

OpenScape Business TAPI 170 Installation and Configuration

Administrator Documentation

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Our Quality and Environmental Management Systems are implemented according to the requirements of the ISO9001 and ISO14001 standards and are certified by an external certification company.

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1 Introduction

1.1 General

OpenScape Business TAPI 170

OpenScape Business TAPI 170 is a “3rd party” telephony service provider based on Windows TAPI 2.2 functionality. OpenScape Business TAPI 170 enables CTI-based server applications to control and to monitor multiple phones / devices connected to OpenScape Business.

Application of OpenScape Business TAPI 170

OpenScape Business TAPI 170 can be used in different operation and connection modes. You find further information in the section [Operation and connection mode alternatives](#).

Documentation

- Various abbreviations are used in this document to improve readability. An overview of all abbreviations can be found in the [List of abbreviations](#).
- To improve readability, "telecommunications system(s)" has been abbreviated to "system(s)" or "communication system(s)" in this document.
- The product name OpenScape Business TAPI 170 has also been abbreviated to TAPI 170 for the same reason.
- All described operation sequences and dialogs correspond to the referred Windows versions. With using other Windows versions you have to activate the functions accordingly.

Maximum number of TAPI 170 users

The maximum numbers of TAPI 170 users / maximum number of parallel TAPI 170 connections depend on the OpenScape Business system model. You find more information about this limitations in the corresponding sales information.

Licensing of TAPI 170

The TAPI 170 licensing is handled in the OpenScape Business. Further information is available in the OpenScape Business documentation.



Each TAPI 170 user connected to OpenScape Business requires a separate user licence (starting with the first user).



The use of older HiPath TAPI 170 licences is not possible.

Supported features

OpenScape Business TAPI 170 software provides in general the following features of the TAPI interface:

Feature
Centrally connected 3rd party TAPI service provider (TAPI 170 telephony server)
Compatible to Microsoft TAPI 2.1 standard
Telephony features are available on every connected TAPI 170 client via TAPI 2.2 client/server architecture for Microsoft remote TSP
No additional TAPI client software required
Call signalling of incoming and outgoing calls with identification of call number
Additional information with redirected calls
Answer incoming and outgoing calls
Make call to external or internal parties
Dialing /DTMF signaling
Release existing calls (drop call)
Initiate callback call to internal or external parties
Toggling between calls
Consultative call transfer
Consultative call transfer with dialing the extension of the destination party (one step transfer)
Unattended call transfer (Blind Transfer)
Set /delete call forwarding
Set /delete DND
Start conference
Add participants to conference
Redirect incoming call
Call Pickup
Group call signalling with group pickup
Park existing calls
Unpark parked calls

Introduction

General

Feature
Hold existing calls
Unhold calls which are on hold
Set automatic callback
Support of code-dependent functions
Call data exchange between TAPI applications
ACD interface supplied
Key access to optiPoint / OpenStage keypad
Control volume of Microphone
Control/select use of Handset/Speaker/Headset
Control volume of Handset/Speaker/Headset
Display / LED access to optiPoint / OpenStage displays (with limitation to 50 active displays per system)

Supported phones / devices

Supported phones / devices and the supported features per device depend on the CSTA capabilities of OpenScape Business. Details are described within the sales information.

Support of MULAP (multi line appearance)

TAPI 170 directly supports basic MULAP groups, i.e. an OpenScape Business MULAP group can be used as a TAPI 170 user.

>	Each OpenScape Business member of a MULAP group requires a separate TAPI 120/170 user licence.
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1.2 Operation and connection mode alternatives

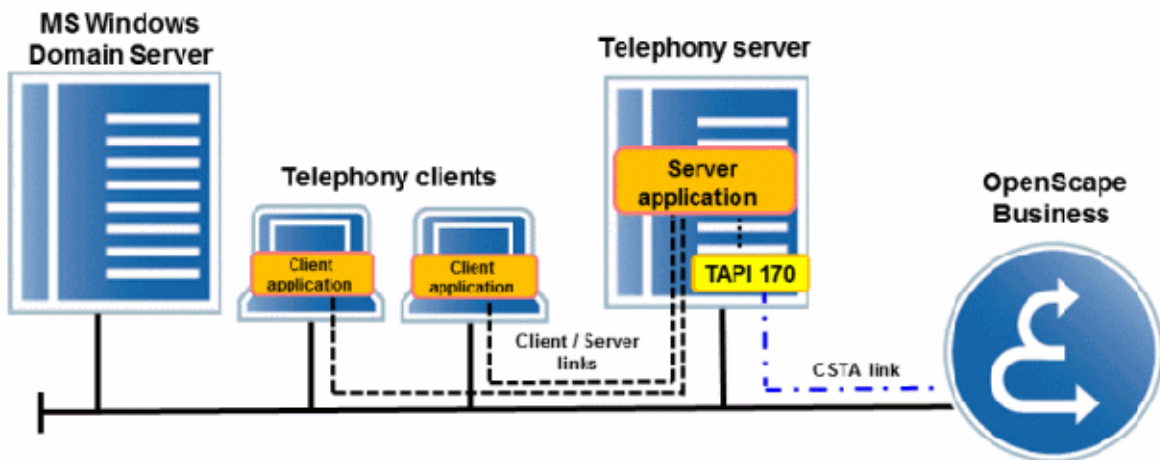
1.2.1 Operation mode alternatives

TAPI 170 operation mode alternatives

Independent from the connection mode to OpenScape Business there are different operation mode alternatives of TAPI 170 according to the TAPI applications requirements:

Telephony server based TAPI application connected to OpenScape Business via TAPI 170

- Installation of server application and TAPI 170 on the telephony server in the LAN.
- The server application provides telephony functions in the LAN for its client applications and associated users configured in TAPI 170.
- TAPI 170 and OpenScape Business are connected in the LAN via CSTA link of the OpenScape Business.

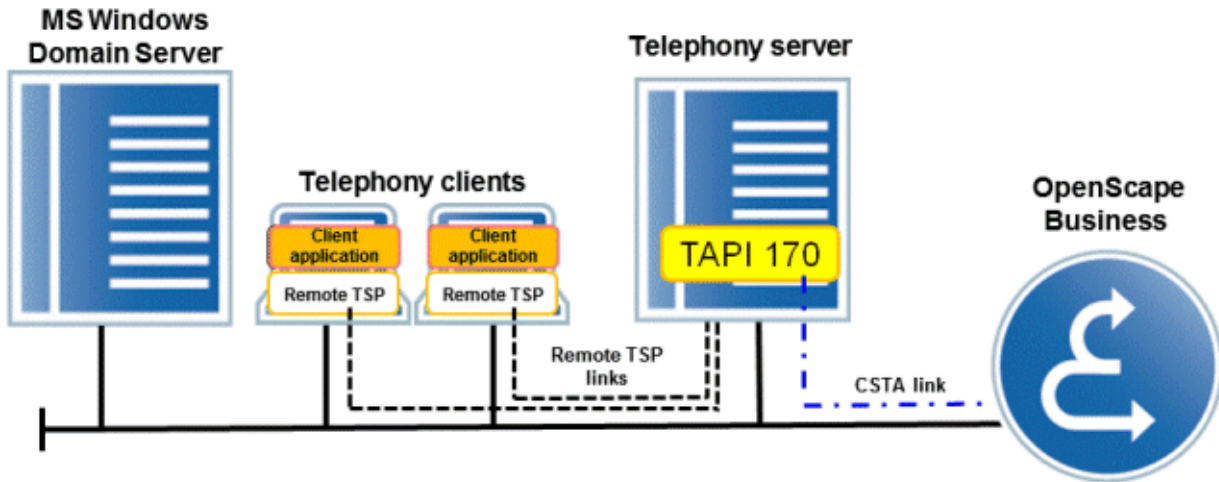


Client based TAPI applications connected to OpenScape Business via TAPI 170 with remote TSP functionality

- Installation of TAPI 170 on the telephony server in the LAN.
- On the client PCs containing the client applications the remote TSP functionality is activated. Client applications communicate via LAN with TAPI 170 / the telephony server.
- TAPI 170 and OpenScape Business are connected in the LAN via CSTA link of the OpenScape Business.

Introduction

Operation and connection mode alternatives



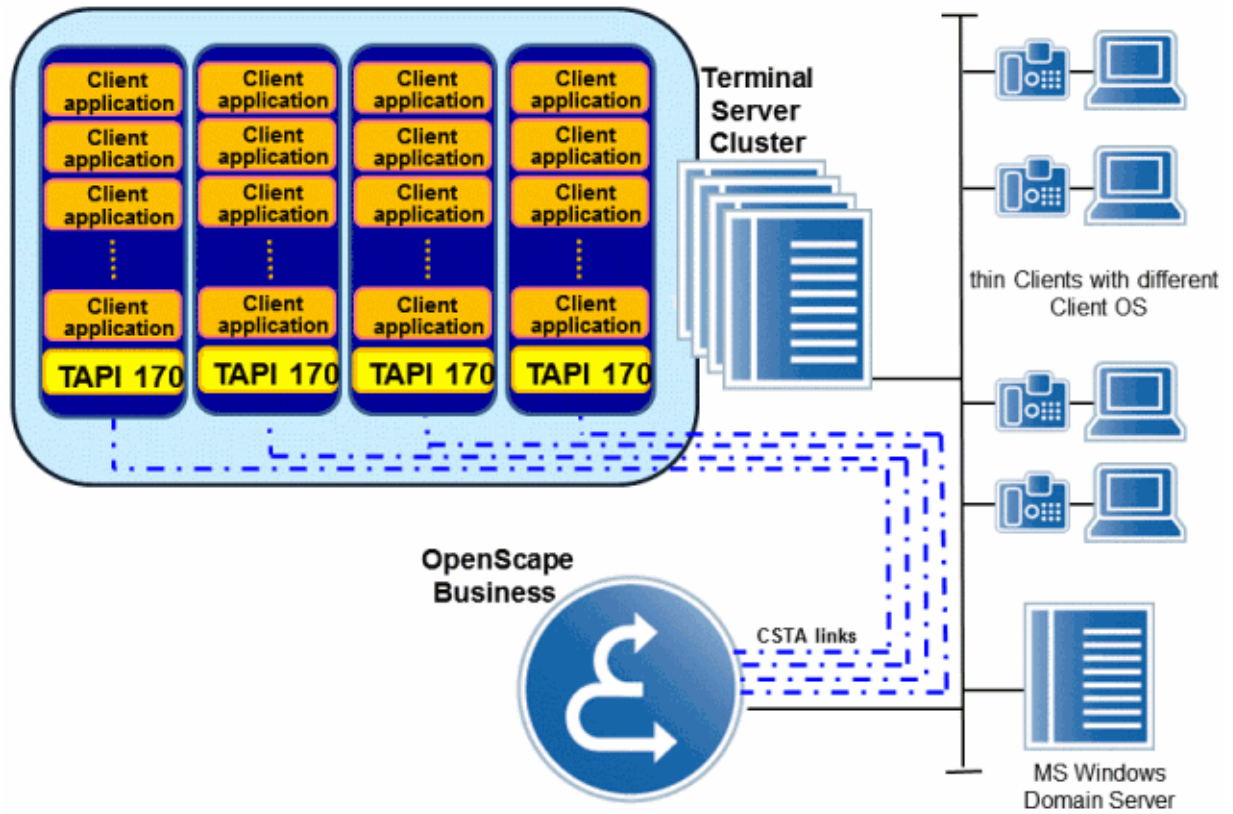
When using TAPI 170 with remote-TSP functionality several further settings on the telephony server and on the client PCs have to be considered. You find more information in the sections [Additional Configurations on the telephony server \(remote TSP\)](#) and [Configuration on a Client PC \(remote TSP\)](#).

