPI\_lineGetCallIDs

TUISPI\_lineConfigDialog

TUISPI\_lineConfigDialogEdit

TUISPI\_providerConfig

TUISPI\_providerInstall

TUISPI\_providerRemove

TUISPI\_providerGenericDialog

TUISPI\_providerGenericDialogData

## 4 Licenses

You can test the driver for 45 days with 25 lines without a license and without other limitations. Once the trial period has expired, the lines will automatically be removed. You can purchase licenses codes and activate the driver permanently with them. To purchase licenses, please contact your dealer.

As many lines as desired may be configured in the driver. Opening a line requires a license. Once the existing licenses have been assigned to lines, opening more lines will not be allowed.

If you have added multiple driver instances, all instances will share the license specified. You can distribute the lines to any instance as you desire.

## 5 Location Settings

The phone numbers of the telephone system are defined in the Location Settings

### Extension Range

Indicate here which internal phone numbers exist in the phone system. This information is used to determine the available lines from the phone system. The internal phone numbers of the telephone system and the phone number information of a call are used to determine whether it is an internal or an external call. In addition, when lines are generated automatically, estos UCServer checks whether the number of the line to be generated automatically lies within the range of internal numbers. Only then is the line generated by estos ECSTA for OpenScape 4000 and the TAPI notified.

### Location

Indicate here which international phone numbers precede the internal extension numbers. The input of this location information should only be carried out if you use several driver instances and have connected several telephone systems. This location information can only be configured when the option Use Location is switched on. If you enter a location here, all extension phone numbers are entered fully international.

Example: With location information '49(89)1234' the extension '100' is formatted as '49(89)1234-100'.

### Phone Number Format

The phone number registered from the driver at the application can be changed with rules. Moreover, you can also change phone numbers sent by the PC to the telephone system. See Phone number formatting.

## 6 Phone Number Format

You may enter rules for formatting the phone numbers.

The phone numbers that are reported from the PBX system to the PC and the numbers that are send from the PC to the PBX system may be modified with a Search and Replace function.

The phone numbers that are sent from the Tapi Application to the PBX (make call) may be modified as well.

Each line in the list contains an option if direct text compare or a regular expression is used.

The Search and Replace function uses regular expressions. If a search pattern matches, the result from replace with will be used as output. If the search pattern does not match, the original number will be reported unchanged. The entries in the list are processed one after each other. If one match is found the remaining entries will be ignored.

There are three categories:

- **Incoming**  
This section is for phone number from incoming calls that are reported from the PBX system to the PC.
- **Outgoing**  
This section is for phone number from outgoing calls that are reported from the PBX system to the PC.
- **PC Dialing**  
This section is for phone numbers that are dialed on the PC and send to the PBX system

### Search for:

Enter the regular expression that will be used to find a phone number.

Hint: The caret (^) can be found on the upper left key of a keyboard with German layout.

An overview of allowed expressions:

Character	Description
^	The beginning of the phone number. The expression "^0" matches '0' only at the beginning of a phone number.
^	The caret (^) immediately following the left-bracket ([]) has a different meaning. It is used to exclude the remaining characters within brackets from matching the target string. The expression "[^0-8]" indicates that the target character should not be 0
\$	The dollar sign (\$) will match the end of the string. The expression "152\$" will match the substring "152" only if it is at the end of the string.
	The alternation character ( ) allows either expression on its side to match the target string. The expression "8 9" will match '8' as well as '9'.
.	The dot (.) allows any character (or any number).
*	The asterisk (*) indicates that the character to the left of the asterisk in the expression should

	match 0 or more times.
+	The plus (+) is similar to asterix but there should be at least one match of the character to the left of the + sign in the expression.
?	The question mark (?) matches the character to its left 0 or 1 times.
()	The parenthesis affects the order of pattern evaluation and also serves as a tagged expression that can be used when replacing the matched sub-string with another expression.
[]	The corner brackets ([ and ]) indicates the amount of signs that are permitted at this point.

**Replace with:**

Enter the expression that defines how the number is to be formatted.

\1 represents the first matched expression enclosed by parentheses '(')' from the *search pattern* field.

\2 the second ...

**Check:**

You may check your expressions right here by entering a phone number in the indicate field. The resulting output will be displayed. If the expression from the search pattern is not found, the phone number will be send to the output without modification.

**Examples:**

Result	Search for	Replace with
Remove a leading 0 from the phone number	^0(.*)	\1
Replace a leading 80 at the beginning of the phone number by a 0	^80(.*)	0\1
Remove a private pin number that may be identified by a 50 followed by a 3 digit pin.	^50[0-9][0-9][0-9](.*)	\1
Suppress all internal numbers having a 3-digit extension.	^[0-9][0-9][0-9]\$	
Add an access code (leading 0) to all numbers with more than 3 digits (e.g. all external numbers).	^([0-9][0-9][0-9].+)	0\1
Add the PBX system root number (03012345) to all internal numbers (with 1 to 3 digits)	^([0-9][0-9]?[0-9]?)\$	03012345\1
Adding an area code to all numbers not beginning with 0 and containing at least 4 digits (thus not internal).	^([\^0][0-9][0-9][0-9].*)	08151\1

See also location.



## 7 Driver Management

### Installation

The driver is installed on the system with the Windows® Installer (msi) package. If the set-up package contains several drivers, you can select which drivers should be installed during the set-up.

### Driver instance

The driver can be used to connect one or several phone systems. For this purpose one or several driver instances are registered in Windows® Tapi System.

### Register at Tapi System

During the installation, an instance from the selected driver is already registered at the Tapi system. Thereby, you select the necessary data in a Wizard in order to connect the driver with the telephone system.

### Configuration of Driver instance

The configuration of the driver instances takes place either over *Telephone and Modem option* in the Control Panel or over the standard program *Advanced Telephone Driver option* that can be found in the Control Panel or in the Start Menu.

### Add further driver instances

If you want to connect the computer with a further telephone system, you must add a further instance of the driver to the Tapi system. This takes place with Help in the standard program *Advanced Telephone Driver options* that can be found in the Control Panel or in the Start Menu.

### Updates

To install an Update start the Windows® Installer Package (msi).

If a driver instance is configured, this is deleted during the Update and is automatically added again after the Update is completed. If several driver instances are configured, the computer must be restarted after the Update.

### De-installation

The Deinstallation takes place via the Windows® Software Administration. In the Deinstallation, all instances of the driver are removed from the Tapi system and the software uninstalled.

## 8 PBX systems

Driver	PBX	Telecom identification
ECSTA for OpenScape 4000	Unify OpenScape 4000	Telekom Octopus F900
ECSTA for OpenScape 4000	Unify CAP General	Telekom Octopus F CAP

## **9 Info about estos ECSTA for OpenScape 4000**

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