

estos ECSTA for Alcatel OmniPCX

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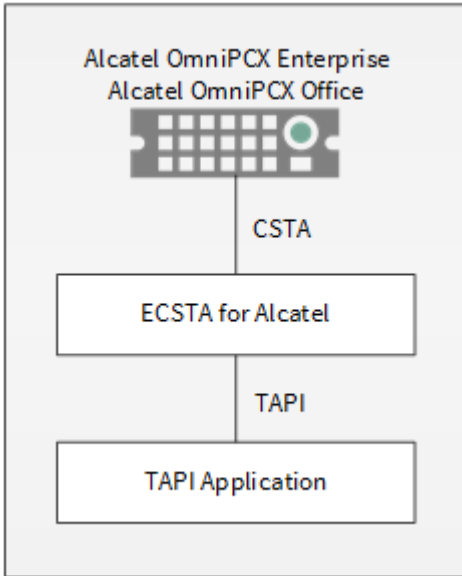
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1 Introduction

estos ECSTA for Alcatel OmniPCX 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 Alcatel OmniPCX 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 Alcatel OmniPCX Enterprise	Alcatel OmniPCX Enterprise	
ECSTA for Alcatel OmniPCX Enterprise	Alcatel 4400	
ECSTA for Alcatel OmniPCX Office	Alcatel OmniPCX Office	Telekom Octopus Open 730 / 830 / 930

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 Alcatel OmniPCX Office

When setting up the driver, follow these steps:

1. Setup the telephone system for CSTA use
Enter the required licenses into the PBX system.
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 to the PBX can be established using a TCP/IP link.

Login

The driver may use different licenses. The licenses must be installed in the PBX system.

Please note the following

The availability of licenses in the system is first tested when the Tapi lines are opened. If a line cannot be opened, this can be because no corresponding licenses in the system are available.

- Tapi 2.0 Server
These licenses allow you to use two lines for each connection. You may add additional instances of the driver with two lines each.
- Tapi 2.1 Server
These licenses are used for example by the Alcatel TAPI Service Provider.
- CSTA Server
These licenses are the common CSTA licenses.

Connection using a network (TCP/IP)

Enter the host name or IP address of the PBX. The default port for CSTA is 2555.

Please note the following

You can under Advanced Settings specify a login for the 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.

Emulate blind transfer

If the PBX system does not offer blind transfer the driver can emulate this feature. The driver will setup a consultation transfer which is merged as soon as the called destination is rings.

Blind transfer timeout

Timeout for the blind transfer emulation. The consultation call must be answered within this timeout. Otherwise the consultation call is canceled and the initial call is retrieved.

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
Blind transfer ²	TSPI_lineBlindTransfer
Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
DTMF dialing	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Forwarding	TSPI_lineForward TSPI_lineGetAddressStatus <ul style="list-style-type: none"> • LINEFORWARDMODE_UNCOND • LINEFORWARDMODE_BUSY
Message waiting	TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

² Emulated by the driver (System does not natively support this feature)

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

Other functions exported by the driver:

TSPI_lineSendUserUser Info
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

3 Alcatel OmniPCX Enterprise

SIP devices are not supported by the Alcatel OmniPCX Enterprise CSTA Interface. This is a system-side shortcoming.

When setting up the driver, follow these steps:

1. Setup the telephone system for CSTA use
Configure CSTA on TCP port 2555. Enter the required CSTA licenses.
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

3.1 General Settings

3.1.1 CSTA-Connection

IP-address - port

Enter the IP address and port of the PBX. The default port for CSTA connections is 2555.

2. Master (optional)

When the phone system has a second master (reliability) please enter the second IP-address and port.

User / password (optional)

Normally user and password can be left empty. If you want to have a Tapi Premium Server compatible login, enter 'TAIIPREMSERV' for both.

3.1.2 Connection to the management interface

Using the connection to the management interface the driver can query and set call forwardings or DND for the terminals. If multiple PBX nodes are in use you need to configure the PBX node number in advanced settings. When logging is enabled, all operations are logged accordingly.

Connect using

- no connection
The driver will not connect to the management interface. Call forwarding and DND can be neither monitored nor changed.
- Telnet
The connection is made via Telnet.
- SSH
The connection is made via SSH.

User / password

Enter the username and password for logging in to the management interface. Default is 'mtcl' for username and password.

