

estos UCServer Tools for Active Directory

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1 UCServer Tools for Active Directory®

Users, groups, and computers can be not only be managed and configured by estos UCServer administrator, but also by a so-called Active Directory® Snap-In. Thus, features and settings of users/groups or computers can be configured directly in the ""Active Directory® Users and Computers"" of Windows®.

A prerequisite for this is that the user administration in UCServer Administrator uses the Active Directory® (instead of the internal user management). In addition the snap-in must be installed from the UCServer Tools for Active Directory® package. This must not be necessarily on the domain controller (DC) or the server where the Active Directory® is installed and provided. With "Remote Server Administration Tools" from Microsoft® servers can also be managed by workstations. In this case also the snap-in must be installed on the workstation.

The setup estos UCServer Tools for Active Directory® installs the following components:

- UCServer Tools for Active Directory® - Snap-In
This application configures the Active Directory® to be able to use the UCServer Snap-In. The UCServer Snap-In is an MMC expansion, which enables management to manage UC settings on the Active Directory® Users and Computers console.
- UCServer Tools for Active Directory® - Scheme Setup
This application extends the Active Directory® schema for storing the UCServer configuration.

Schema extension - yes or no?

Active Directory® is a database in which settings can be stored. This database has certain fields defined by Microsoft®. A schema extension is an extension of the field definitions. You can use the UCServer with Active Directory® either with or without a schema extension. You must, however, decide whether you wish to extend the schema or not before installation. Here are a few points to help you with the decision:

Extend schema	Do not extend schema
<p>The schema extension is recommended by Microsoft®. Applications which are integrated into Active Directory® should store their settings in fields which are specially reserved for this application with a schema extension.</p>	<p>The schema extension is not compulsory. The settings are then stored in an existing field.</p>
<p>Compatibility with other applications is ensured with a schema extension. If the schema is not extended it is possible that another software producer may use the same reserved field for their settings.</p>	<p>If you do not use any applications which are integrated into Active Directory® you will have no problems without a schema extension. Check where other applications you use store their settings.</p>

Instructions

- UCServer and the Active Directory® Snap-In can use the Active Directory® with or without a schema extension.
- Decide on a schema extension, so you should make them before you configure the users in UCServer.
- The UCServer Snap-In for Active Directory® can also be used with or without schema extensions.
- Settings are read from Active Directory®, as well as written. Make sure that the appropriate rights for this are available.

1.1 Requirements

Requirements for the installation:

- Operating system
 - Windows® 7 SP1
 - Windows® 8.1
 - Windows® 10
 - Windows Server® 2008 R2 SP1
 - Windows Server® 2012
 - Windows Server® 2012 R2
 - Windows Server® 2016
- Windows® components
For using the MMC SnapIn you need the Active Directory® Users and Computers console.

1.2 Installation

Run estos UCServer Tools for Active Directory® MSI

After the installation the following programs are available in the start menu:

UCServer Tools for Active Directory® - Snap-In	Program to register the MMC snapin in Active Directory®
UCServer Tools for Active Directory® - Scheme Setup	Program to extend the Active Directory® Schema

UCServer Tools for Active Directory® - Snap-In

To use the MMC SnapIn once the SnapIn has to be configured in Active Directory®. See also SnapIn Setup.

UCServer Tools for Active Directory® - Scheme Setup




The schematic setup adds new attributes in the Active Directory® schema. These are used for the user management and can not be deleted afterwards. If you don't want to install the schema extension, so a reserved field will be used for the user management. For more information, see Active Directory® schema reference

See also Scheme Setup.

If the installation was successful the snap-in is now available.

You will now find an additional tab entitled "UCServer" next to each computer, user or group.

Instructions:

	The schema extension is automatically distributed to all correspondingly setup Active Directory® computers and must therefore only be installed once.
	The user who runs the EXE file to set up the schema extension must have schema master write authorizations.
	The SnapIn must be installed on all computers where you want to run the MMC extension.

1.3 UCServer Tools for Active Directory® - Snap-In Setup

You will find the UCServer Tools for Active Directory® - Snap-In Setup in the start menu. With this program, the Active Directory® will be configured for the use of the Snap-In.

The user which is running the program needs to have write permissions in the Active Directory®.

Active Directory® server

Enter here the name of the Active Directory® server.