Terminal Server based TAPI applications connected to OpenScape Business via TAPI 170

- With client based TAPI applications installed on one or more Terminal Server TAPI 170 is also installed on the Terminal Server. In case of a cluster build up of one ore more Terminal Server TAPI 170 is installed on every Terminal Server.
- Each installed TAPI 170 needs one CSTA link of OpenScape Business.



Depending on the OpenScape Business model and operating mode a maximum of three or four CSTA links are available.



Introduction

Operation and connection mode alternatives

1.2.2 Connection mode alternatives

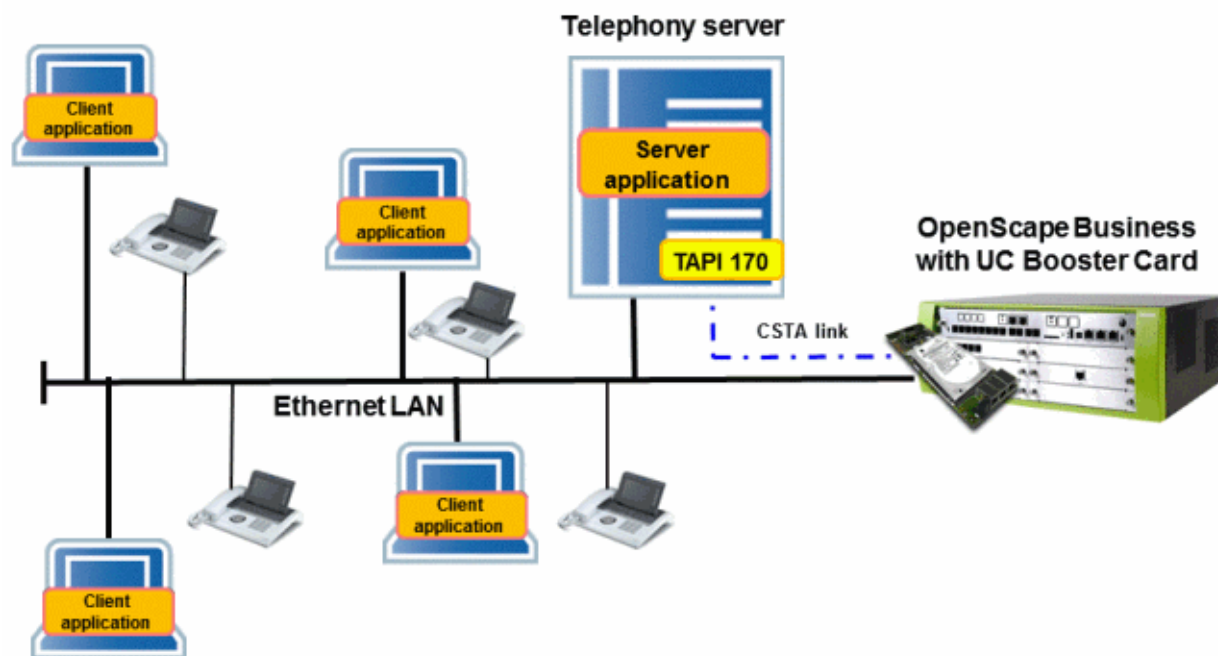
TAPI 170 connection modes to OpenScape Business

TAPI 170 can be used with a single system OpenScape Business or with networked OpenScape Business systems. TAPI 170 is connected via one OpenScape Business CSTA link.

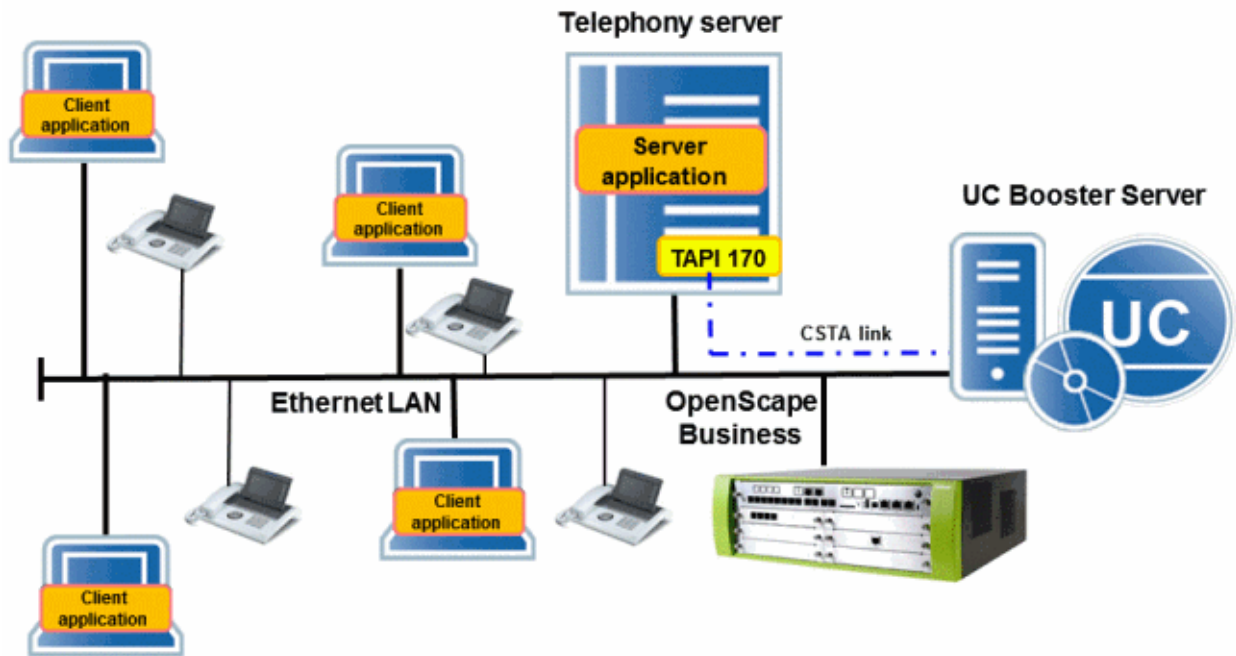
TAPI 170 connection to a single OpenScape Business system

TAPI 170 communicates in the LAN with a single OpenScape Business system via a CSTA link. These following OpenScape Business models can be connected, the TAPI 170 functionality is identical:

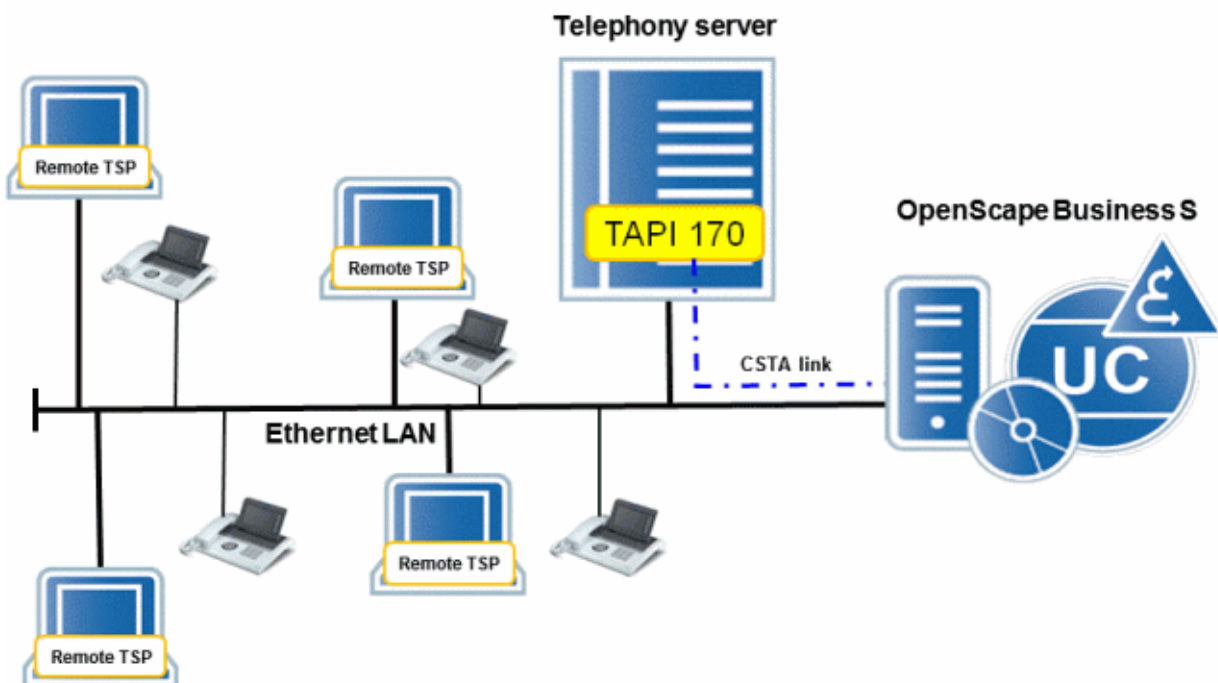
TAPI 170 connected to OpenScape Business with Booster Card



TAPI 170 connected to OpenScape Business with Booster Server



TAPI 170 connected to OpenScape Business S (here with remote TSP functionality)



