

Deployment Guide
of
iolink iOffice Communicator
for
HCL Notes & Sametime

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1. Overview

This deployment guide is intended for anyone who wants to deploy ilink iOffice Communicator and who is familiar with HCL Sametime/Notes.

iOffice Communicator is a client/server software that integrates Sametime and Notes clients with customers' phone systems. Sametime/Notes users use iOffice Communicator to control their company phones via client plugins/extensions. The iOffice feature-set includes call control of outgoing and incoming calls, caller identification through Sametime/Notes address books, call lists, call forwarding, etc.

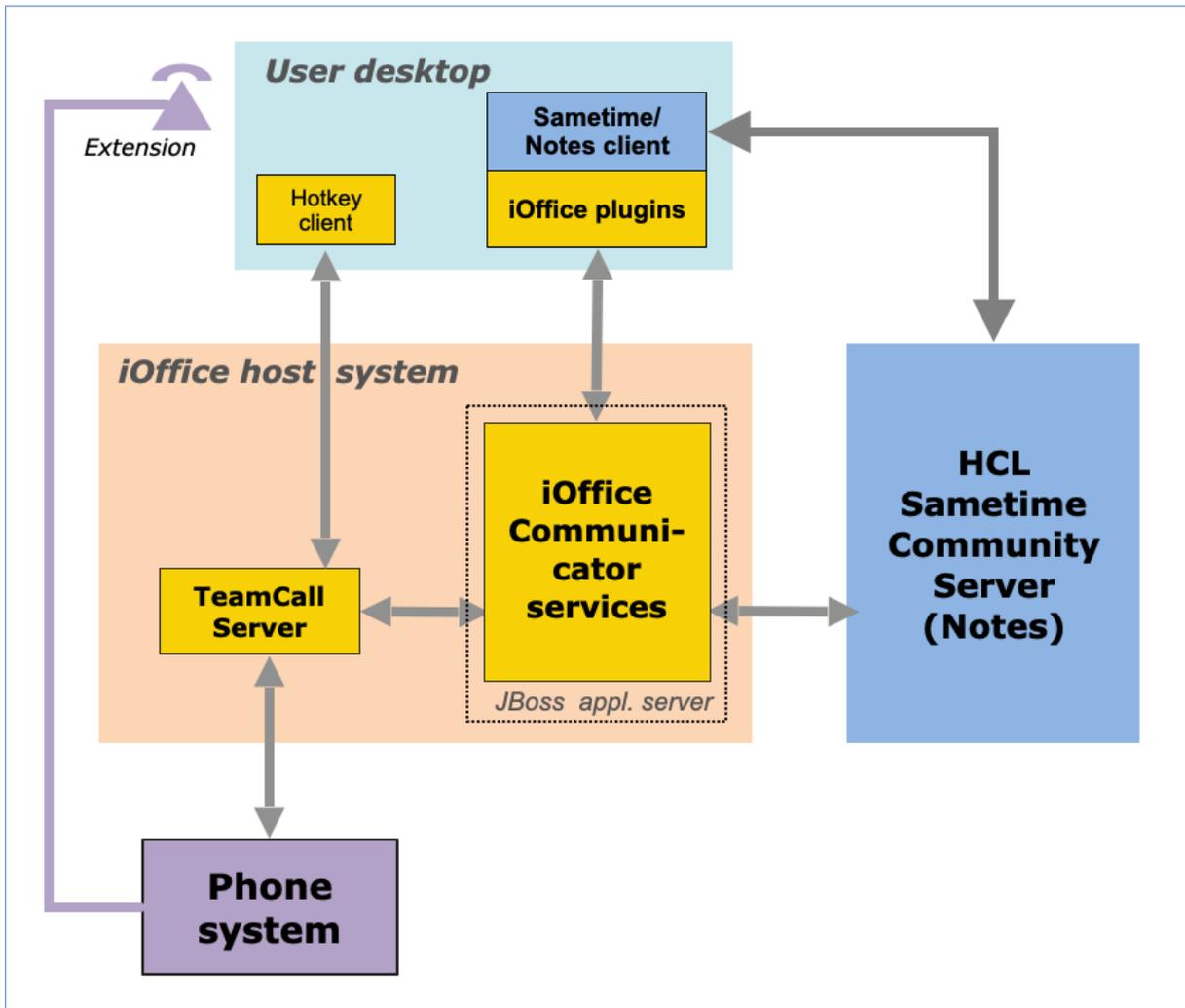
With iOffice, a user controls his company phone system device/extension. iOffice also offers an optional softphone. The voice channels as well as general call routings are still performed by the customer's phone system(s).

ilink iOffice Communicator consists of server-based components as well as Sametime Connect client plugins. The server components are divided into JBoss and non-JBoss services:

JBoss application server runs *iOffice Service Activator, Call Journal Service, Group Service, Call Forward Service, Phone Number Resolution Service*.

Standalone services are: *Telephony Presence Service* and *TeamCall* server (with one instance per phone system node).

On the client side, individual Sametime plugins are used for telephony presence, call



control, call forward, call pickup and call journal.

TeamCall is an ilink CTI middleware to connect iOffice services to customer's phone systems using vendor-specific protocol APIs and to exchange control data through these data links.

Service Activator collects and provides configuration settings for the other services.

Telephony Presence Service displays the current phone status of all users in the Sametime contacts list (even if they are not currently logged into Sametime).

Phone Number Resolution Service resolves incoming phone calls through a lookup of the caller ID (ANI) in a Notes directory/address book.

iOffice Call Journal Service manages the call history of the users. The service is triggered by the Telephony Presence Service. The call history of the users will be applied as call detail record files in a JBoss folder.

iOffice Group Service manages the rights of the iOffice users to perform call pickup and forwarding on other users' phones.

iOffice Call Forward Service manages call forwarding requests for a phone.