Adding or remove

You can add the snapin to the configuration in Active Directory® or remove them.

1.4 UCServer Tools for Active Directory® - Scheme Setup

You will find the UCServer Tools for Active Directory® - Scheme Setup in the start menu. With this program, the Active Directory® Scheme for use of UCServer user management will be expanded.

The program should be run on the Active Directory® schema master.

The user which is running the program needs to have schema permissions in the Active Directory®.

Active Directory® server

Enter here the name of the Active Directory® server.

Adding or remove

You can add the snapin to the configuration in Active Directory® or remove them.

1.5 Users and Computers snap-in

After the installation of estos UCServer Tools for Active Directory® the Active Directory® user and Computer snap-in has been extended by the tab UCServer. With estos UCServer Tools for Active Directory® you are able to configure Active Directory® computer, group and user objects for use in the estos UCServer.

- CTI user account administration
- CTI computer account administration
- CTI group management

1.6 Setup user for UC

1. Click on Users in the console structure.
Or click on the folder which contains the relevant user account.
2. Click with the right mouse button on the user account and then click on Properties.
3. Click on the UCServer tab.

User is set up for UC

Activates the user for UC user administration.

User settings...

Click on 'User settings' to edit the user properties.

Details can be found under user account properties

2 User settings

Here all user relevant settings are carried out. This includes the contact information of the user, Numbers and line assignments, Services that can be used and the user's rights.

General

Field	Description
User name (login)	This is the user name the user logs in at the estos UCServer. It corresponds to the Windows® login name if Active Directory® is being used.
Identity	The identity of the user, in order for them to be clearly addressed in the Federation scenario. The identity starts with 'sip:', followed by username, '@' and the users presence domain. The presence domain must be in agreement with the UCServer, so that the user will then also be accessible from outside of the company via the federation.
First name	The user's first name (e.g. Arthur).
Last name	The user's last name (e.g. Dent).
Displayed name	This is the user's full name (e.g. Arthur Dent). This can occur several times and is only used for display purposes. If the field is empty, a suggestion is automatically shown when the first and last name are entered.
E-mail address	This is the e-mail address of the user. Among other things, it will be used for notifying the user about missed calls and voice-mail messages.

Telephone numbers

The phone numbers of a user are the same as in their contacts. This applies to the estos UCServer users as well as to Federation contacts. The estos UCServer searches for lines to the phone numbers while loading user accounts. The user automatically receives the lines belonging to him without further configuration. This can be configured in the global settings in the UCServer and via a specific setting in the user database. See Automatic line binding.

Numbers are displayed as how they are stored in Active Directory®. Whilst the user accounts are downloaded in the estos UCServer they are converted into supercanonical notation. If several locations are used, the phone numbers must be given in the Active Directory® in supercanonical notation!

Field	Description
Business	The user's primary business phone number
Business 2	Another business phone number of the user
Private	The user's private phone number.

Mobile	The mobile phone number of the user. This phone number is used, for example, for the automatic setup of call diversions and to send SMS text messages.
Voice mailbox	The user's mailbox phone number. The mailbox is the user's personal answering machine. This number is used for automatically setting up call redirections. It should be entered as an internal phone number (e.g. 147).
Recording server	The phone number of an external Call Recording server. This field is only required if you use an external server rather than the integrated Call Recording server. If this field is filled in, the given phone number is used for Call recording. If no number is entered, the centrally configured number is used.

Other, for phones that cannot be seen by other users

Permits the allocation of phones which are not in the contact details of the user. The user can use these phones as usual.

Field	Description
First phone	Number of first line
Second phone	Number of second line

Contact address

The contact address shows all contact relevant details of the user. They can be viewed by estos UCServer users as well as by Federation contacts (depending on the authorization).

A contact picture can be assigned to every user when using the integrated user administration. This picture is then displayed at different places in the estos ProCall. This photo is used (thumbnailPicture) if the Active Directory® user administration is used. The picture is scaled to the size of 96x96 pixels when it's saved or added.

Services

Enter here which software and functions the user is allowed to use. The user can obtain more rights through membership in a Group as mentioned here.