Introduction

Operation and connection mode alternatives

TAPI 170 connection to networked OpenScape Business systems

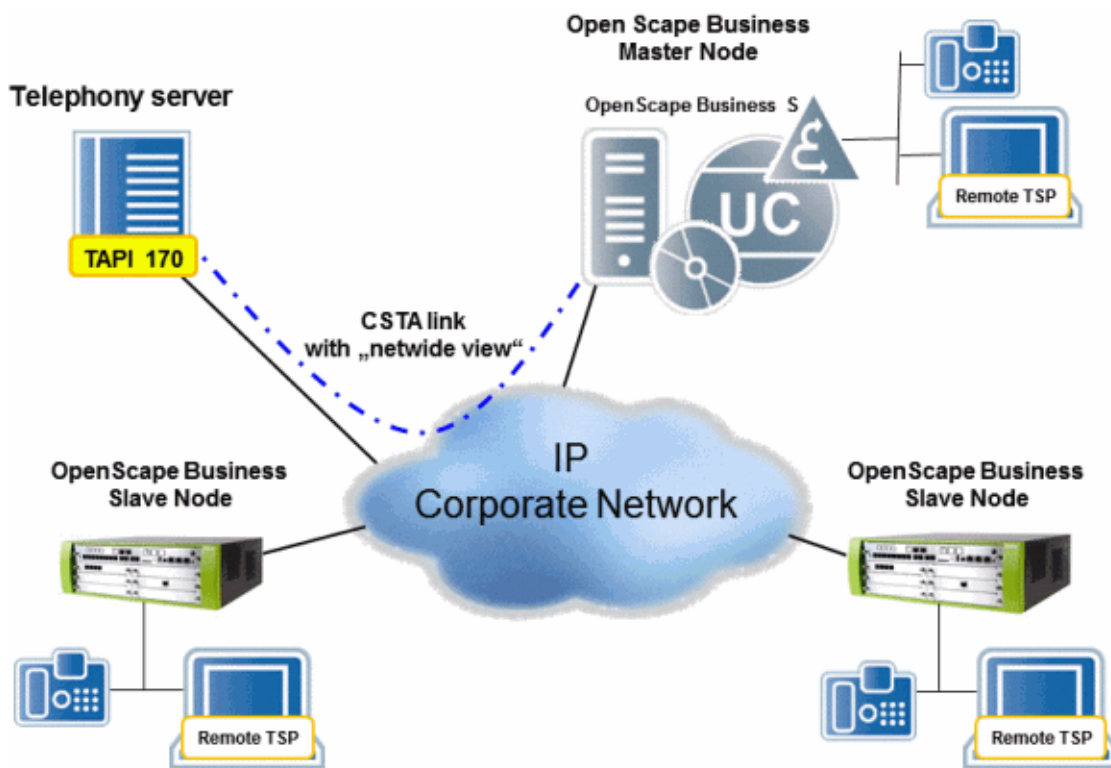
TAPI 170 communicates in the LAN with the OpenScape Business master system via CSTA link. TAPI 170 receives user information of other networked OpenScape Business systems via this CSTA link. TAPI 170 automatically receives information about an update of user parameters on the networked systems.



With operating TAPI 170 in a OpenScape Business network and connecting it to a OpenScape Business slave system, TAPI 170 only receives user information of this slave system.

You get further information about networked OpenScape Business systems in the OpenScape Business documentation.

TAPI 170 connected to networked OpenScape Business systems (here with remote TSP functionality)



1.3 Requirements

Supported OpenScape Business models

The following OpenScape Business models are supported:

OpenScape Business model	CSTA interface
X3 (X3W and X3R)	Connection to a OpenScape Business basic system via UC Booster Card or UC Booster Server
X5 (X5W and X5R)	
X8	
S	integrated

Hardware requirements for the TAPI 170 PC

The TAPI 170 PC has to be network compatible and has to comply with the hardware requirements for the installed Windows version.

Released operation systems for the TAPI 170PC

- Windows Server 2008 R2
- Windows Server 2008 R2 with Terminal Server
- Windows Server 2012
- Windows Server 2012 with Terminal Server
- Windows Small Business Server 2011
- Windows Small Business Server 2012 (Windows 2012 Essentials)



These listed operation systems are released in virtual environments with VMware only. The existing Windows Server limits for the use of VMware apply. You find more information in the VMware documentation.



For more information please check the file `readme.txt` on the TAPI 170 installation CD.



For TAPI 170 on a telephony server PC with Terminal Server / Citrix please consider information given in the section [TAPI 170 with Terminal Server / Citrix](#).

Software requirements for remote client PCs (with operation mode remote TSP)

- 32-bit operation systems:
 - Windows 7 (except Starter / Home Basic / Home Premium editions)
 - Windows 10 / 8 (except Windows 8 RT)
- 64-bit operation systems:
 - Windows 7 (except Starter / Home Basic / Home Premium editions)
 - Windows 10 / 8 (except Windows 8 RT)
 - Windows Server 2008 R2
 - Windows Server 2012

> The above listed operation systems are not released in virtual environments.

Other requirements

- Network protocol: TCP/IP must be installed and activated.
- The server and client PCs must be members of the same Windows domain.
- NETBIOS must be activated for reading the MAC ID.
- The server PC must have a fixed IP address (also when using DHCP).
- Installation of TAPI 170 must be executed by an user with administration and domain administration rights.
- For operation the telephone service on the server PC a user account with administration and domain administration rights is required.
- File and printer sharing must be activated.

Used TAPI 170 IP port (default)

The CSTA link to OpenScape Business uses the IP port 8800 by default.

Restrictions

A parallel operation of TAPI 170 and TAPI 120 on the same telephony server is not possible. This limitation refers to both, OpenScape Business TAPI and HiPath TAPI.

2 Installing TAPI 170

2.1 Starting the installation

1. Log on as an administrator and close all running applications.
2. Insert the TAPI 170 installation CD labeled **OpenScape Business TAPI 120/170 Service Provider**.
3. Select **Start - Run**, select the file `\TAPI170\setup.exe` on the installation drive and confirm with **OK**.



Please confirm the UAC (User Account Control) prompt, that appears during installation.

4. Select the language for the installation dialogs, the installation is resuming.
5. After installation preparation the welcome dialog appears. Confirm it with **Next**.



Make sure, that the service-control dialog and all TAPI applications are inactive. Corresponding to this a red marked notice appears in the installation dialog.

6. Installation starts after clicking **Install**.



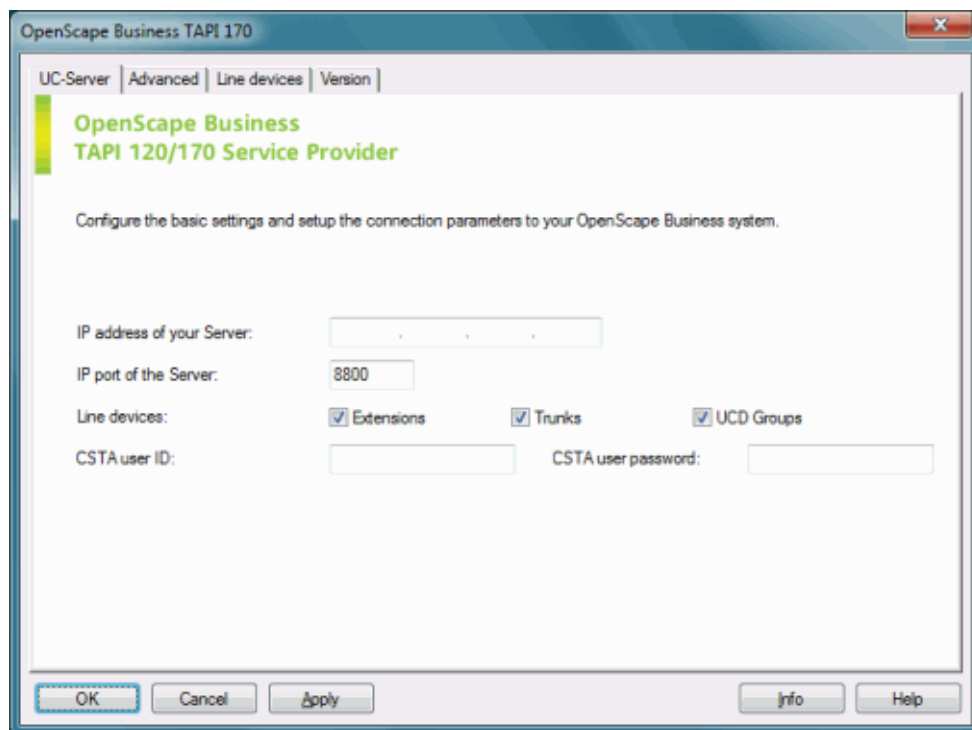
The initial installation of TAPI 170 requires a restart of the telephony server. In that case the installation dialog displays an additional red marked notice. Then you can cancel the installation. For continuing the installation you click on **Install**, the PC automatically reboots. After logging you automatically return to this point of the TAPI 170 installation procedure.

7. TAPI 170 installation starts, a progress bar is displayed.
8. To finish installation click on the **Finish** button displayed in the final dialog.
9. The TAPI 170 configuration dialog opens automatically following a successful installation. The required parameters can be entered in this dialog or configured at a later point in time.

Installing TAPI 170

Starting the installation

Display



The configuration parameters are described under [Configuring TAPI 170](#).

TAPI 170 installation is complete once you have exited the configuration dialog.

Activating ACD service

At the beginning of TAPI 170 installation a message box allows you to activate ACD support for TAPI. Confirm with **Yes** if you want to activate ACD service.



The service for ACD support of TAPI can only be activated / deactivated, if the corresponding ACD service has been installed. Once the ACD service is installed the ACD support can be activated / deactivated after the TAPI 170 installation. Therefore you activate the Windows **Control Panel** (with the option **Large icons** or small **icons activated**) then **Administrative Tools - Services** and you select the desired option for the ACD service.

2.2 Uninstall TAPI 170

Uninstall TAPI 170

- > Open the Windows Control Panel (with activated option **Small icons** or **Large icons**) and select **Programs and Features**.
- > Activate the entry **OpenScape Business TAPI 120 SP V1**, click the **Remove** button and follow the instructions.

3 Configuring Components

3.1 General

Configuration dialogs

The parameters can be configured in the configuration dialog which automatically appears during installation. You can configure the TAPI 170 settings at a later stage also.

Effectiveness of modified configuration parameters

Modified configuration parameters are saved with clicking **Apply** or **OK** in the configuration dialog. The modification will be effective once the Telephony Service on the TAPI PC has been restarted.

3.2 Configuring TAPI 170

3.2.1 Manual activation of configuration dialog

The TAPI 170 parameters can be configured during installation or at a later stage. To edit TAPI 170 configuration parameters after installation, activate the configuration dialog as follows:

Activating the configuration dialog

- > Open the Windows Control Panel and make sure, that all Control Panel icons are displayed (select **Large icons** or **Small icons**).
- > Activate **Phone and Modem**.

The **Phone and Modem Options** dialog is displayed.

- Go to the **Advanced** tab.
- Select the entry **OpenScape Business TAPI 120/170 TAPI 2.2 SP** from the list of providers displayed.
- And click **Configure**.

The TAPI 170 configuration dialog appears.