2. Technical prerequisites

A. Telephone system (PBX)

- iOffice Communicator connects with one or multiple customer PBXes through the ilink CTI middleware *TeamCall Server* using a TCP data connection over the customer network
 - see [ilink TeamCall product website](#) for more detailed PBX type support.
Note: for most PBXes, further vendor licenses and additional hardware modules if necessary are required – these must be ordered by the customer through his PBX vendor or reseller.
 - PBX configuration of its CTI protocol interface must be provided by customer

B. Sametime/Notes

- Installed Sametime server: Community Server, System Console, Domino Server
- Supported Sametime server and client releases:
 - Sametime Server version 9-12
 - Sametime Connect Client stand-alone, version 9-12, Windows and macOS
 - Notes client version 9-12 with embedded Sametime Connect Client version 9-12
- iOffice client-plugins version 1.4 are installed in the user's Notes/Sametime clients
 - Wherever Notes/Sametime application is running, iOffice is supported as well. This includes all Windows and Mac OS distributions, that are supported by HCL.
 - Sametime plugins are distributed via the customer's Sametime server update site and with "managed settings".
 - Notes plugin distribution: we recommend using Notes widget catalog or other 3rd party tools (e.g. Panagenda MarvelClient)
- For details on supported platforms see HCL documentation on Notes Client
As of today, see **System Requirements for HCL Notes:**
https://support.hcltechsw.com/csm?id=kb_article&sysparm_article=KB0073795

C. Host system

- One physical server or VMware to host iOffice services with following specs:
 - 1 dual-core CPU (Xeon class) with at least 3 GHz per core, 4 GB RAM, 25 GB storage, Gigabit Ethernet network interface
—> sizing valid for up to 750 named users with up to 3 PBX connections
 - Supported OS
 - Windows 2019/2016 Server, Standard Edition
 - Linux like Debian 9-11 or RedHat RHEL 7-9, other distribution on demand.
- Network connection with routing to PBX and Sametime Community Server
 - *Customer firewall settings: please mind the required [port communication](#) pictured on next page!*
- For software installation and support service, ilink needs temporary remote desktop connection to the host system

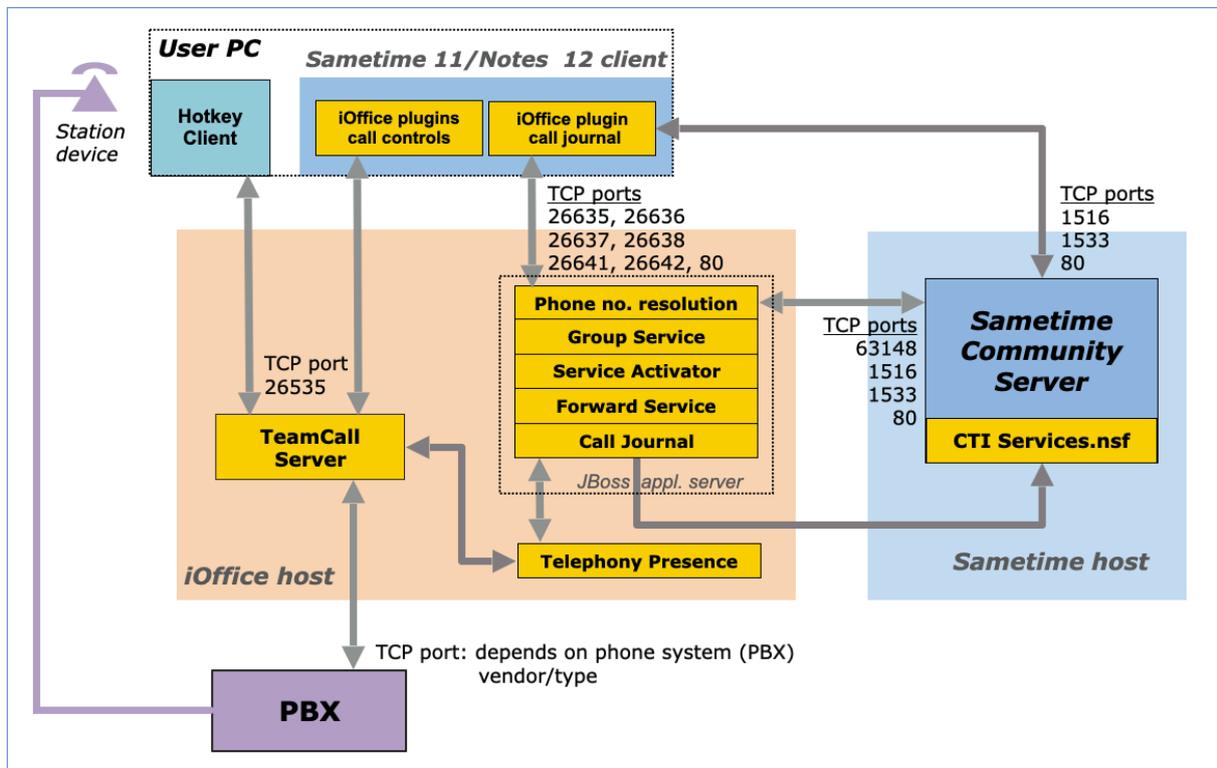
3. Installation and configuration of iOffice Communicator

Software deployment of iOffice Communicator requires:

1. Installation of ilink TeamCall server
 - setup of CTI link to customer PBX
2. Sametime and Domino preparations
3. Installation of the JBoss application server (runtime environment for most of iOffice services)
4. Installation and configuration of the Presence Service
5. Installation and configuration of the Phone Number Resolution Service
6. Installation and configuration of the Service Activator
7. Installation and configuration of the Journal Content Service
8. Installation and configuration of the Forwarding Service
9. Configuration of the HCL Sametime Community server
 - Initial setup of iOffice `ctiservices.nsf` database
 - setup of policies and managed settings for Sametime Connect clients to distribute iOffice communicator plugins

For small to medium system sizes (i.e. <1.500 users) ilink recommends to install all ilink services on a single dedicated host system.

The following overview shows the network traffic/port communication between the system components. All connections are using TCP protocol.



3.1. ilink TeamCall Server installation

- One TeamCall Server instance per customer phone system (PBX) is required.
- ilink Connectivity Adapters/CA¹ are only required for these PBXes: Avaya AURA Communications Manager and CS1000 (Nortel Meridian 1), Cisco Unified Communications Manager (CUCM).

3.1.1. TeamCall CSTAServer installation on Windows, single instance

1. Unzip TeamCall software install package, open TeamCall folder and start "TeamCallSetup" – you will need „Administrator“ access rights.
2. An install-wizard will guide you through the installation
 - a. default installation folder is C:\Program Files (x86)\ilink\
 - b. choose "Everyone" for server-based, i.e. multi-user, deployments

¹ Connectivity Adapter (CA) installation is not covered in this guide.