3.2 Advanced Settings

Feature code pickup

Redirecting a ringing call to another extension (redirect) cannot be executed by the PBX system, if there is a

call forwarding on no answer configured for that extension. In that case the redirect is executed as direct pickup. Therefore the feature code for direct pickup is required. The default setting is '#**',

Report incoming calls on busy extension
If an extension is busy any incoming call is notified.

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.

Offer CLIP no screening
If enabled, the driver allows to set a individual number for outgoing calls.

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.

Emulate blind transfer
Due to the missing blind transfer support of the pbx system this feature can be emulated. The driver sets a consultation transfer which is merged when the destination is rings or answers the call. To use this feature on the Alcatel Enterprise, certain configuration requirements must be considered. If these conditions are met, the call can be merged while the destination is ringing. If the conditions are not met, the call can only be merged as soon as the destination has answered the call.
Well known settings in the telephone system for the blind transfer emulation are:

- In the *Specific Telephone Services* within *Features / Facilities* the option *Consult.call mod. On multi-line* must be set to *False*.
- The phone has to have no or at least two multiline keys configured. If the phone has one multiline key configured consultation and conference calls will fail with the configuration above.

Reference:

Possible implications for other functions in the telephone system, which are related with the required settings must be considered individually and in the documentation of the telephone system manufacturer.

Blind transfer timeout
Timeout for the blind transfer emulation.

Emulate diversion to an external destination
Allows you to transfer a call to an external destination. The call is answered and blind transferred afterwards.

Support for national- international indicator
The Alcatel OmniPCX Enterprise can resolve numbers of national and international calls itself or report them without trunk numbers and let the csta application complete these numbers. If the PBX does not complete the numbers with national and international prefixes you need to enable "Support for National-International indicator". The config user interface will then show you the national and international prefix the ECSTA will add to the numbers. Please note that this prefix must contain the outside line number according to the PBX (Default national prefix: 00 international prefix 000). In this configuration mode the PBX will send wrong numbers in case of a call transfer (the national, international indicator is not sent on transferred calls). It is therefore recommended to let the PBX complete numbers and disable the support for national and international indicators.

Recommended configuration:

- Within the PBX configuration (Application Settings, CSTA) activate the option "Set Callback On Calling Device"
- Within the ECSTA deactivate the Option Support for National- Internationalindicator.

Configure the external Callback Translator in the AlcatelOmniPCX Enterprise (Translator, External Numbering Plan, Ext. Callback Translation) like the following:

Callback Translator DEF:

No.Digits To Be Removed: 0

Digits to Add: 00

Callback Translator A:

No.Digits To Be Removed: 1

Digits to Add: 000

In other configuration scenarios the PBX can report wrong numbers.

Support tandem configuration.

If tandem configurations are used enable this setting. If the driver detects a change in call forwarding all lines are update to reflect call forward or dnd changes.

Node number

Node number of the connected Alcatel OmniPCX-Enterprise 0-99 (Default 1).

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. 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.

3.4 Supported TAPI operations

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Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
Pickup	TSPI_linePickup
DTMF dialing	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Forwarding ³	TSPI_lineForward TSPI_lineGetAddressStatus <ul style="list-style-type: none"> • LINEFORWARDMODE_UNCOND³

	<ul style="list-style-type: none"> • LINEFORWARDMODE_BUSY³ • LINEFORWARDMODE_NOANSWER³
Do Not Disturb ³	TSPI_lineForward TSPI_lineGetAddressStatus

² Emulated by the driver (System does not natively support this feature)

³ Forwarding support and do not disturb are supported, depending on the configured feature codes and the connection to the management interface of the PBX.

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

Other functions exported by the driver:

TSPI_lineSendUserUser Info
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.

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 sent 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 sent 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 asterix (*) indicates that the character to the left of the asterix 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 Alcatel OmniPCX Enterprise	Alcatel OmniPCX Enterprise	Octopus EP
ECSTA for Alcatel OmniPCX Enterprise	Alcatel 4400	
ECSTA for Alcatel OmniPCX Office	Alcatel OmniPCX Office	Telekom Octopus Open 730 / 830 / 930

9 Info about estos ECSTA for Alcatel OmniPCX

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Product updates can be found under <http://www.estos.de/>

Please find FAQ's and support under <http://support.estos.de>

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