Configuration parameters

You can configure this parameters:

- [General parameters](#)
- [Advanced parameters](#)

- Linedevice parameters
- Version information

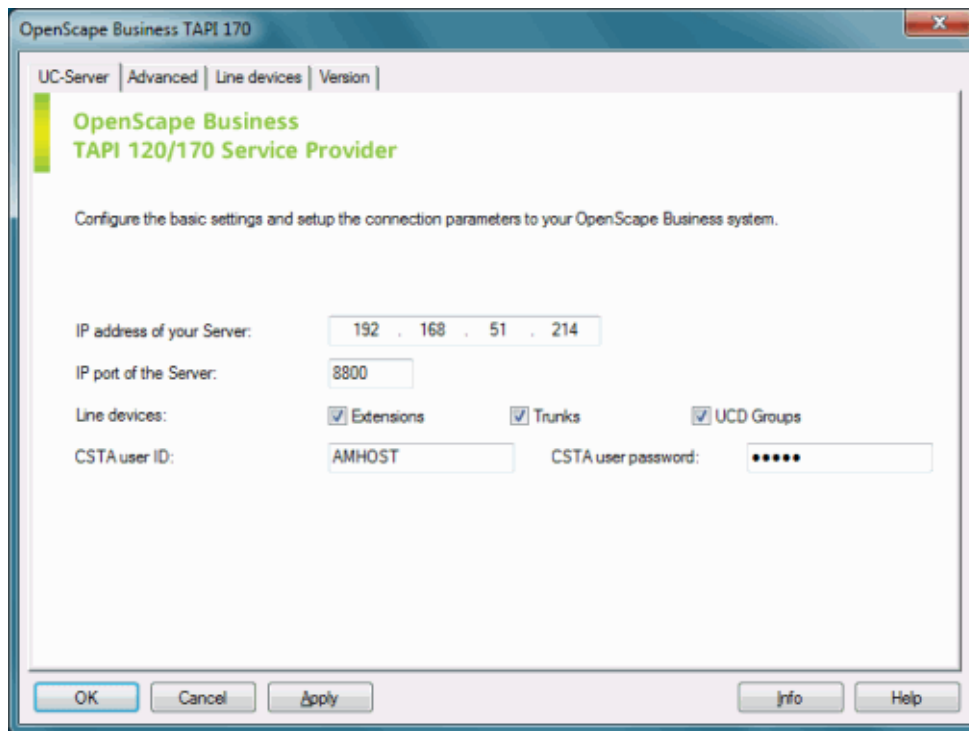
Configuring Components

Configuring TAPI 170

3.2.2 General parameters

To configure basic settings and the setup of the connection parameters to your OpenScape Business System you select the **UC-Server** tab.

Display



The **General** tab shows this parameters:

Parameter	Description
IP address of your Server	IP address of the connected OpenScape Business system determined during its installation and configuration.
IP port of the Server	IP port number of the OpenScape Business system. By default the port number is 8800.
Line devices	Select at least one type of Line devices (user type) to be monitored by TAPI 170 (controllable linedevice types). There are: <ul style="list-style-type: none">– Extensions– Trunks– UCD groups After installation all devices are activated by default. For performance reasons please only select those line device types that are essentially required by the TAPI application (see also section Linedevice parameters).

Parameter	Description
CSTA user ID	Enter the CSTA user ID configured on the system. If the CSTA user ID is updated on the system, you have change it here accordingly.
CSTA user password	Enter the CSTA userpassword configured on the system. If the CSTA user password is updated on the system, you have change it here accordingly. An input dialog opens in which you can enter and confirm the new password, then you return to the configuration dialog.



If this CSTA3 user password differs from the password in the systems WBM, the CSTA logon on the system is impossible!

Saving parameters

- > Click **Apply** to save entries without closing the dialog. e.g. to configure parameters in other tabs.
- > Click **OK** to save changes and to exit the configuration dialog.
- > A confirmation message appears in both cases, click **Yes** to save the parameter values. Your changes take effect after the Telephony Service on the TAPI PC has been restarted.

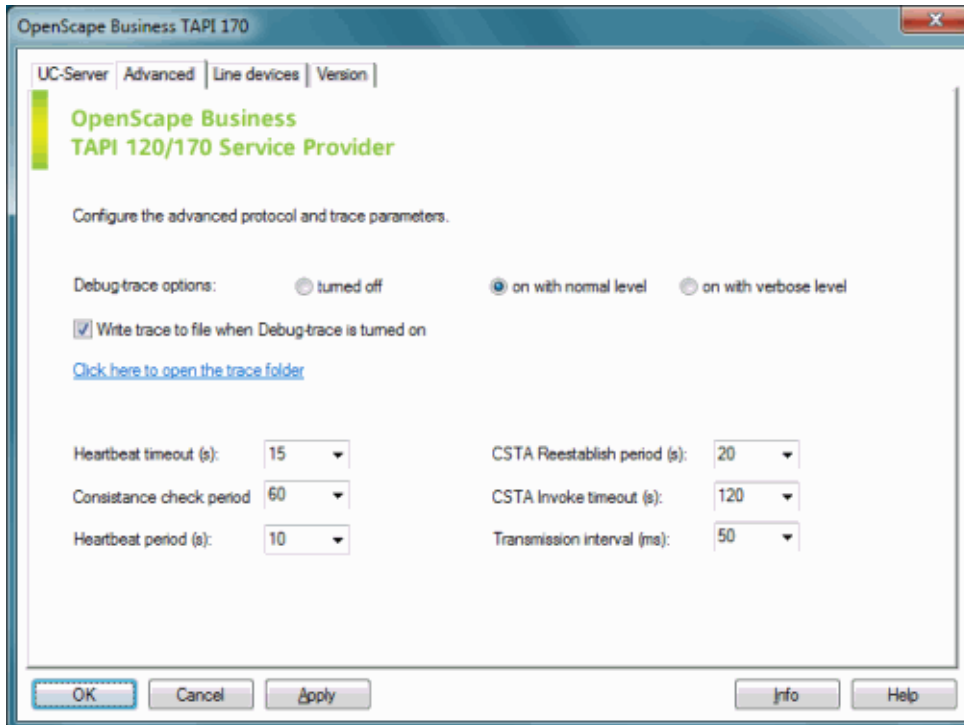
Configuring Components

Configuring TAPI 170

3.2.3 Advanced parameters

To configure advanced connection parameters to your OpenScape Business system you select the **Advanced** tab.

Display



The parameters in the **Advanced** tab represent this:

Parameter	Description
Debug trace options	<p>To evaluate the TAPI 170 trace with default trace tools you have these options:</p> <ul style="list-style-type: none">– turned off Default trace is inactive– on with normal level Default trace with normal level is activated, trace can be analyzed with default trace tools.– on with verbose level Verbosed trace is activated, trace can be analyzed with default trace tools.

Parameter	Description
Write trace to file when Debugtrace is turned on	<p>If the debug trace is turned on with normal level or turned on with verbose level the TAPI 170 trace can be saved in files. Therefore you activate the Write trace to file when Debugtrace is turned on option.</p> <p>TAPI 170 trace messages are saved in these files:</p> <ul style="list-style-type: none"> – OSB_T1x0yyyymmddhhmmss.trc (TSP tracing) – OSB_T_UIyyyymmddhhmmss.trc (UI tracing) <p>where <yyyymmdd> is the date and <hhmmss> time of trace file creation.</p> <p>The trace files are saved in a default folder depending on the Windows version. With click on show directory a Windows explorer windows with the trace file folder active opens.</p>



Activate the **Write trace to file when Debugtrace is turned on** on request only. Tracing in files affects the TAPI 170 performance!

Parameter	Description
Heartbeat timeout (s)	Additional time in seconds until automatic re-establishment in the case of CSTA interface failure.
CSTA reestablish period (s)	Waiting time in seconds until a connection is re-established following connection failure.
Consistency check(s)	Time interval in seconds for cyclical plausibility checks.
CSTA invoke timeout (s)	Timeout in seconds after CSTA service requests.
Heartbeat period (s)	Time interval (seconds) for checking CSTA interface activity.
Transmission interval (ms)	Waiting time between two messages.

Saving parameters

- > Click **Apply** to save entries without closing the dialog. e.g. to configure parameters in other tabs.
- > Click **OK** to save changes and to exit the configuration dialog.
- > A confirmation message appears in both cases, click **Yes** to save the parameter values. Your changes take effect after the Telephony Service on the TAPI PC has been restarted.