3. After auto-install has successfully finished, leave the wizard window with „close“
4. The installer has created a TeamCall executable in `C:\Program Files (x86)\ilink\TeamCall\Bin\CSTAServer.exe` and has registered TeamCall to Windows
5. Now, you have to setup TeamCall Server configuration for the customer phone system (PBX):
 - a. Edit `Default.conf` configuration file, it's located in `C:\Program Files (x86)\ilink\TeamCall\Bin`
 - b. enter customer's license key under „license“
 - i. that line should read „license = 3ac6d7af928...“
→ the license string must be in one line, i.e. no line break!
 - ii. enter PBX vendor name for `PBX-type`
→ In order to get the right/matching PBX type, run the following command in Windows command line interface (cmd):
`cstaserver.exe -l` to display TeamCall supported PBX types
 - iii. enter IP-address of your PBX for „`cstaLinkAddress`“
 - iv. enter port address of the CTI (LAN) interface of your PBX for „`cstaLinkPort`“
→ *see Appendix for common default ports or ask customer's PBX admin*
 - c. Save and close `Default.conf` file

B. Start and run TeamCall

1. During wizard-based installation, TeamCall has been automatically registered as new Windows service with auto-start enabled. To run TeamCall initially after installation and configuration, please start TeamCall service manually (or reboot your TeamCall host):
 - a. open Windows Services, search for „TeamCall Server...“ and start the service
2. TeamCall will then automatically open a TCP/IP port connection to PBX CTI-interface. To verify TeamCall-PBX connection (established? active?) please perform the following steps:
 - a. Open a Windows command line terminal (cmd) and

```

Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. Alle Rechte vorbehalten.

U:\>telnet localhost 26535
Verbindungsaufbau zu localhost..._
    
```

- i. enter "telnet localhost 26535"
-> upon telnet connect, screen-content is be erased and you just see a blank, black screen. You're now in an active telnet session.
- ii. enter the command „STLI“ and hit return (note: you do not see entered command in telnet window). Telnet window then responses with this message: `error_ind SUCCESS STLI`
You're now in an active STLI session with TeamCall.

```

error_ind SUCCESS STLI;Version=1;DeviceInformation=Standard
    
```

- iii. start a „listener“ (monitor) on a PBX station device (=extension) just for test purposes (nothing else will happen); you can use your own phone-extension for his test. Enter command „MonitorStart <your phone extension>“.
Telnet window then responses with this message: `error_ind SUCCESS MonitorStart`
In this case your PBX link is up an running and you're done!
- iv. If you do not have PBX-connectivity with TeamCall, you see this message:
`Link Out Of Service Message`

```

error_ind SUCCESS STLI;Version=1;DeviceInformation=Standard
MonitorStart 555
error_ind SUCCESS MonitorStart
    
```

In this case, check your PBX (IP and port address) as well as TeamCall Default.conf.

- b. Optional checks (you must have an active STLI session):
 - i. Pick-up your receiver and watch your telnet window – you should see this message (maybe followed by further output):
Initiated <extension> normal
 - ii. Perform a second monitor start on a second test device (extension) with „MonitorStart <extension2>“
→ You should see again the message
error_ind SUCCESS MonitorStart
→ If you see this message
error_ind LICENSEERROR MONITORINGPOINTSEXCEEDED Monitor
not set
that means TeamCall license key is *not valid* (no key was entered or key is corrupt) - please check TeamCall Default.conf file
- c. If all tests were positive, you're fine now – TeamCall's running and it has PBX-connectivity! You can now proceed to connect your client application to TeamCall
- d. To stop this test, hang-up and enter „MonitorStop <extension>“
 - i. Stop 2nd device monitor if you carried out that optional license test
: „MonitorStop <extension2>“
- e. To end STLI-session please enter „BYE“
- f. Close cmd-window

3.1.2. Deinstallation of TeamCall CSTAServer

To deinstall TeamCall server, enter „Windows Settings“, open “Apps & Features (Add/Remove Software)“, then deinstall „TeamCall Server“.

To check if the DIIOP task is running, enter `show task` in the Domino Server console:

```
Database Server      Process Monitor
DIIOP Server        Listen for connect requests on TCP Port:63148
DIIOP Server        Utility task
DIIOP Server        Control task
Admin Process       Idle
```

Note: To start the DIIOP task *manually*, enter `load diiop` in Domino Server console:

```
> lo diiop
27.08.2010 13:51:52   DIIOP Server: Starting...
27.08.2010 13:51:53   DIIOP Server: Started
>
```

To stop the DIIOP task *manually*, enter `tell diiop quit` in Domino Server console:

```
> tell diiop quit
27.08.2010 13:57:29   DIIOP Server: Waiting for all tasks to complete
27.08.2010 13:57:43   DIIOP Server: All tasks have completed
27.08.2010 13:57:43   DIIOP Server: Shutdown
>
```

Step 2:

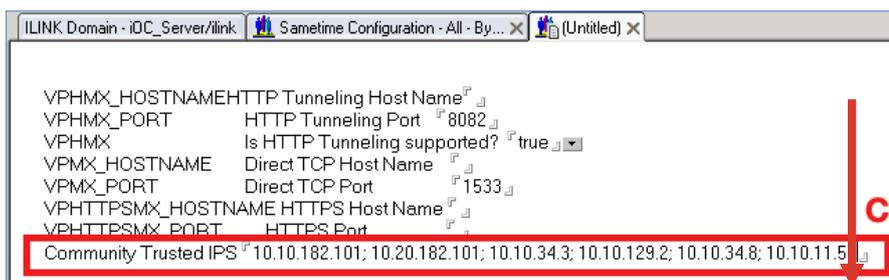
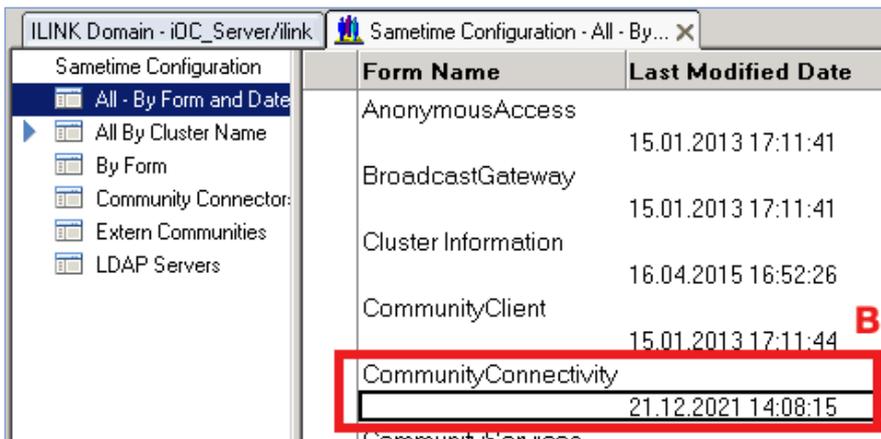
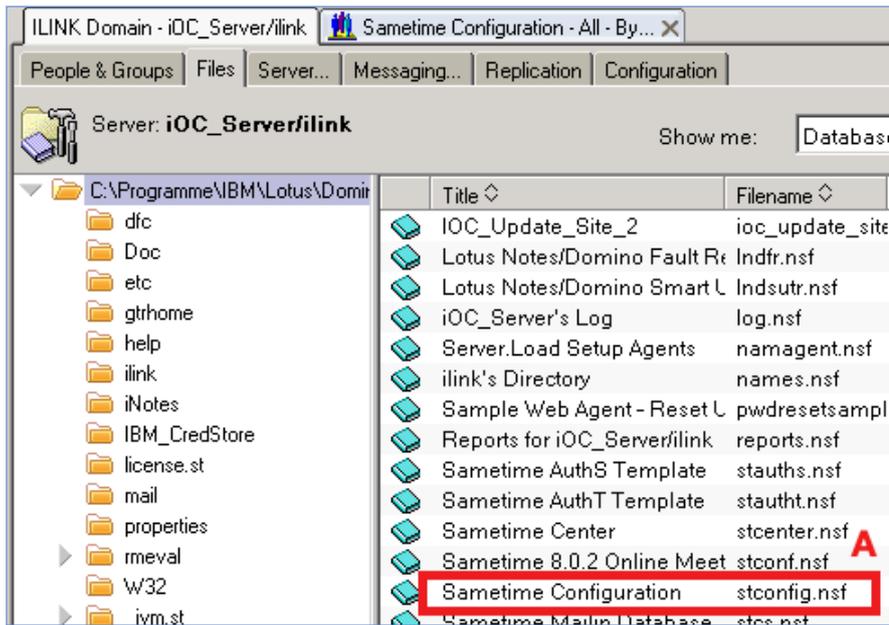
On Sametime Community Server, add the IP address of the iOffice Communicator host system to Sametime’s list of trusted servers to allow external connections.

Open the Domino Admin Console, then do A, B and C:

- A. In *Sametime configuration*, open the file `stconfig.nsf`.
- B. Select the form *CommunityConnectivity*.
- C. Enter the IP address of the iOffice Communicator host system under *Community Trusted IPS*. Remark: multiple IP addresses are entered/separated by a semicolon and a blank space.

Note: next page shows Domino screenshots.

Afterwards, activate this configuration by restarting the Sametime Community server - please mind that this results in a (short) downtime for the customer’s Sametime users!



3.2.2. JBoss server installation

JBoss can be installed to an arbitrary location, e.g. within or outside of %ProgramFiles%. iOffice Communicator will create a log folder next to the JBoss installation folder, so we recommend to create a joint folder for both, e.g. %ProgramFiles%\ilink\iOfficeCommunicator

This would result in a setup like this:

%ProgramFiles%\ilink\iOfficeCommunicator\jboss\ (JBoss installation folder)

%ProgramFiles%\ilink\iOfficeCommunicator\log\ (the iOffice log folder)

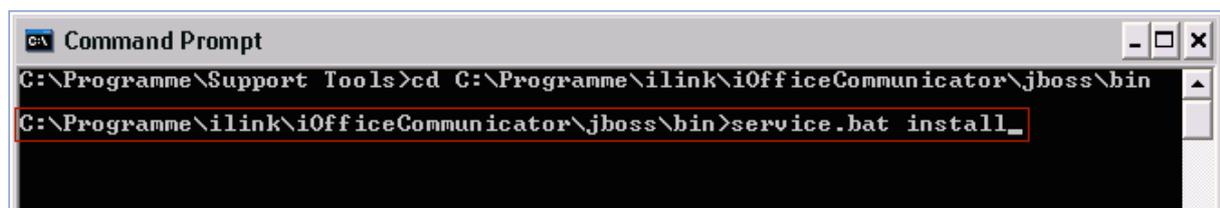
Copy the complete JBoss installation folder from the JBoss installation package to its destination (e.g. to %ProgramFiles%\ilink\iOfficeCommunicator\jboss).

To register JBoss as a Windows service, open a Windows command prompt, move to the bin folder within the the JBoss installation folder

(e.g. %ProgramFiles%\ilink\iOfficeCommunicator\jboss\bin)

and type

service.bat install



The Windows service name will be ilink J2EE Server:

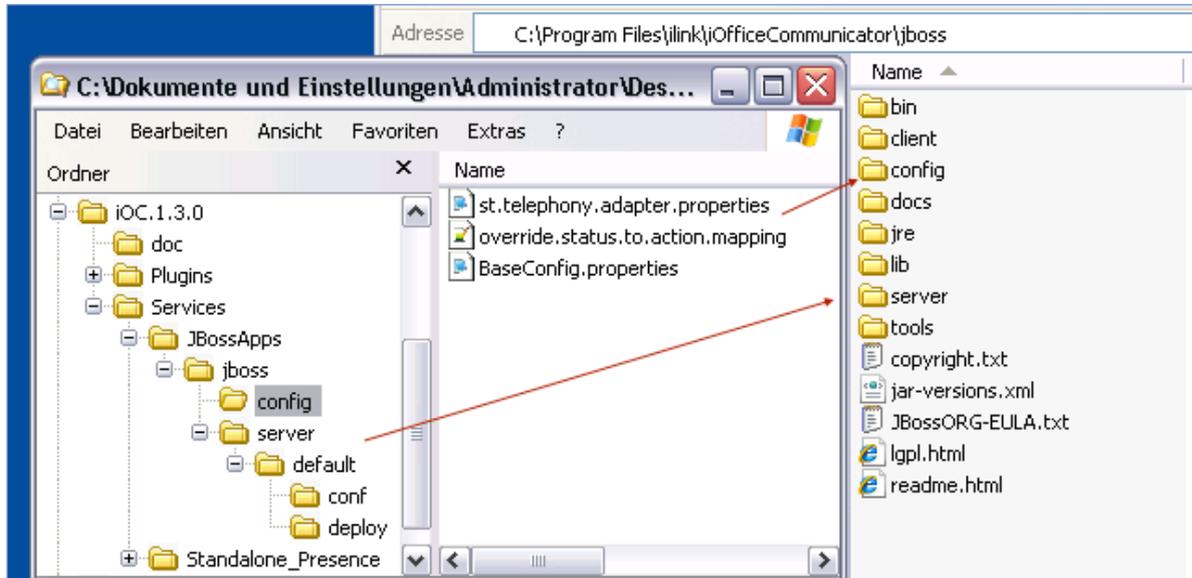
Hilfe und Support	Aktiviert das ...	Gestar...	Automatisch	Lokales
HTTP-SSL	Implementier...		Manuell	Lokales
ilink J2EE Server	JBoss Applica...	Gestar...	Automatisch	Lokales
ilink-ST_Presence_ShoreTel	JavaService ...		Deaktiviert	Lokales
ilink-STGroupService	JavaService ...		Deaktiviert	Lokales

To deregister the JBoss server as Windows service, run service.bat uninstall.

To remove the JBoss server (and the iOffice logs), please delete the installation folder (e.g. %ProgramFiles%\ilink\iOfficeCommunicator).

3.2.3. Installation of iOffice Communicator services

To install these services, copy the contents of the iOffice installation package's JBossApps/jboss folder and its subfolders into the respective folders and subfolders of your JBoss installation folder.



3.3. iOffice Communicator configuration

You have to configure the iOffice Communicator services with

- a) the `BaseConfig.properties` file on the JBoss host and
- b) the `ctiservices.nsf` database on Community server.

Note: the second step requires remote access to the Community Server, usually granted by the customer's Sametime/Domino administrator.

3.3.1. Configuration of the BaseConfig.properties file

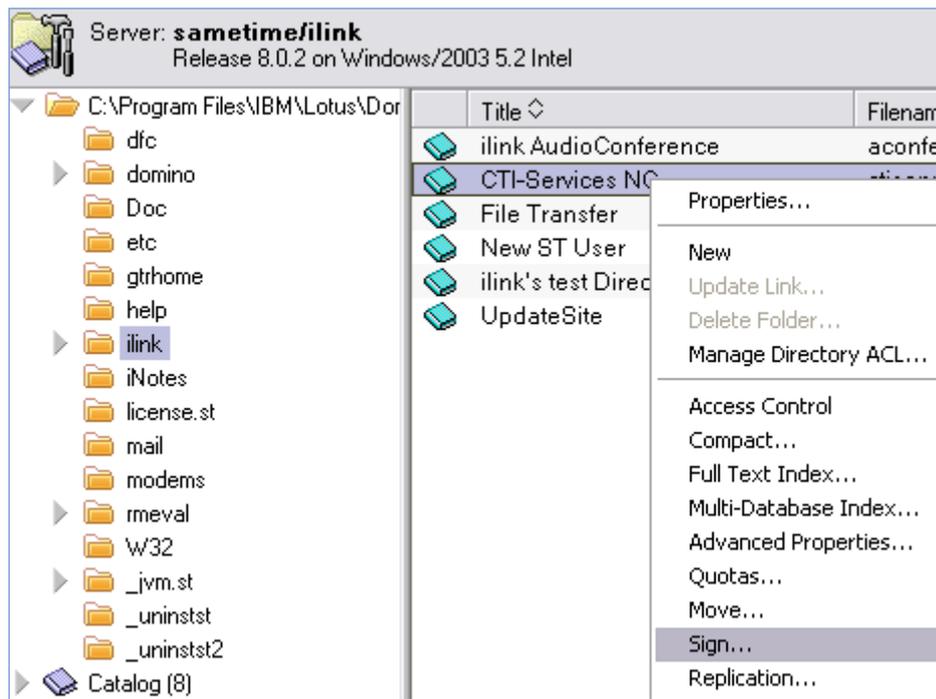
- Log in to the CTI server where JBoss is hosted
- Go to the `config` folder of the JBoss server; e.g.
`%ProgramFiles%\ilink\iOfficeCommunicator\jboss\config`
- Open `BaseConfig.properties` with a file editor
- Set the user name and password according to your Domino server configuration
(`UserName`, `Password`)
- Set Service Activator IP address and port for the other CTI services
(`ServiceActivatorHost`, `ServiceActivatorPort`)
- Enter the SiteID which you are going to use in `ctiservices.nsf` (`SiteID`)

3.3.2. Install iOffice configuration database

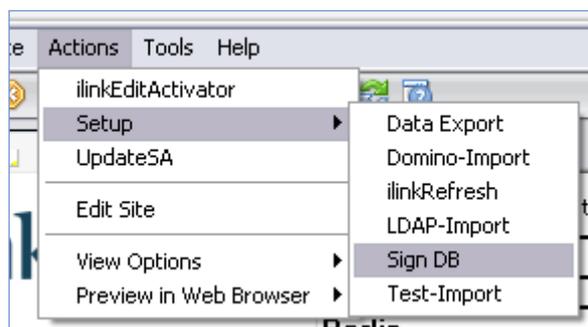
iOffice Communicator uses a database-driven configuration interface. It is delivered as a Notes template file. The database template is installed on customer's Domino server.