Field	Value
CTI lines	If this option is switched on, the user is allowed to use CTI functions. If, on the other hand, the option is not activated, the user can use only presence and chat functions.
Configure user profile	If this option is activated the user may change server-related settings themselves.

personally	
Start chat	If this option is activated the user may send text messages to other users.
Allow audio chat	If this option is activated, the user is allowed to use audio chat with other users.
Allow video chat	If this option is activated, the user is allowed to use audio and video chat with other users.
Accept screen sharing requests	If this option has been enabled, the user may only use the screen sharing features when other users have invited them to do so.
Initiate desktop sharing	If this option has been enabled, the user may independently share their desktop with other users as well as invite other users to share their desktops.
Send SMS	If this option is switched on, the user may send SMS text messages. For this the SMS dispatch must be configured in the UCServer.
Send missed calls as an e-mail	If this option is activated, the user receives e-mails for missed phone calls. For this the mail settings has to be configured in UCServer. The user decides in the estos ProCall settings whether they want to use this feature.
Deliver unanswered phone calls as SMS text messages.	If this option is activated, the user receives SMS text messages for missed phone calls. For this the SMS settings has to be configured in UCServer. The user decides in the estos ProCall settings whether they want to use this feature.
Record calls	If this option is activated the user may use the call recording function. The call recording must also be configured for this.
Profile page visible to anonymous users	When this option is enabled the members of the group are visible via the profile page of the web service.
Use phone books	If this option is activated, the user is allowed to use phone books as a contact data source. The usage regulations of the respective manufacturer are to be followed. Phone books are linked via estos MetaDirectory.

Additional lines

Here, additional lines can be made available to a user. These lines are then displayed on the Client in

Favourites within a specific group that cannot be changed by the user. From there, these lines may be copied into other groups or into the monitor.

Field	Value
Display outgoing calls	If this option is activated the user may see the phone numbers and names with which this extensions makes calls if the calls are initiated from here.
Display incoming phone numbers	If this option is activated the user may see the phone numbers and names with which this extensions makes calls if this extension is called.
Pick up calls / Configure call forwarding	If this option is activated the user may pick up calls from this extension.

Authorizations

Which users have authorizations for the user just opened and what the authorizations are can be specified here.

User authorizations can also be given by group membership and by global assignment. These cannot be viewed here.

This setting can also be changed by the user themselves via estos ProCall. For federation contacts these settings can only be changed in estos ProCall.

Authorizations are always cumulative, i.e. if the authorization is given in one place it cannot be removed again at another.

2.1 Setup computer for UC

1. Click on Computers in the console structure.
Or click on the container with the computer which you wish to manage.
2. Click with the right mouse button on the computer in the detail area and then click on Edit.
3. Click on the UCServer tab.

Set up computer for UC

Activates the computer for UC computer administration.

Computer properties...

Click on 'Computer properties' to configure the UC computer properties.

Details can be found under UC computer account properties

3 Computer settings

The computer settings are used to permanently assign lines to a (computer) location.

General

Here two phones can be allocated, which always sit beside this computer (usually not mobile phones). If a user logs-on to this computer, he or she can use these phones even if he or she is not the owner of these phones. See also Roaming users.

Multiline TAPI

These settings are only valid for the multi-line TAPI driver, if it has been installed on the computer. The multi-line TAPI driver always provides the extensions defined on the computer, regardless of who has logged on to it. Alternatively to the configuration of individual lines all line can be enabled and provided via entering an asterik *. The multi-line TAPI driver then always reflects the currently available lines on the server. This is required, for example, for use with a Terminal Server.

Only authorized users may dial

If this option is activated, the use of the lines is limited. Only the owner of a line is able to use it actively. The current user name is determined for this, for example, starting a call on a line. It is then verified whether it is the user's own line in the User configuration. Only then can the line be used actively.

3.1 Setup group for UC

1. Double-click on the domain node in the console.
2. Click on the folder which contains the group.
3. Click in the detail area with the right mouse button on the group and then click on Properties.
4. Click on the UCServer tab.

Set up group for UC

Activates the group for UC group administration.

Group properties...

Click on 'Group properties...' to manage UC group properties.

Details are to be found at UC group properties

4 Group settings

User groups are used to group users and for granting mutual rights.

The administrator defines which authorizations the group members have amongst themselves. In addition, they can define a group leader and optionally a deputy who can have additional authorizations.