Configuring Components

Configuring TAPI 170

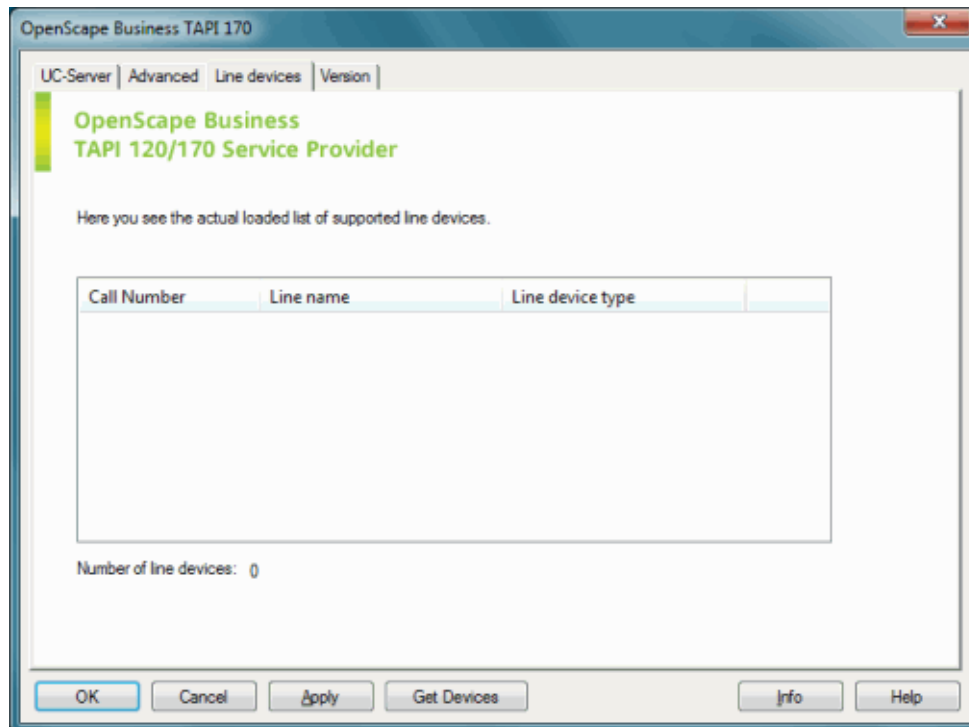
3.2.4 Linedevice parameters

The Linedevices tab

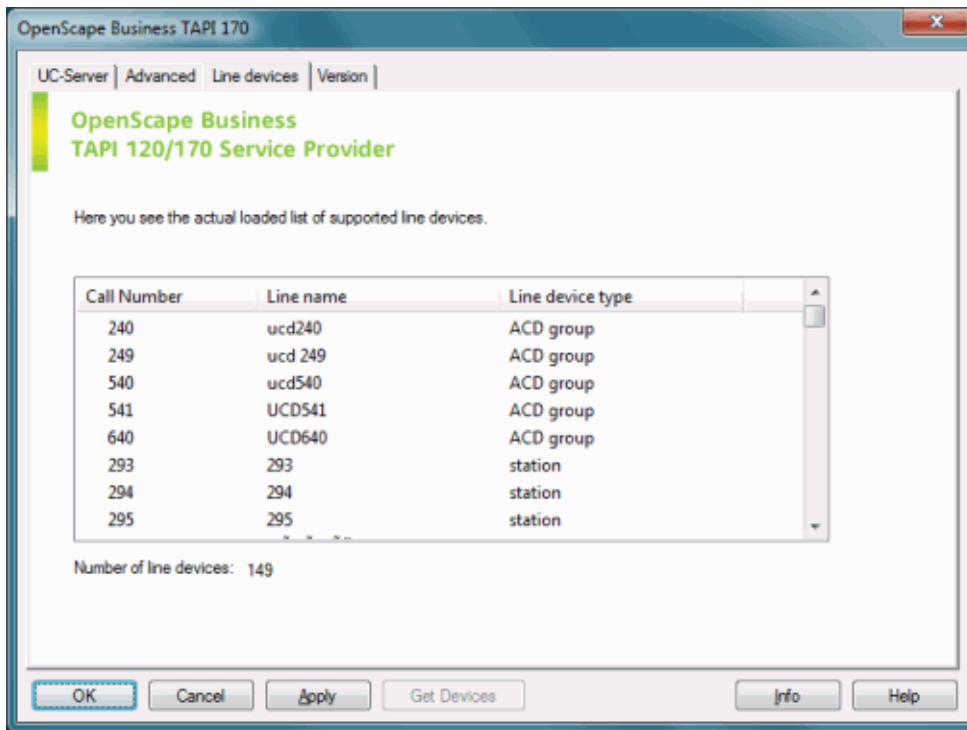
This tab shows all users (linedevices) of the connected system whose linedevice types correspond to the selected linedevice types for TAPI 170 monitoring (see section [General parameters](#)).

After initial installation of TAPI 170 no user is displayed. After start of a TAPI application or with click on **Get Devices** (this button is selectable with an empty list only) the referring linedevices are loaded to this list.

Display (after initial installation, empty list)



Display (with entries)



The list shows this parameters:

Column	Description
Call Number	Call number of the user, transmitted from the system
Line name	Line name of the user, transmitted from the system
Line device type	User line device type. This list shows only users with line device types that are selected for a monitoring by the TAPI application (see also section General parameters).

Saving parameters

- > Click **Apply** to save entries without closing the dialog. e.g. to configure parameters in other tabs.
- > Click **OK** to save changes and to exit the configuration dialog.
- > A confirmation message appears in both cases, click **Yes** to save the parameter values. Your changes take effect after the Telephony Service on the TAPI PC has been restarted.

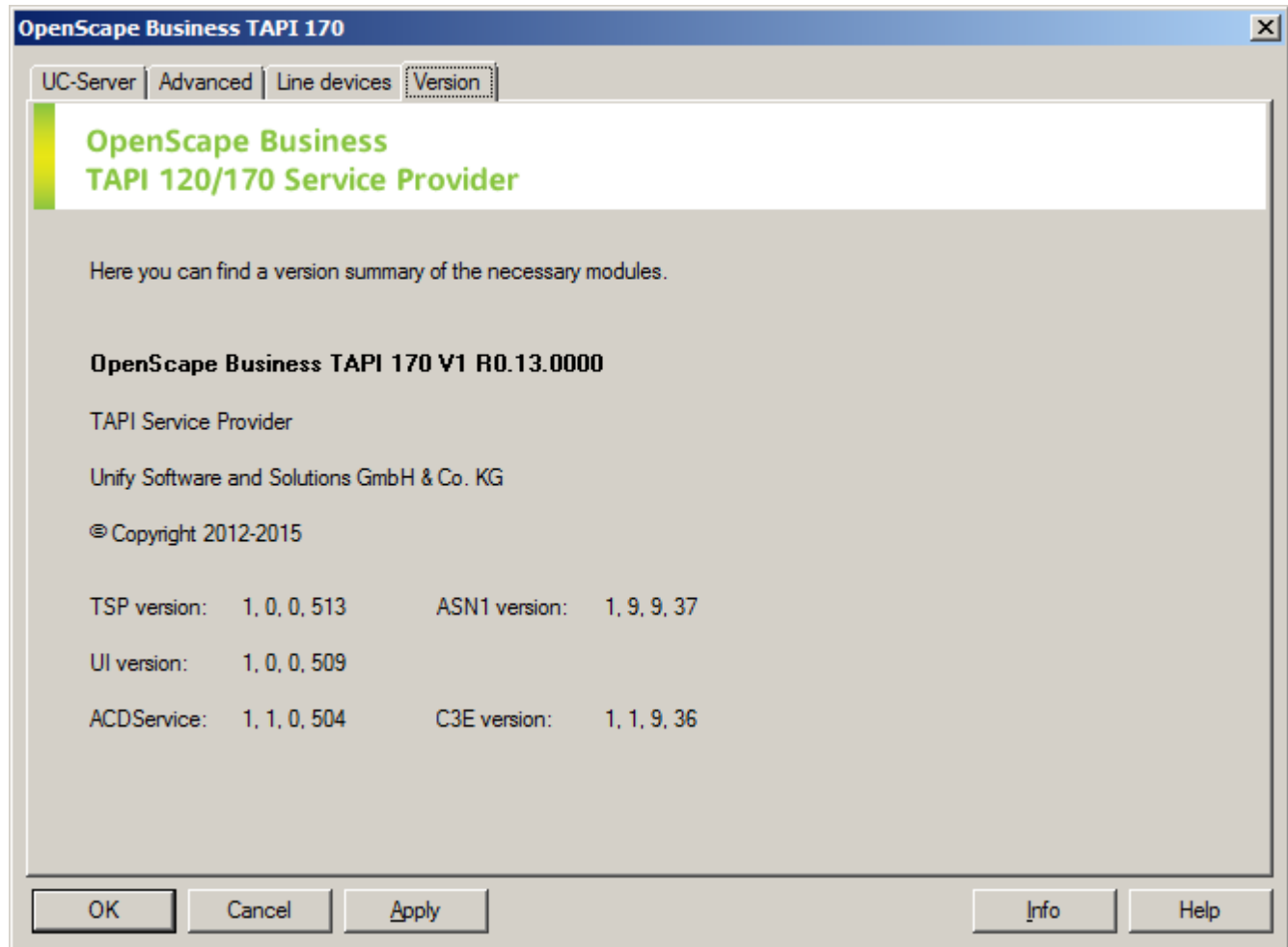
Configuring Components

Configuring TAPI 170

3.2.5 Version information

The version numbers of the components that are installed are listed in the **Version** tab.

Display



4 Additional Configurations on the telephony server (remote TSP)

4.1 General

User or client call numbers are made available for installing TAPI 170 during TAPI linedevice configuration (see [Linedevice parameters](#)). Using TAPI 170 with remote TSP these linedevices must be assigned with an additional configuration to the relevant users in the network. This ensures, that network subscribers can only use the linedevices reserved specifically for them.

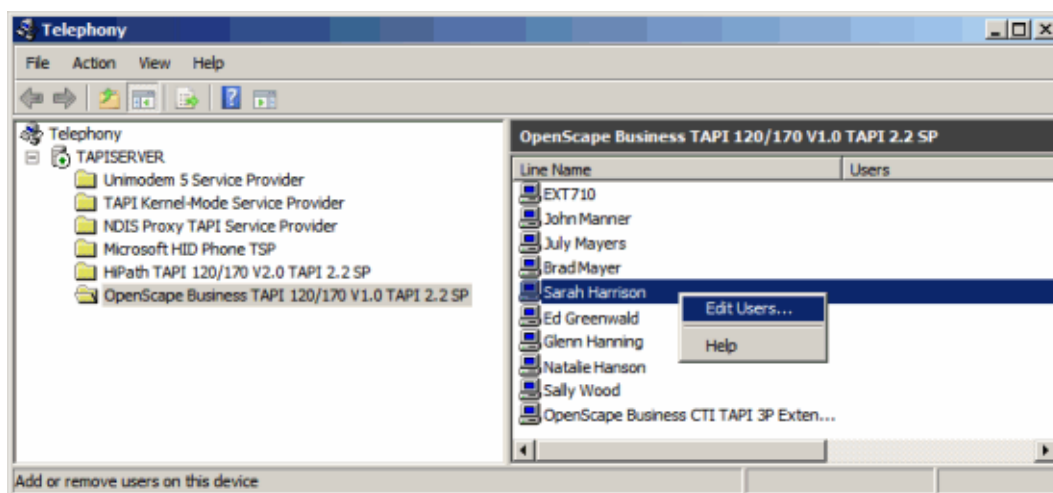


The following description and figures are valid for Windows 2008 R2. For other Windows operation systems the description is valid accordingly.

4.2 Linedevice assignment to client PCs on the telephony server

1. Open the Telephony dialog by activating **Start - Run**, entering `TAPIMGMT.MSC` and confirming.
2. The **Telephony** dialog is displayed. Under **Telephony/[Server-Name]** activate the **OpenScape Business TAPI 120/170 TAPI 2.2 SP**. The configured linedevices and assigned user names are listed under **Line Name** (see [Linedevice parameters](#)).
3. Right-click the relevant user entry here and select **Edit Users...** in the context menu displayed.