- Log in to your Domino server
- Copy CTIServicesTemplate.ntf to <your Domino data folder>\ilink\, e.g. %ProgramFiles%\HCL\Lotus\Domino\ilink\

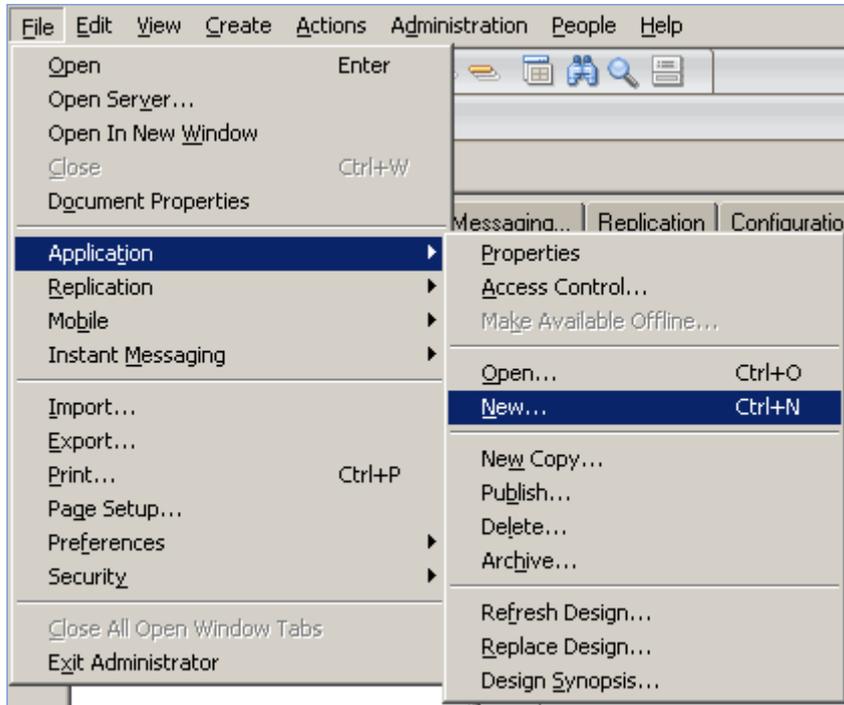
Now you can sign the template; you can sign it with the Domino Admin client:



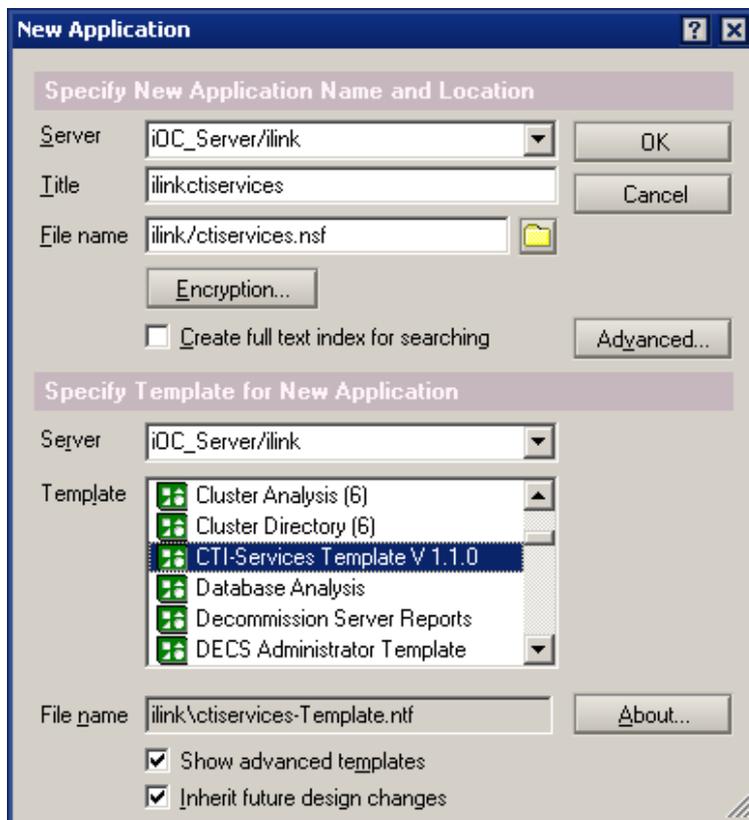
If you don't have a Domino Admin client, use the following *setup action* inside the template:



Now the template file must be transformed into a Domino application, i.e. an `nsf` file. Open your Notes client to create the new application: *File -> Application -> New...*



Select your server in the drop-down menu. Enter the document title and file name as shown in the screenshot (`ctiservices.nsf`). Then select the template file and select your server.



Enable *Show advanced templates*.

- If the template document was copied into <Domino Data Folder>/ilink as previously described, it should be listed as "CTI-Services Template".

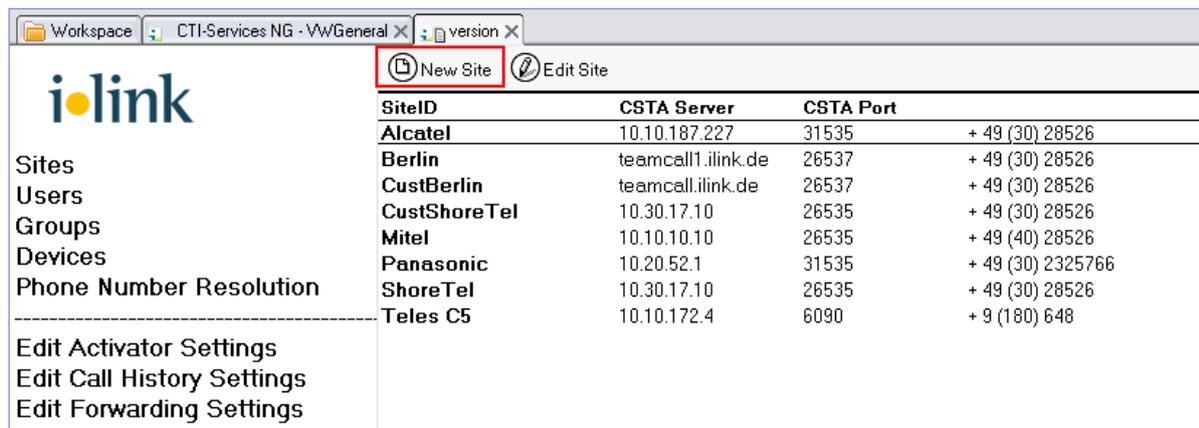
Select *CTI-Services Template* and click *OK* to create the `nsf` file from the template.

Now a Notes application has been created.

Note: the file name of the Notes DB must be "ilink/ctiservices.nsf", otherwise it will not work!