General

- **Group name**
In addition to displaying the group name, it is possible here to define a group line and its rights towards the group members.
- **Head of group / deputy**
The group leader and their (optional) deputy have a superior role in the group but only in that they can be granted extended authorizations to the group members.
The users entered here do not have to be group members.
If a group leader is defined, the authorization field in which the authorizations can be defined appears.

Services

Which software and functions the group users may use is defined here. If you allow a function in the group it applies for all group members. If you do not allow a function in the group this does not mean it is disabled for all group users - the user's individual settings are then used.

Field	Value
Configure user profile personally	If this option is activated the user may change settings relevant for the server themselves from within estos ProCall.
Start chat	If this option is activated the user may send text messages to other users.
Allow audio chat	If this option is activated, the user is allowed to use audio chat with other users.
Allow video chat	If this option is activated, the user is allowed to use audio and video chat with other users.
Accept screen sharing requests	If this option has been enabled, the group users may only use screen sharing features when they have been invited to do so by other users.
Initiate desktop sharing	If this option has been enabled, the group users may independently share their desktops with other users as well as invite other users to share desktops.
Send SMS	If this option is activated the user may send text messages as a SMS. Text (SMS) dispatch must be configured for this in the UCServer.
Record calls	If this option is activated the user may use the call recording function. phone call recording must be configured for this in the UCServer.

Use phone books	If this option is switched on, the user may use the telephone books. In doing so the respective licence regulations of the phone book producers are to be observed. Telephone books are linked through the estos MetaDirectory.
The group's journal will be visible to the group leader.	If this option is activated, the group leader (and his deputy) can view the journal of all group members, except calls marked as "private".
The group's journal will be visible to the whole group.	If this option is activated, all members can view the journal of all group members, except calls marked as "private".
Journal entries may be modified	If group members are allowed to see the each other's journal entries, they will also be allowed to modify the entries with this additional option.
The group's users will be displayed on the member's monitor.	If this option is activated a special display group which contains all group members is visible for group members in their client monitor. The user cannot change this display group. It contains all users from all groups of which the user is a member and who have activated this option.
Profile page visible to anonymous users	When this option is enabled the members of the group are visible via the profile page of the web service.
Kontaktportal group	If this option is enabled, the members of the group can be displayed in the Kontaktportal of the web service.

Authorizations

It can be specified here which authorizations the members of the group have between themselves.

User authorizations can also be given for every user individually and by global assignment, but these can't be viewed here.

This setting can also be changed by the user themselves via estos ProCall. For federation contacts these settings can only be changed in estos ProCall.

Authorizations are always cumulative, i.e. if the authorization is given in one place it cannot be removed again at another.

5 Schema reference

Either a schema extension or a reserved field can be used to integrate estos UCServer into the Active Directory® user administration. You must decide whether you wish to extend the schema or not before installing UCServer.

Note on standard LDAP attributes:

The UCServer use LDAP standard attributes for user, groups and computer management. Depending on the settings at the user management, you allow the UCServer to write back to these attributes. If you disable write-back for default attributes, the service writes only in the extended attributes of the schema or the reserved field (extension name). Configuration instructions, please refer to the UCServer instructions.

Reserved field

If the schema is not extended, UCServer will write into the following fields:

Attribute	Type	Read/Write	Extended	Description
extensionName	String	Read/Write	no	If the schema is not extended, all custom settings will be stored in the field 'extension name'.
proxyAddresses	String	Read/Write	no	Stores users communication addresses. The UCServer adds the users SIP address to this field.

Extended schema

The following list shows which LDAP attributes are used and which are added to the default schema.

objectClass computer:

Attribute	Type	Read/Write	Extended	Description
sAMAccountName	String	Read	no	Computer Name
distinguishedName	String	Read	no	Object path within the AD structure.
objectGUID	String	Read	no	Object unique ID within the AD structure.
ectisrv3CTIEnabled	Integer	Read/Write	yes	Enable this computer for CTI
ectisrv3SchemaVersion	Integer	Read/Write	yes	Version information about the schema extension
ectisrv3CTIPhonePrimary	String	Read/Write	yes	Primary phone number of the

				telephone located near the computer
ectisrv3CTIPhoneSecondary	String	Read/Write	yes	Secondary phone number of the (second) telephone located near the computer
ectisrv3CTILinesPermissions	Integer	Read/Write	yes	Access rights for the telephony devices that are listed in ectisrv3CTILines (Bitfield) ¹
ectisrv3CTILines	String	Read/Write	yes	List of telephone numbers (\$ seperated) of the telephony devices that are available in the multiline tapi client on that computer
ectisrv3ComputerPassword	String	Read/Write	yes	Encrypted CTI password for this computer.