Display

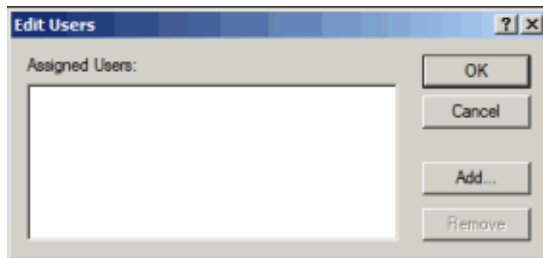


4. Click the **Add...** button in the **Edit Users** dialog.

Additional Configurations on the telephony server (remote TSP)

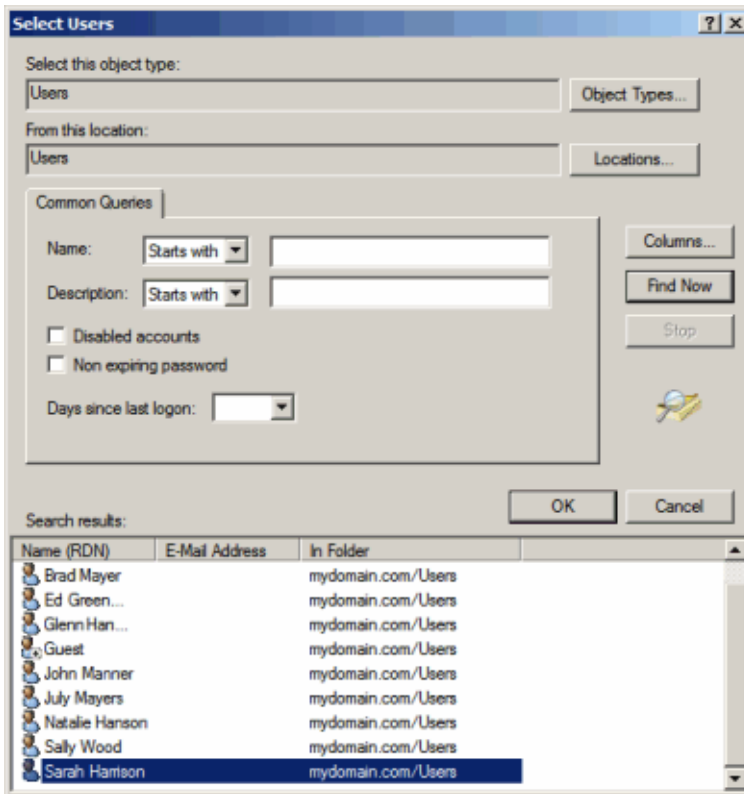
Linedevice assignment to client PCs on the telephony server

Display



5. The dialog **Select Users** lists the relevant users configured in the domain. Select the user to be assigned by double-clicking and confirm with **OK**.

Display

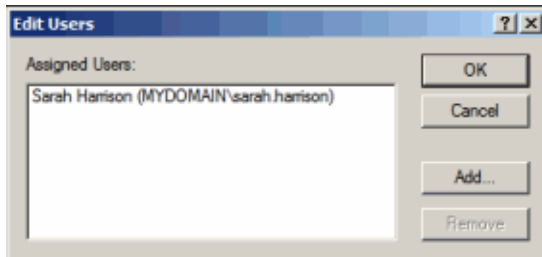


6. The **Select Users** dialog shows the selected user. Again you confirm with **OK**.
7. The **Edit Users** dialog re-appears. The selected user is displayed here. Click **OK** to confirm.

Additional Configurations on the telephony server (remote TSP)

Linedevice assignment to client PCs on the telephony server

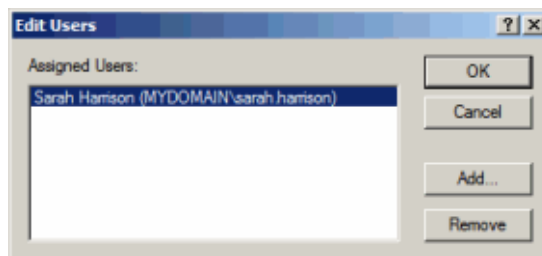
Display



Cancel assignment of linedevices to client PCs

If the linedevice has already been assigned to a user in the network, the **Edit Users** dialog is displayed. Click the **Remove** button to cancel this assignment, then confirm with **OK**.

Display



Additional Configurations on the telephony server (remote TSP)

Configuring the telephone service on the telephony server

4.3 Configuring the telephone service on the telephony server

General

A user ID with administration and domain administration rights must be assigned for the telephone service for operating the telephone server.

Telephony server / service on a Windows Server 2008 / 2008 R2 PC

To get the telephony server/service to work with a domain-admin/admin account on a Windows Server 2008 / 2008 R2, it is required to assign two additional user rights to the corresponding user account manually:

- On the corresponding domain controller:
 - Run `gpme.msc`
 - Select tab **All**
 - Select **Default Domain Controllers Policy**, click **OK**
 - Open tree: **Computer Configuration/Policies/Windows Settings/Security Settings/Local Policies/User Rights Assignment**
 - Double click policy **Replace a process level token** and add corresponding user
 - Double click policy **Generate security audits** and add corresponding user
- On the telephony server:
 - Run `secpol.msc`
 - Open tree: **Security Settings/Local Policies/User Rights Assignment**
 - Double click policy **Replace a process level token** and add corresponding user
 - Double click policy **Generate security audits** and add corresponding user

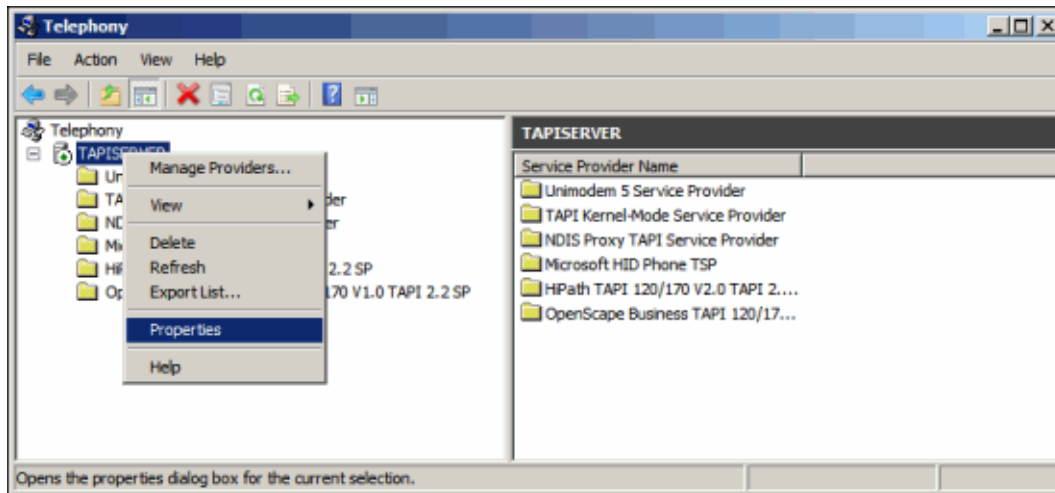
Proceed as follows to configure the telephone service:

1. Open the telephone dialog by selecting **Start - Run**, entering `TAPIMGMT.MSC` in the entry field and confirming.
2. The **Telephony** dialog is displayed. Right-click the Computer Name entry in the left part of the dialog. Activate the **Properties** entry in the context menu displayed.

Additional Configurations on the telephony server (remote TSP)

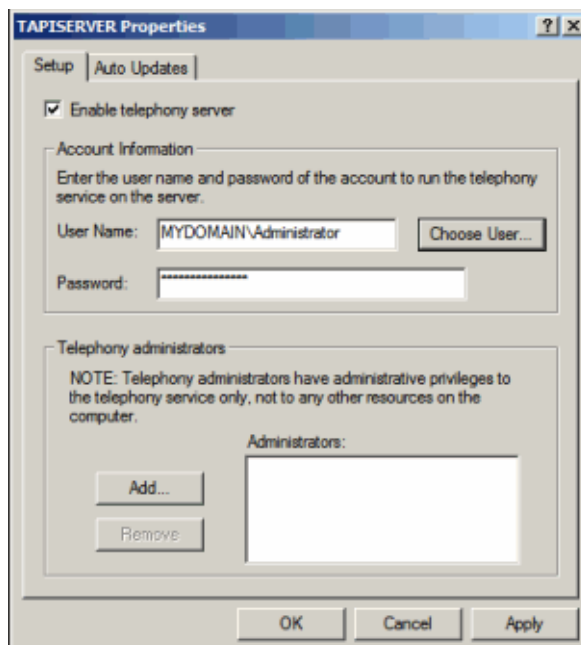
Configuring the telephone service on the telephony server

Display



3. Select the **Enable telephony server** option in the Properties dialog and enter the user ID for the telephone service in the **User Name** field.
You can also click the **Choose User...** button and select the relevant user.
4. Enter the assigned password in the **Password** field.

Display

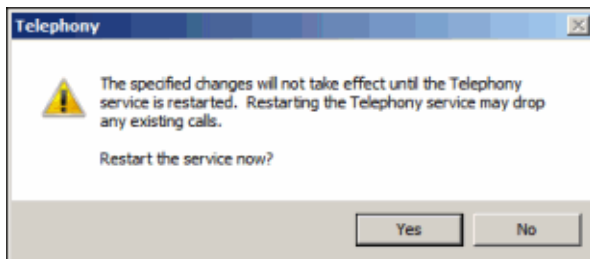


5. Click **OK** to confirm. A security prompt is displayed for restarting the telephone service.

Additional Configurations on the telephony server (remote TSP)

Configuring the telephone service on the telephony server

Display



6. Click **Yes** to confirm this message. The telephone service is then restarted.

5 Configuration on a Client PC (remote TSP)

A number of configuration steps must be performed on the relevant client PCs after installation / configuration of TAPI 170 using remote TSP functionality.



The following description and figures are valid for Windows 7. For other Windows operation systems the description is valid accordingly.

5.1 Configuring the TSP on a client PC

General

The following steps must be performed for installation and configuration on a client PC:

1. [Entering the server name on the client PC.](#)
2. [Configuring Network Neighborhood properties.](#)

5.1.1 Entering the server name on the client PC

General

The telephony server name must be entered on every client PC to ensure proper communication between the client and server PC. Proceed as follows in the case of a client PC running Windows:

1. Log on to Windows as a user with administration rights.
2. Click **Run** in the Start menu.
3. Enter the following command: `TCMSETUP /C remoteserver`
where
 - *remoteserver*
is the name (not the IP address) of the telephony server PC.

You will be notified with a message box about the commands result (e.g. if the TAPI client is properly installed).