3.3.3. Configuration of CTI Services Notes database

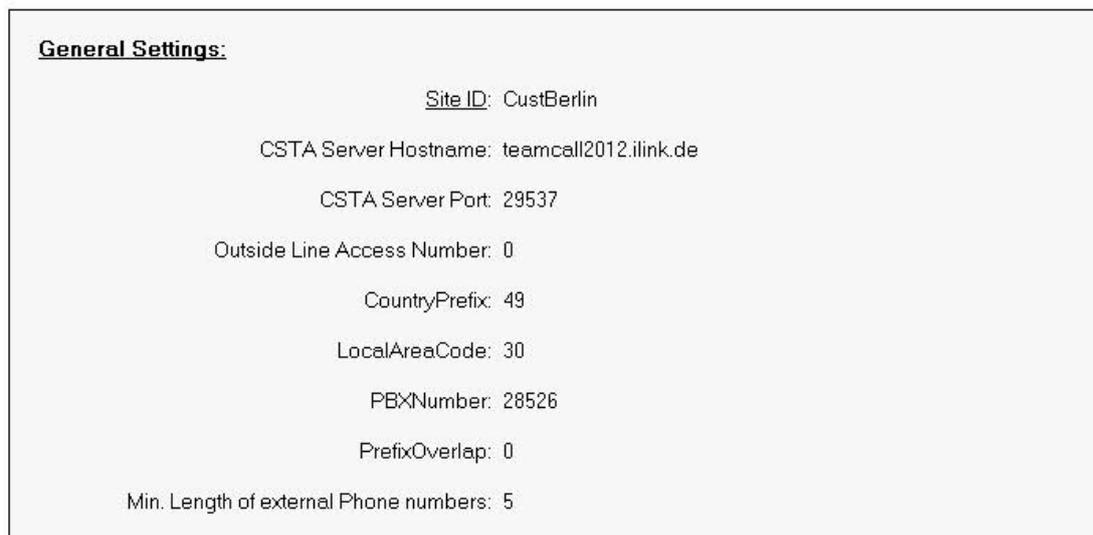
- Login to the Domino server where the CTI Services Notes database is installed
- Open *ilink CTI-Services* Notes database
- First, start configuration of *Sites*, then *Users*, *devices*, *Groups* and *Phone Number Resolution* - select these objects through the left navigation panel (see exemplary screenshot)



Select *New Site* button to create a new site document: a new document is opened and some entries are already preset with defaults. After completing the document, a quick help will be shown at bottom of the document. All parameters in the document must be set, otherwise the services will wait for a complete configuration at start-up. Each site document corresponds to a TeamCall server instance.

→ *One TeamCall instance per phone system is required. If you have set up two TeamCall servers in the customer environment, you'll need two Site documents as well.*

CustBerlin



General Settings (exemplary SiteID „CustBerlin“)

Site ID: Name of this Notes document, which is also configured in the BaseConfig.properties file.

CSTA Server Hostname: IP address or hostname of TeamCall server

CSTA Server Port: Port of TeamCall server, default is 26535

Outside Line Access Number: Digit to get PSTN access, default is 0 in Germany (for "Amtsholung") and 9 in the US

CountryPrefix: Local country code, default is 1 in the USA

LocalAreaCode: Local area code of the location

PBXNumber: Main PBX number, digits between local area code and extension

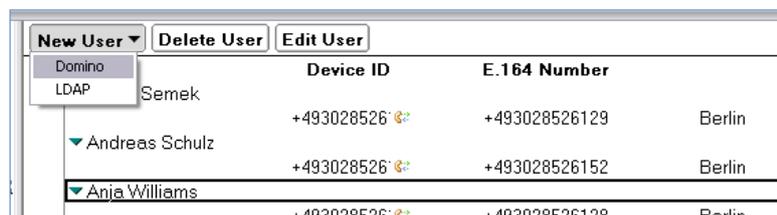
PrefixOverlap: For example user extension in office is 1234. But the user is internally reachable at 311234 (last 2 digits of PBX number + extension). So overlap prefix must be set to 2. If there is no overlap configuration, the overlap prefix must be set to 0.

Min. Length of ext. Phone number: Number of digits for external phone numbers; rule: at least the maximum number of digits for internal extensions plus one

3.3.4. User settings

This menu handles *creation* of new iOffice Communicator users as well as *deletion* and *editing* of existing user entries.

To *create* a new user, click *New User* in the Users view and select the type of the directory where the customer user data is stored.



Select *Domino* to select the users directly from the customers Domino Directory. Pick *LDAP* if you want to use the complete LDAP name from your LDAP directory (e.g CN=Lisa Vogel,O=ilink).

In the user settings, you can enable or disable the CTI features for each user: *iOC* (call control of the users' office phone/station device), *Journal* and *Telephony presence* – exemplary configuration is shown in screenshot below.

User - General settings:	
User name: CN=Eric Dove,O=ilink	
User - CTI Settings:	
Groups: ilink	
iOC enabled: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Journal: <input checked="" type="checkbox"/> Yes	
Telephony presence: <input checked="" type="checkbox"/> Yes	

User name: The name of the user stored in Domino directory

Groups: Here you can define your user groups for call pickup and call forwarding.

iOC enabled: Enables or disables the iOffice Communicator (call control) for a user (all call control buttons are active/inactive)

Journal: Enables the call journal within the iOffice Communicator (this feature will be hidden if the iOC is not enabled)

Telephony presence: Enables the Telephony Presence feature for a user.

Before you leave the settings, you have to configure the user's phone number: click *New Device*.



A new document will open, you need to enter two configuration parameters:

Device settings:		Actual user:
Side ID:	<input type="text"/>	
Monitored ID:	<input type="text"/>	

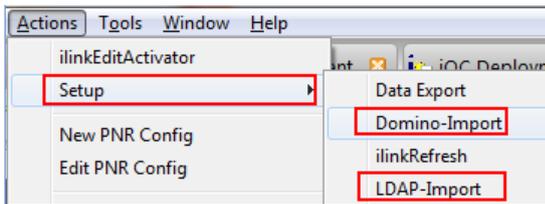
Site ID: Select the site where the user's station device is connected to the PBX at that site: click on the small arrow in order to open an additional selection popup

Monitored ID: The phone number of user's station device – depending on PBX type and setup, it's either just the extension number or the full phone number in internal format, e.g. +493028526...