objectClass user:

Attribute	Type	Read/Write	Extended	Description
sAMAccountName	String	Read	no	Logon name of the user
userPrincipalName	String	Read	no	Username
distinguishedName	String	Read	no	Object path within the AD structure.
objectGUID	String	Read	no	Object unique ID within the AD structure.
givenName	String	Read	no	First name of the user.
sn	String	Read	no	Last name of the user.
displayName	String	Read	no	Display name of the user.
mail	String	Read	no	E-Mail Adress of the user. Will be used for

				example to automatically send notifications to the user.
telephoneNumber	String	Read/Write	no	User`s 1. business telephone number
otherTelephone	String	Read/Write	no	User`s 2. business telephone number
homePhone	String	Read/Write	no	User`s private telephone number
mobile	String	Read/Write	no	User`s mobile telephone number
company	String	Read/Write	no	Company name
title	String	Read/Write	no	User`s job title
physicalDeliveryOfficeName	String	Read/Write	no	User`s office location information
streetAddress	String	Read/Write	no	User`s office location street address
postalCode	String	Read/Write	no	User`s office location postal code
l	String	Read/Write	no	User`s office location city
st	String	Read/Write	no	User`s office location state
co	String	Read/Write	no	User`s office location country
wWWHomePage	String	Read/Write	no	User`s office website address
thumbnailPhoto	String	Read/Write	no	User`s thumbnail picture
proxyAddresses	String	Read/Write	no	Stores users

				communication addresses. The UCServer adds the users SIP address to this field.
ectisrv3CTIEnabled	Integer	Read/Write	yes	Enable this user for CTI
ectisrv3SchemaVersion	Integer	Read/Write	yes	Version information about the schema extension
ectisrv3UserSipUri	Integer	Read/Write	yes	Unique id for the user within a federation szenario. The adress should comply with the users email-address.
ectisrv3CTIPhonePrimary	String	Read/Write	yes	Primary phone number of the user (the own telephone)
ectisrv3CTIPhoneSecondary	String	Read/Write	yes	Secondary phone number of the user (second own telephone)
ectisrv3UserPhoneMailbox	String	Read/Write	yes	Phone number of the mailbox of the User
ectisrv3UserPhoneRecordingServer	String	Read/Write	yes	Phone number of the call recording server
ectisrv3CTILinesPermissions	Integer	Read/Write	yes	Access rights for the telephony devices that are listed in ectisrv3CTILines (Bitfield) ¹
ectisrv3CTILines	String	Read/Write	yes	List of telephone numbers (\$ seperated) of the telephony devices that are available for the user as additional lines

				(busy lamp field).
ectisrv3CTIServices	Integer	Read/Write	yes	Some rights for the user (Bitfield) ²
ectisrv3UserPassword	String	Read/Write	yes	Encrypted password for this user profile
ectisrv3UserPermissions	Multivalue String	Read/Write	yes	Each string contains the permissions, the user gave to other users on his account in the monitor. The structure of the String is: "user name";"presence rights";"primary line rights";"secondary line rights"\$ The contents of the rights sections are hex values of bitfields containing the rights. ³
ectisrv3PropertyBag	String	Read/Write	yes	List of additional properties (\$ seperated) for that user
ectisrv3UserHomeServer	String	Read/Write	yes	Reserved for future use

objectClass group:

Attribute	Type	Read/Write	Extended	Description
sAMAccountName	String	Read	no	Group name
distinguishedName	String	Read	no	Object path within the AD structure.
objectGUID	String	Read	no	Object unique ID within the AD structure.

member	String	Read/Write	no	Members of this active directory user group.
ectisrv3CTIEnabled	Integer	Read/Write	yes	Enable this group for CTI
ectisrv3SchemaVersion	Integer	Read/Write	yes	Version information about the schema extension
ectisrv3CTIServices	Integer	Read/Write	yes	Some rights for the members of the group (Bitfield) ²
ectisrv3GroupLeaderDN	String	Read/Write	yes	The DN of the group leader
ectisrv3GroupDeputyDN	String	Read/Write	yes	The DN of the group leader deputy
ectisrv3GroupLeaderPermissions	String	Read/Write	yes	Permissions of the group leader (see also ectisrv3UserPermissions description, except here its only one entry).
ectisrv3GroupMembersPermissions	String	Read/Write	yes	Permissions of all group memebers among each other (see also ectisrv3UserPermissions description, except here its only one entry).

