

estos ECSTA for Teles Voice Application Server

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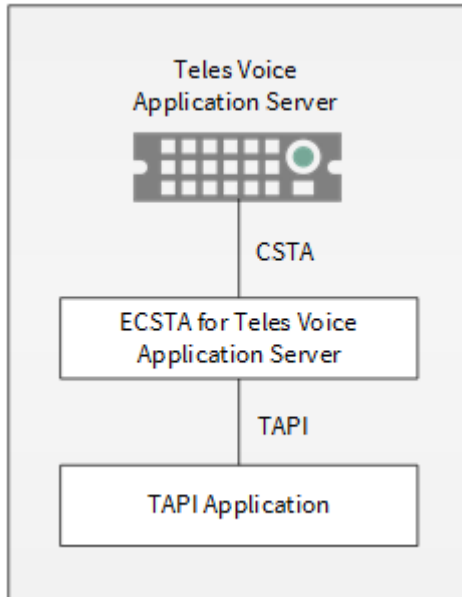
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1 Einleitung

estos ECSTA for Teles Voice Application Server stellt einen Telephony Service Provider für Microsoft® TAPI 2.1 (auch 2.2 und 3.0) zur Verfügung. Dieser TAPI Treiber stellen eine zentrale Kommunikation zwischen einem Server und der Telefonanlage her. Auf diesem Server stehen alle Geräte der Telefonanlage als TAPI Leitungen zur Verfügung.

All estos ECSTA for Teles Voice Application Server 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

| PBX | Driver |
|--------------------------------|--|
| Teles Voice Application Server | estos ECSTA for Teles Voice Application Server |

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 ECSTA for Teles Voice Application Server

When setting up the driver, follow these steps:

1. **Check network connection**
Check the availability of the Teles Voice Application Server CSTA SIP Server (ping hostname / IP address).
2. **Enable CSTA functionality for the devices.**
You must enable the CSTA feature in the Teles Voice Application Server configuration.
3. **Driver installation**
See also Settings

2.1 General Settings

Connection

The connection to the Teles Voice Application Server platform is established using SIP/TCP. Enter the IP address of the CSTA SIP server. The Default Port for the SIP connection is 5075.

Login

Enter the user name and password for the login to the CSTA SIP Server. The user name should be entered without domain.

Enter the service domain. This is for example: teles.at

2.2 Advanced Settings

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.

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.

Enter a time interval in seconds.

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 Tapi driver should provide as Tapi lines. The number is the internal phone number, the device-ID is the MAC address of the phone, the name will be used just for display. Optionally, each line may use additional line buttons from the phone as Tapi addresses. Enter the line buttons as semicolon separated list of phone numbers (e.g. 9011;9012;9013).

Phone Number Format

The lines must be canonically specified, for example +493012345123.

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

Menu Extras

This menu contains the following additional actions.

Load Lines

The available lines can be read out from the platform. In the case of this query, the participants of a number range specified by you will be read out. To this end, enter the prefix for all the phone numbers (e.g. +4989444) and the range of the participants phone numbers (e.g. 100 - 200).

Manual addition of a line

Specify the international phone number of the telephone (e.g. +49894441000). Optionally, a name can also be specified.

Import text

You can import a list of lines from a text file. Each line must contain the phone number, name.

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 Settings

- General Settings
- Location Settings
- TAPI Lines
- Advanced Settings
- Settings Licenses
- Phone Number Format

2.5 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.

3 Location Settings

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

Extension Range

Enter here which internal phone numbers exist in the PBX system. This information is used to detect internal calls. The internal telephone numbers of the telephone system and the telephone 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 Teles Voice Application Server 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.

4 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 "^o" matches 'o' 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 "[^o-8]" indicates that the target character should not be o |
| \$ | 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.

5 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.

6 Software Voraussetzungen

The estos ECSTA for Teles Voice Application Server can be installed on all Windows® systems that support Microsoft® TAPI 2.0 or higher. The following systems are supported in 32- as well as in 64-bit versions.

- Windows® 10
- Windows Server® 2008 R2
- Windows Server® 2012
- Windows Server® 2012 R2
- Windows Server® 2016
- Windows Server® 2019

7 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 |
| Dial in dial tone mode | TSPI_lineDial |
| Forwarding | TSPI_lineForward TSPI_lineGetAddressStatus <ul style="list-style-type: none"> • LINEFORWARDMODE_UNCOND |
| Do Not Disturb | TSPI_lineForward TSPI_lineGetAddressStatus |

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

8 Info about estos ECSTA for Teles Voice Application Server

estos ECSTA for Teles Voice Application Server is a product of estos GmbH.

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

Frequently asked questions and answers, as well as support, can be found under <https://www.estos.de/service>.

Logging

For diagnostic purposes the driver can create log files. These are stored in the specified path.

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