Configuration on a Client PC (remote TSP)

Configuring the TSP on a client PC

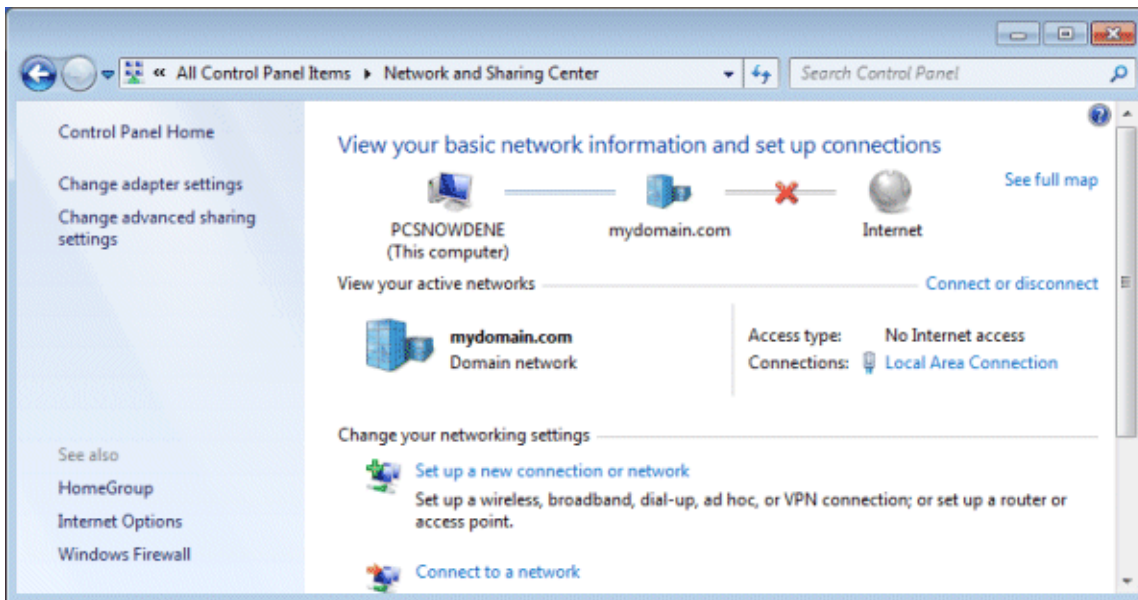
5.1.2 Configuring Network Neighborhood properties

General

The following settings must be checked/configured on every client PC running Windows:

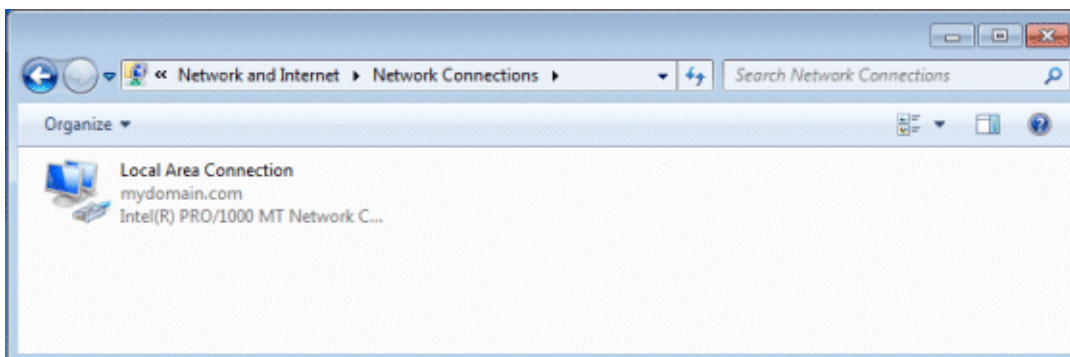
1. Open the **Control Panel** and select **Large icons** or **Small icons**. Select the **Network and Sharing Center** icon. A dialog with all basic network information opens.

Display



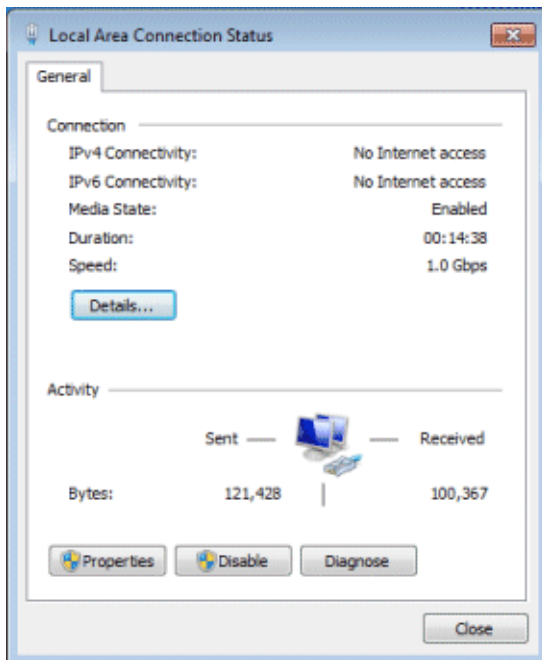
2. Open the **Change adapter settings** link, the **Network Connections** dialog appears.

Display



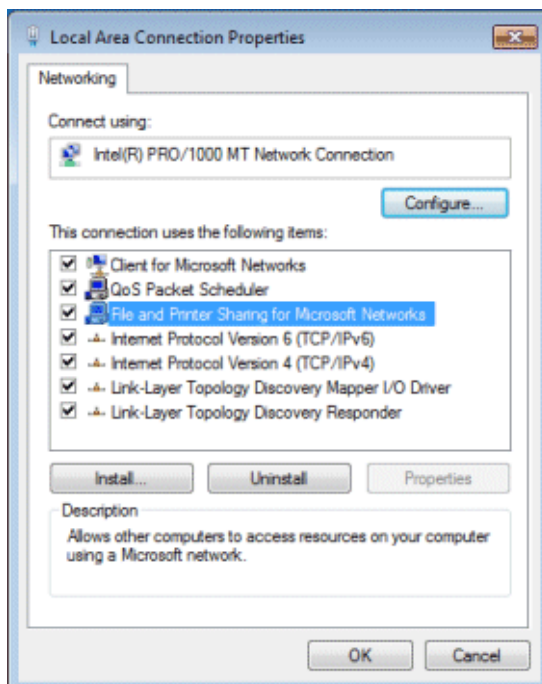
3. Double-click **Local Area Connection** for file and print sharing settings, the dialog **Local Area Connection Status** opens.

Display



4. Click the **Properties** button.

Display



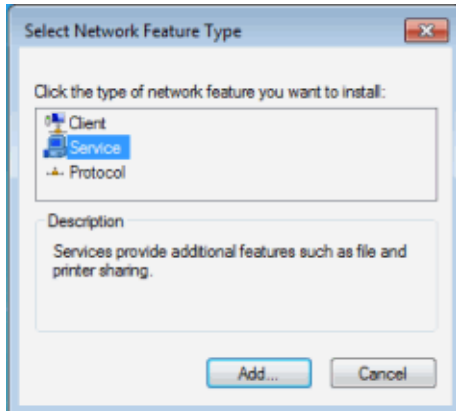
Configuration on a Client PC (remote TSP)

Configuring the TSP on a client PC

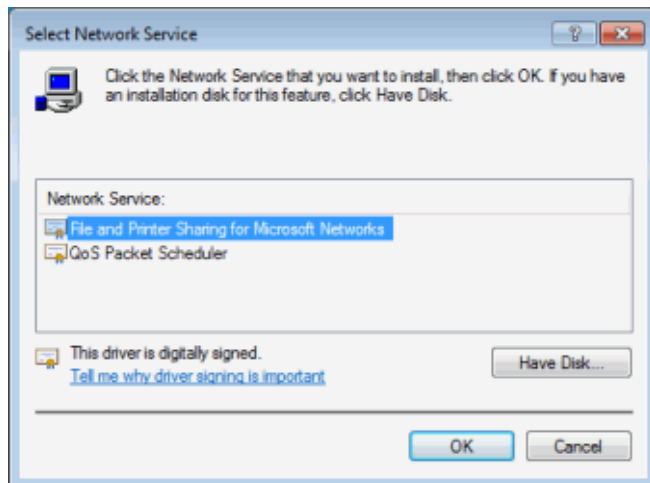
5. If the **File and Printer Sharing for Microsoft Networks** entry (as shown above) is not available, proceed as follows, otherwise proceed with step 6.

Installing the file and printer sharing service:

- > Click the **Install...** button if the service for file and printer sharing is not already installed.



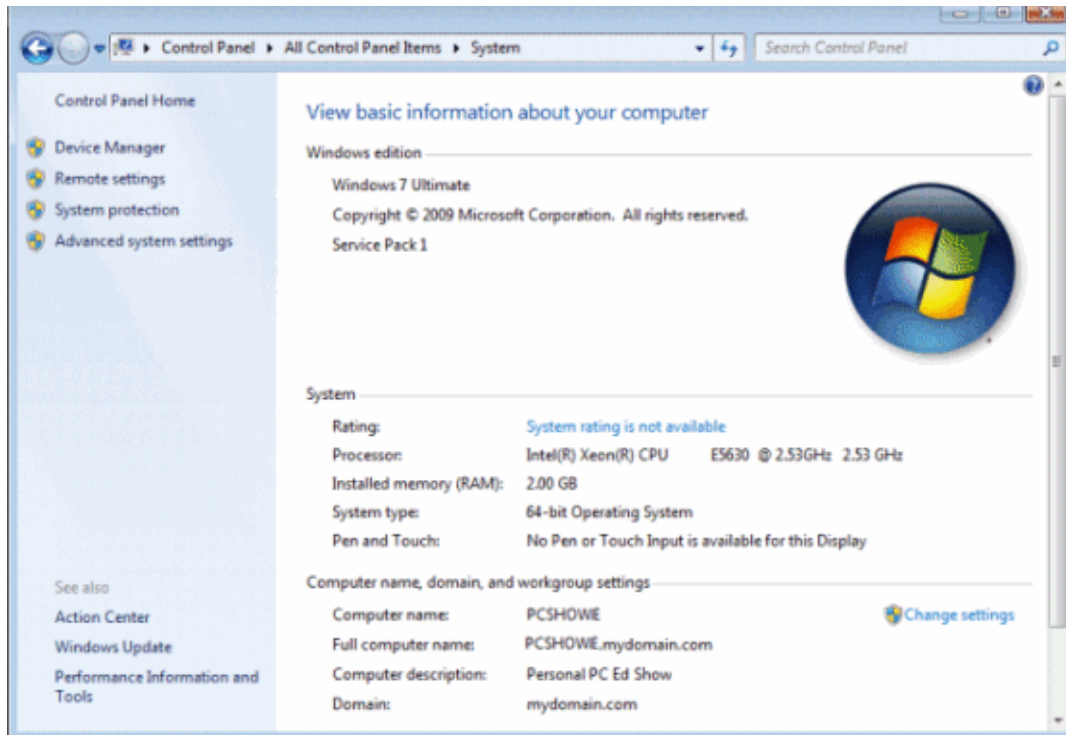
- > Click the **Service** entry and then click the **Add...** button. The **Select Network Service** dialog is displayed.



- > Click the **File and Printer Sharing for Microsoft Networks** entry followed by **OK**. The dialog displayed in step 4 re-appears. The new entry is now listed.
6. Check if the service is activated. The service is activated if the checkmark is visible in the check box beside the entry. If the checkmark is not visible, the service is not activated. Simply click the empty checkbox to activate it.
 7. Then click the **OK** button. The dialog **Local Area Connection Status** shown in step 3 is displayed. Activate **Close** here. You return to the **Network Connections** dialog shown in step 2 which you close as well to return to the **Control Panel**.

8. To configure the login domain you select **System**, the dialog **View basic information about your computer** appears.