¹ ectisrv3CTILinesPermissions:

LINEACCESS_ACTIVE	Make calls	0x00000004
LINEACCESS_REDIRECT	Redirect or Pickup	0x00000010
LINEACCESS_NUMBERSOUT	Display outgoing phone numbers	0x00000020
LINEACCESS_MULTILINECHECKUSER	Only owner can excecute phoneactions	0x00000200
LINEACCESS_NUMBERSIN	Display incoming phone numbers	0x00000800

² ectisrv3CTIServices:

USERRIGHTS_SENDUSERUSER	User is allowed to send User User Messages	0x00000001
USERRIGHTS_SENDSMS	User is allowed to send SMS Messages	0x00000002
USERRIGHTS_WEB	User is allowed to login to the web server (not used at the moment)	0x00000004
USERRIGHTS_USEPROCALL	User is allowed to user estos ProCall	0x00000008
USERRIGHTS_SELFADMIN	User is allowed to change own settings	0x00000020
USERRIGHTS_OFFLINE_JOURNAL	User uses the Offline Journal	0x00000080
USERRIGHTS_OFFLINE_MAIL	User receives Mails for unanswered calls	0x00000100
USERRIGHTS_CALLRECORDING	User may use Call Recording	0x00000200
USERRIGHTS_USEPHONEBOOK	User may use Phonebooks	0x00000400
USERRIGHTS_GROUP_ALLINMONITOR (only applicable for user groups)	All Members can see all group members in a special view in the monitor	0x00001000
USERRIGHTS_GROUP_VIEWJOURNAL (only applicable for user groups)	All Members may see the phone journal of all group members	0x00004000
USERRIGHTS_GROUP_VIEWJOURNALLEADER (only applicable for user groups)	The Groupleaders may see the phone journal of all group members	0x00008000
USERRIGHTS_AV_AUDIO	User may use AudioChat over estos UCServer	0x02000000
USERRIGHTS_AV_VIDEO	User may use VideoChat over estos UCServer	0x04000000

³ ectisrv3UserPermissions:

presence rights	UR_PRESENCE_VISIBLE	0x00000001
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	UR_PRESENCE_CHANGEABLE	0x00000002
	UR_PRESENCE_APPOINTMENT_PRIVATE	0x00000010
	UR_PRESENCE_APPOINTMENT_PUBLIC	0x00000020
primary line rights	UR_PHONE_NUMBERS_OUTBOUND	0x00000001
	UR_PHONE_NUMBERS_INBOUND	0x00000002
	UR_PHONE_NUMBERS_REDIRECTED	0x00000004
	UR_PHONE_SET_REDIRECTION	0x00000100
	UR_PHONE_PICKUP_CALLS	0x00000200
secondary line rights	UR_PHONE_NUMBERS_OUTBOUND	0x00000001
	UR_PHONE_NUMBERS_INBOUND	0x00000002
	UR_PHONE_NUMBERS_REDIRECTED	0x00000004
	UR_PHONE_SET_REDIRECTION	0x00000100
	UR_PHONE_PICKUP_CALLS	0x00000200

6 Call recording

A function for recording calls is integrated into estos UCServer. Call recording is realised via a three-way conference with an ISDN card (with a CAPI driver). If a user makes a call and initialises recording, a three-way conference with the ISDN card is commenced on the user's phone. The estos UCServer recognizes the user with the help of the phone number and records the conversation. At the end of the conversation the recording is sent as a file attachment by e-mail to the user. For this purpose the users need to have an e-mail address configured and the e-mail dispatch has to be setup in the UCServer.

7 Federation

7.1.1.1 *What is a federation?*

A federation is a special trusted network for the users of IT and telecommunication systems, which creates a secure structure for the communication between organisations, with the aim of improving the cooperation between its members.

Within the frame of this structure, every organization, for example, a company, defines on one hand the quality of the information which it would like to reveal and on the other hand, decides which services and systems for the exchange of information may be used.

