

estos ECSTA for Mitel MiVoice Office 400

5.0.17.794

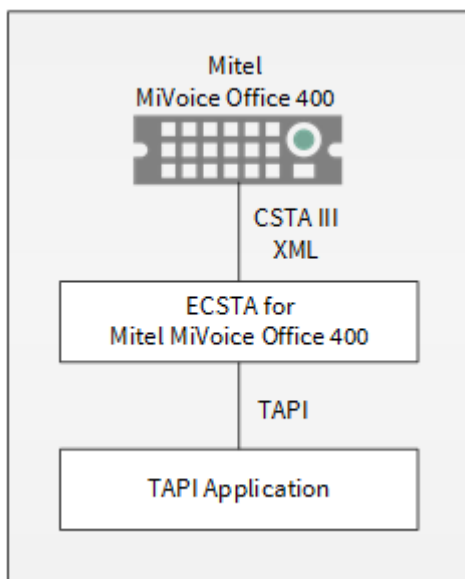
1	Introduction	4
2	Software requirements	5
3	Driver administration	6
4	Installation.....	7
5	PBX Configuration.....	8
6	Mitel MiVoice Office 400.....	9
6.1	General Settings.....	9
6.2	Line Settings.....	9
6.3	Advanced Settings	10
6.3.1	Phone Number Format.....	10
6.4	Licenses	12
7	Supported TAPI operations	13
8	Info about estos ECSTA for Mitel MiVoice Office 400	16

1 Introduction

estos ECSTA for Mitel MiVoice Office 400 offers a Telephony Service Provider (TSP) for Microsoft® TAPI 2.1 (also 2.2 and 3.0). This TAPI driver implements a central communication between a PC and the PBX system. estos ECSTA for Mitel MiVoice Office 400 uses the CSTA protocol for connecting to the PBX system.

For installation of the driver see Driver Installation.

For administration of the driver see Driver Administration.



Using 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 informations across the network using a graphical client or a multiline 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 Software requirements

An Mitel MiVoice Office 400 PBX system version 3.1 or higher is required.

The estos ECSTA for Mitel MiVoice Office 400 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

3 Driver administration

Installation

Using the Windows® Installer (msi) packet, the driver will be installed on the system.

Driver instance

The driver can be used to connect one or more PBX systems. For each PBX system you want to connect, you must configure one instance of the driver.

Register at Tapi System

During the installation, an instance in the already selected driver is registered at the Tapi System. For this purpose you indicate 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 via *Telephone and Modem options* in the Control Panel or via the provided program *Advanced Telephone Driver options*, that can be found in the Control Panel or Start menu.

Updates

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

If an instance of the driver is configured, it will be removed during the update process. It will be automatically re-added afterwards.

Deinstallation

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

4 Installation

For installation and administration of the driver see Driver management.

When setting up the driver, follow these steps:

1. **PBX Configuration**
Please check the PBX Configuration.
2. **Run driver setup**
Launche the MSI installation package to install the driver. There is an installer for 32 and for 64bit operating systems.
3. **Establish the connection to the PBX system**
Configure the connection to the PBX system. Each instance of the driver supports the connection to one PBX system.
4. **Line configuration**
The driver automatically offers all currently available devices from the PBX system as Tapi lines. No configuration is required.

5 PBX Configuration

The PBX system configuration can be accessed with a Web Browser.

CSTA-Service

The CSTA-Service in the PBX system must be enabled. The configuration can be found in **Configuration - IP-Network - CSTA-Service**. The default port for the CSTA-Service is 7001.

User account

The driver requires a user account to connect to the PBX system. The user account is configured in **Configuration - System - Access control - User account**.

Authorization profile

The Authorization profile that is assigned to the User profile needs the Interface access right for CTI third party.

Special settings for correct signalling of redirects

Under **Configuration - System - Extended - Signalling** set option **Call transfer without prior notice** to **Ring back tone**

6 Mitel MiVoice Office 400

estos ECSTA for Mitel MiVoice Office 400 can be used to control and monitor telephone devices attached to a Mitel MiVoice Office 400 PBX system. The driver can be installed in multiple instances. Each driver instance supports the connection to one PBX system.

The driver requires at least the PBX system version 3.1. Please check the PBX system configuration.

The connection to the PBX system is established using CSTA Phase III XML(ed5).

The PBX system requires CSTA licenses.

The driver automatically offers all currently available devices from the PBX system as Tapi lines. The line devices are updated automatically.

For Installation of the driver see Driver Installation.

For administration and configuration of the driver see Driver Administration.

6.1 General Settings

Connection

The connection to the PBX system is established using TCP. Enter the host name or IP address of the PBX system. The default port für TCP is 7001.

Login

Enter the user name and password. The user must be configured as a system user account. See also PBX system configuration.

6.2 Line Settings

Here you see all lines, the driver offers as Tapi Lines. The phone numbers are the internal callnumbers of your devices, the names are used for display only.

Limitations

Line Keys on the phones are not supported. The CSTA Interface of the Mitel MiVoice Office 400 does not provide information about line keys.

Automatic Update

The lines are automatically read and updated from the PBX system. Configuration changes as well as login and logouts at phones are automatically adopted.

Extras - Query available lines

The currently available lines are automatically read from the PBX system.

Extras - 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.

Extras - 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.

6.3 Advanced Settings

Phone Number Format:

- **Phone number format**
You may change the phone number format, that the driver reports to the applications. You may also change the phone numbers that are sent from the PC to the PBX. See Phone number formatting.

Advanced Parameters:

- **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.

6.3.1 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 match the phone number.

Hint: The Caret Sign (^) is located on the german keyboard on top left.

Here is a short description of the available expressions:

character	description
^	The beginning of the search string (phone number). The expression "^o" matches "o" only at the beginning of the search string.
^	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 sub-string "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 "1 2" will match "1" as well as "2".
.	The dot (.) will match any character.
*	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 asterisk 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.
[]	Brackets ([and]) enclosing a set of characters indicates that any of the enclosed characters may match the target character.

Replace with:

Enter the expression how the output of the phone number should look like.

\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:

Effect	search pattern	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 phone numbers that are internal (not more than 3 digits).	^[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).	<code>^([0-9][0-9][0-9].+)</code>	<code>0\1</code>
Add an area code and prefix (03012345) to all internal numbers (1 to 3 digits).	<code>^([0-9][0-9]?[0-9]?)\$</code>	<code>03012345\1</code>
Adding an area code to all numbers not beginning with 0 and containing at least 4 digits (thus not internal).	<code>^[^0][0-9][0-9][0-9].*</code>	<code>08151\1</code>

6.4 Licenses

The driver can be tested without license for 45 days with 25 lines. After the trial period, the lines can no longer be controlled and monitored. You can purchase license keys that unlock the driver permanently. To purchase licenses, contact your dealer.

The driver can be configured any number of lines. Opening a line consumes a license. If the existing licenses are used up, opening further lines will fail.

If you have configured multiple driver instances, all instances share the licenses entered. You can consume licenses anywhere on different instances.

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
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"> • LINEFORWARDMODE_UNCOND • LINEFORWARDMODE_BUSY • LINEFORWARDMODE_NOANSW
Message waiting	TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

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

Other exported functions:

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 Mitel MiVoice Office 400

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