Display

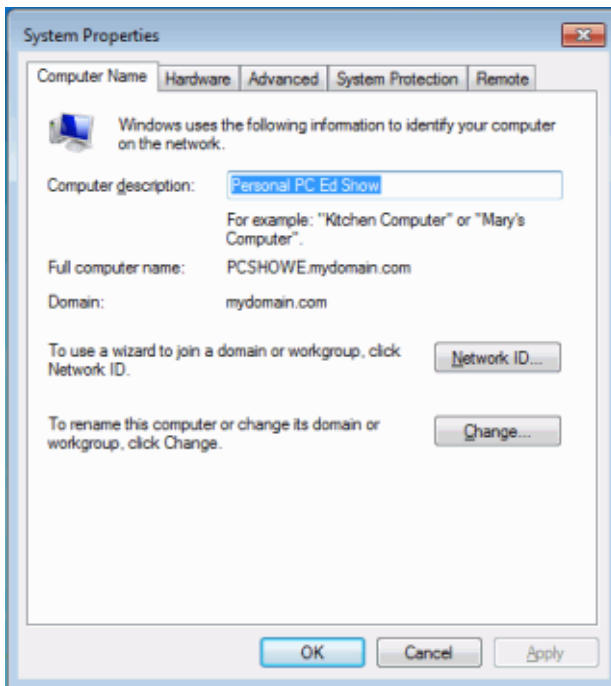


9. In the section **Computer name, domain and workgroup settings** (lower section) you activate the **Change settings** link, the **System Properties** dialog appears.

Configuration on a Client PC (remote TSP)

Configuring the TSP on a client PC

Display



10. The login domain for the client PC is displayed here under **Domain**. If the login domain is not the telephony server domain, it can be changed once the **Change...** button has been clicked.
11. Click **OK** to confirm. The dialog displayed in step 8 re-appears. Also close this dialog.

Configuration on a Client PC (remote TSP)

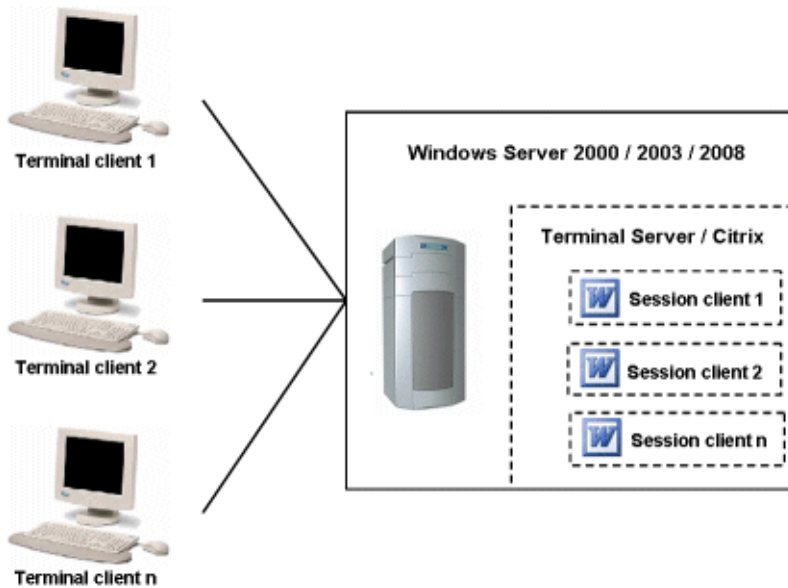
Configuring the TSP on a client PC

6 TAPI 170 with Terminal Server / Citrix

In this section you find information relevant for with Terminal Server / Citrix:

- [Terminal Server / Citrix overview](#)
- [TAPI 170 on Terminal Server / Citrix: Release and restrictions](#)
- [Conditions for Domain Controller and Terminal Server](#)
- [Special needs for TAPI 170 on Terminal Server / Citrix with multiple cluster server](#)

6.1 Terminal Server / Citrix overview



A Terminal Server provides access to its installed applications for terminal clients. Those applications run on Terminal Server. The input/output is exchanged between Terminal Server and terminal clients. For example Word can be installed on Terminal Server, will run there and can be used from terminal clients.

See the following links for more details.

- <http://technet.microsoft.com/en-us/windowsserver/terminal-services/default.aspx>
- <http://www.citrix.com/English/ps2/products/product.asp?contentID=1297817>
(Citrix has developed this technology for Microsoft and distribute a feature added version under the product name Citrix XenApp, formerly Citrix Presentation Server, formerly "MetaFrame").

TAPI 170 with Terminal Server / Citrix

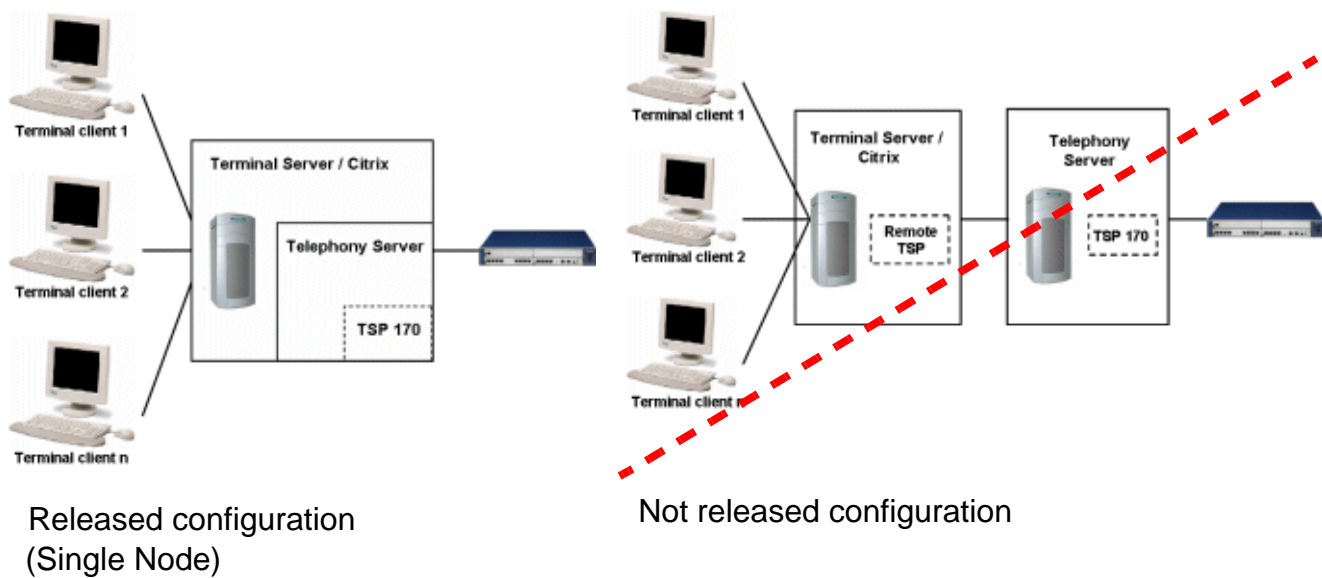
TAPI 170 on Terminal Server / Citrix: Release and restrictions

6.2 TAPI 170 on Terminal Server / Citrix: Release and restrictions

To ensure that users get access only to their own lines, TAPI 170 has to be installed on the same machine as the Terminal Server / Citrix. The server has to be configured as telephony server too (see section [Additional Configurations on the telephony server \(remote TSP\)](#)).

Due to its software architecture the remote TSP from Microsoft cannot be used in a Terminal Server / Citrix environment, since the remote TSP will always work in the context of the user, who first uses the remote TSP. This problem exists on all operating system and Terminal Server / Citrix variants.

Released configuration / not released configuration



6.3 Conditions for Domain Controller and Terminal Server

The operation of a telephony server requires a Windows Domain including a Domain Controller due to Microsoft's TAPI architecture. In the easiest case the Domain Controller could be the PC as the telephony server. On the PC with the telephony server however there has to be Terminal Server / Citrix installed too.

But Microsoft advises against the installation of a Terminal Server on a Domain Controller due to performance and security issues. Therefore it is to consider that the Domain Controller is installed on a different PC than the combination of telephony server and Terminal Server / Citrix.



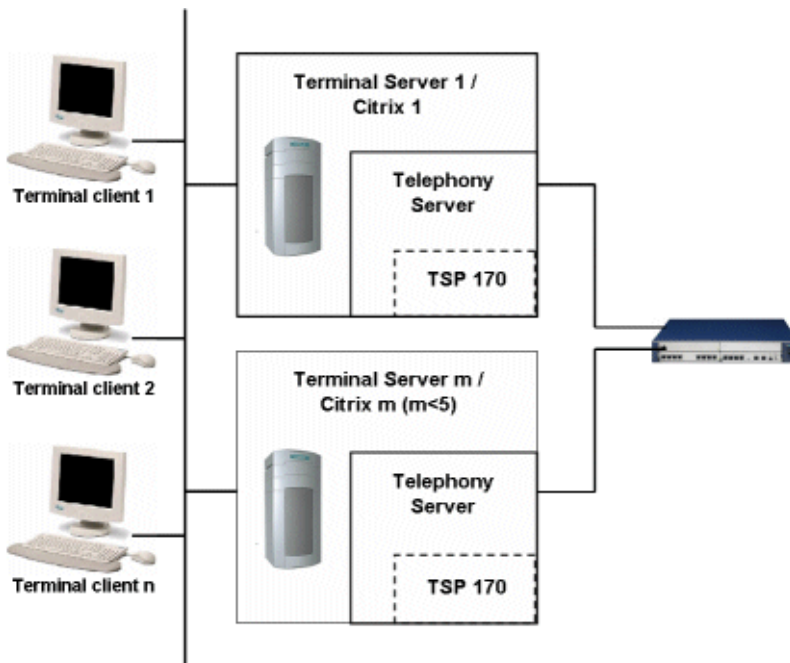
Only for pure test operation - however not in productive environment - the Domain Controller can be installed on the same PC along with telephony server and Terminal Server.

TAPI 170 with Terminal Server / Citrix

Special needs for TAPI 170 on Terminal Server / Citrix with multiple cluster server

6.4 Special needs for TAPI 170 on Terminal Server / Citrix with multiple cluster server

Overview



If TAPI is used in a Terminal Server / Citrix Farm build by more than one Cluster Server, please note the following statements:

- Any server that needs TAPI has to be configured as telephony server and has its own TAPI 170.
- Depending on the operation mode a maximum of three or four TAPI 170 cluster can be connected directly to a OpenScape Business platform.
- Every additional TAPI 170 cluster needs a free CSTA link on the OpenScape Business. You find more information in the OpenScape Business documentation.

List of abbreviations

This list contains the abbreviations used in this manual.

Abbreviation	Definition
CSTA	Computer Supported Telephony Application
CTI	Computer Telephony Integration
MULAP	Multi Line Appearance
OS	Operating System
SP	Service Provider
TAPI	Telephony Application Programming Interface
TSP	TAPI Service Provider
UAC	User Account Control
WBM	Web Based Management

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