This definition originates from technical literature, in particular on ECMA (European association for standardizing information and communication systems – former European Computer Manufacturers' Association) documents which talk about federation, federated solutions and federated services. A German notation hasn't been established yet, which is why this document generally uses English terms. Typical communication services which can be used today within the frame of a federation are a presence management and Instant Messaging (Chat). Other services are also imaginable in the future. Audio services and video services could also be provided in future within the framework of a federation.

The presence management within a federation enables the exchange of presence information between organisations and also beyond organisational borders. The technology provides information regarding a person's accessibility so that a suitable means of communication can be chosen depending on the person's status. The user receives information about a person's status or makes this information available to others.

If somebody is online and available then one can get in touch ad hoc via the phone, send a text message and can expect an immediate answer (Instant Messaging, Chat). These functions belong to the group of synchronous media. If the call partner is currently unavailable, an e-mail is usually chosen as the means of (asynchronous) communication. Therefore presence management promotes the user's agility. Moreover, such systems generally offer enhanced functionality, for example, there is often the opportunity to learn about the presence status change of a particular person (tagging). This is an extremely helpful function if you are waiting for a person to return to their workplace because you need information urgently.

To emphasize the long-term potential of the use of federation-based communication, it makes sense to look into presence management and instant messaging services more closely.

7.1.1.2 *What is presence management?*

In the world of classical Computer Telephony Integrations (CTI) concepts, which is the forerunner of many Unified Communications (UC, standardized communication) solutions, the user's telephone lines and the events taking place there were the center of attention but the user himself was less important ("line-centered architecture"). Before it was "Line 177 – Franz Mueller – engaged". In the world of modern SIP-based Unified Communications applications, a new form of "person centered architecture" becomes possible: "Of course" the person comes first with regard to communication! Therefore what's said now is: "Franz Mueller – busy – in a call" or "Franz Mueller – busy – in an appointment till 12:00". In consideration that new services and media can be integrated into the communication network, numerous new questions arise from this context: Is the person with whom I would like to communicate available? With which media can I get in touch? A presence management system answers these crucial questions.

With every person (user, identity) a system links a defined state, the so-called presence information. This is composed in real-time according to defined rules from the status of several services. Examples of this are telephone status (telephony service), calendar status (calendar service) and a logged in/off status (system service). The presence information gives dynamic information about the availability of a communication partner, according to the current state of the different services.

7.1.1.3 What is instant messaging?

In today's typical office work environment, two forms of media dominate: the telephone - to communicate in real-time, a synchronous medium, and e-mail - as the predominant form of correspondence, a asynchronous medium for a less urgent form of communication. Other asynchronous media, for example, the fax, is less important now due to the rise of e-mail communication.

Because of continuous optimization of networks and the rising acceptance from users, another relatively new method for written correspondence has been established: the instant messaging (IM, Chat). With this method two or several users communicate via text messages.

Messages are exchanged on a real-time basis via a push method. Users work with a special client application, e.g., estos ProCall or Microsoft® Office Communicator. The clients are connected via a server or service with each other. The usage is as uncomplicated as e-mail, with the advantage that it allows to react spontaneously and a immediate response can be expected. Exactly the right thing for short inquiries.

Both presence management and Instant Messaging services complement the telephone and e-mail very well. They allow the user to address the contact in a way appropriate to the situation.

7.1.1.4 Who benefits from the federation?

People working together in organizations or in a regular business connection profit from a federation. This includes colleagues as well as business partners, suppliers and customers. Simliar to how the standardized electronic data interchange (EDIFact) channels and structures trade between the involved partners, a federation allows structured communication between organizations. Technical directives and accepted general conditions form the base which can be defined on an administrative level. In the end, it is up to the user to decide whether and how he wants to use the technological possibilities.

8 Technical notes

Information about details and special topics are summarized in this section, referenced from other help pages.

- Telephone number formats
- Automatic line binding
- Terminal Server
- Roaming Users
- TAPI-driver

9 Telephone number formats

Supercanonical number

A phone number format which allows the unique international identification of the participant. The estos UCServer and estos ProCall exclusively use the super-canonical phone number format for all phone numbers. For the display the simplified number is sometimes used (if available). Phone calls are carried out with the shortened phone number.

Supercanonical phone numbers always begin with a + and have the following format: +Country City Number

But no spaces are used. e.g. +49301234567

The call number must only include digits and +.

Service numbers

are special public phone numbers which cannot be given in international number format. These are for example emergency numbers (110) or directory enquiries (118xx). In order to be able to dial these numbers from a PC they must either be longer than the internal phone numbers or configured as external rules. These numbers are specified directly as dialable numbers:

Phone number

No spaces are used. Example: 11833

Dialable phone numbers

are always kept in the format required by the phone system in order to reach the subscriber. The number is formatted according to the rules in estos UCServer.

Examples:

Phone number internal extension number

Phone number external dialing code Number of subscriber 12345 in the local area network

External dialing code Country Area code Phone number Number of a subscriber in a different country

The above examples apply for Germany and depend to a large extent on the regions. You can see which dialing rules apply for your location in the location settings.

Phone numbers for display

are used by estos ProCall insofar as this form consisting of the country code and the area code can be determined.

+Country (area code) number

Example:

+49 (30) 123456 Phone number of subscriber 123456 in Berlin, Germany

10 Automatic line binding

The phone numbers configured in the user account are automatically used by the estos UCServer for the line binding. If the server is able to find a line for the phone numbers of a user, then the line is automatically assigned to the user. The phone number in the user account has to match the phone number of a line. The user automatically receives the lines belonging to him without further configuration.

If users are maintained in the Active Directory®, it can be separately defined whether automatic line binding should be used for the first and second business phone number.

If this automatic mechanism is not to be used for any reason, it can be deactivated via the global setting in the UCServer. In this case the lines must be configured manually for every user. In the user configuration, use the fields 1st phone and 2nd phone to assign the lines to the user. Enter the phone numbers under which the user is available in the business phone number fields.

11 Terminal Server

To use the estos UCServer with a terminal server or Citrix® Metaframe, first install the server.



In contrast to TAPI Server 2.x, with estos UCServer no TAPI drivers are required for estos ProCall in Terminal Server environments.

You only have to install the multi-line TAPI driver if other applications use TAPI.

If you have installed a further application which uses TAPI please observe the following instructions:

estos UCServer is installed on the Terminal Server

If the estos UCServer is installed on the terminal server, no remote TAPI driver is used. The lines which are made available to the telephone system by the TAPI driver can be viewed and used by all users. The estos UCServer has the task to allocate lines to the users.

estos UCServer is not installed on the Terminal Server.

If the estos UCServer is installed on another server, the Multiline TAPI driver needs to be installed on the terminal server. In the configuration of the Computer all lines are allocated to the Multiline TAPI driver, which are required by the terminal server users. These lines can then be viewed by all users and the right line is always used for the user which is logged on.

Every user uses the terminal server from his permanent workstation:

In this case every user can have his own phone assigned to them. Every user is the owner of his phone which stands next to his workstation.

Every user can use the terminal server from any workstation:

Users do not have an own number:

In this case users are not assigned their own lines. Phones are assigned to the computers which they are standing next to. If a user logs on to the terminal server from a workstation they are assigned the phone standing next to that workstation.

Every user has an own number:

In this case every user can have his own phone assigned to him. The user can then either take his (cordless) phone with him to his workstation or log on to a phone so that their number is available there.

12 Application with Roaming Users

To use the estos UCServer with roaming users, please install the server first. Note the following:

1. Roaming users definitely require a domain. User profiles are stored on the server. Roaming profiles are intended to allow users to log on to any workstation and access their software, their settings and their documents there.
2. To be able to ensure that the user is able to use the phone next to the PC on which they are logged on, when using a fixed phone, the phones have to be specified in the computer configuration Computer. This defines the location of the phones.
3. With wireless phones, the user has to be the owner of the phone in the configuration User.

13 TAPI-driver

A TAPI-driver for your phone system is required to operate this software.

A TAPI-driver is a system component that is provided by the manufacturer of your telephony device (either free of charge or for a fee).

The TAPI-driver connects the CTI software to the telephony terminal device. Each TAPI-driver supports different functions depending on the implementation. Not all functions which you can perform on the phone itself are always available on the PC.

TAPI-drivers are installed in Settings - Control Panel - Phone and Modem Options - Advanced.

14 Info about estos UCServer Tools for Active Directory®

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