Save and close the Device menu, then save and close the user setup menu.

Further hints:

- To *edit* a user document, click *Edit User* in the users view. Then change your parameters and exit the edit screen with *Save & Close*.
- You can *delete* a user document in the following way: select a user entry and click *Delete User* to mark it for deletion – then press F9 to delete the user entry (the corresponding device document will also be removed).
- If you have a larger number of users (>25), we recommend to use the provided import agents of the CTI Services database:



The txt file for data import must have the following data format with one record per line:

Username | DeviceID | SiteID | Group

Username: The name of the user (taken directly from your corporate directory).

DeviceID: The ID of your device (which will be monitored)

SiteID: The name of your previously configured SiteID

Group: The group name for forwarding and pickup.

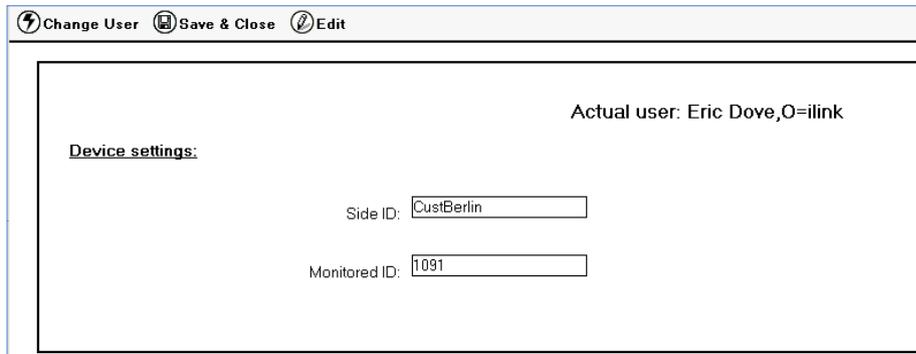
3.3.5. Device changes

As described in the previous section, a device is initially assigned to a user through the *User* settings.

- if you want to display all your configured devices for all your iOffice users, use the *Devices* view.
- in addition, use this view to *change* users phone number/extension

Monitored ID	
▼ CustBerlin	10
1091 ☺	
123 ☺	
1254 ☺	
127 ☺	
127 ☺	
157 ☺	
169 ☺	

Double click on an entry and the current device settings are display. If you want to change the settings, you must *first* click Edit, *then* do your changes. After that, save and close the edit mode and verify your new settings in the Users overview.



The screenshot shows a dialog box with a title bar containing three buttons: "Change User", "Save & Close", and "Edit". The main content area displays "Actual user: Eric Dove,O=ilink" in the top right corner. Below this, the text "Device settings:" is followed by two input fields. The first field is labeled "Side ID:" and contains the text "CustBerlin". The second field is labeled "Monitored ID:" and contains the text "1091".

3.3.6. Phone Number Resolution Service configuration

Select *Phone Number Resolution* to configure Phone Number Resolution service - a new document will open. Note: at this time, we only support one instance of Phone Number Resolution service.

Phone

ilink cti names

Phone Number Resolution Settings:	
Phone Number Resolution ID: ilink cti names	
Caller Identification Method:	<input checked="" type="radio"/> Domino Directory <input type="radio"/> none
Domino Directory Server:	sametime.ilink.de
Domino Directory Name:	ctisuite-names.nsf
Notes View Name:	People_Phone
User Name Field Name:	FullName
Company Name Field Name:	CompanyName
Hostname:	teamcall.ilink.de
Server Port:	26636
Data Exchange Port:	26635
Service Name:	PhoneNumberResolution
Update Interval:	1 <input type="text"/> <input type="button" value="←"/> <input type="button" value="→"/> in hours

Number Resolution ID: Name of your configuration.

Caller Identification Method: At this time, we only support a resolution against Domino directory.

Domino Directory Server: Name/IP address of your Domino server, i.e. your central addressbook which is used by iOffice for name resolution

Domino Directory Name: Name of the Notes database, default is names.nsf.

Notes View Name: Name of the Notes view used to access contact names and phone numbers (default: "People_Phone"). See below for information on how to set up this view.

User Name Field Name: Item in user's document in which the full username is configured, default is FullName.

Company Name Field Name: Field name of company name (in names.nsf the field name is company).

Hostname: Host name/IP address of the server where iOffice/Phone Number Resolution Service is installed.

Server Port: Server port used for Phone Number Resolution service, default is 26636.

Data Exchange Port: Port for data exchange between iOffice Communicator and Phone Number Resolution Service, default is 26635.

Service Name: Name of this service, default is PhoneNumberResolution.

Update Intervall: Time frame for reading PNR configuration settings.

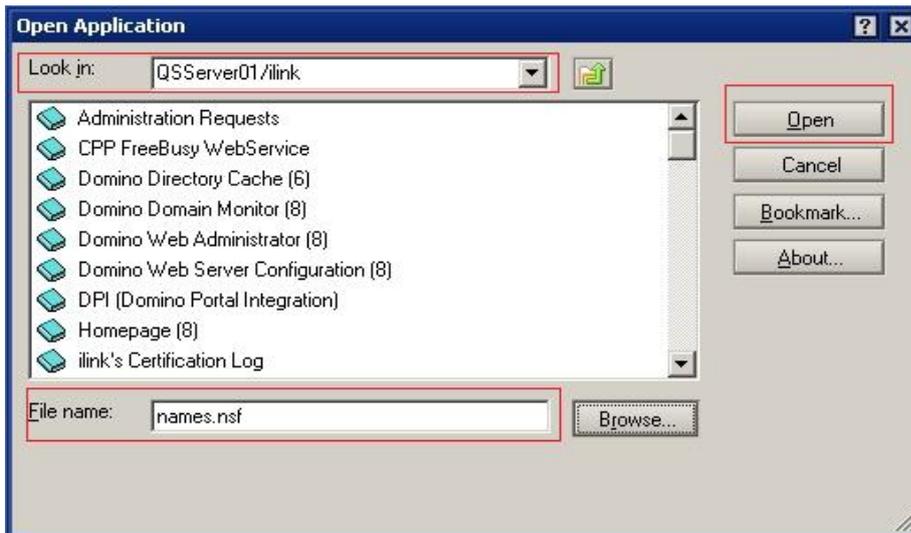
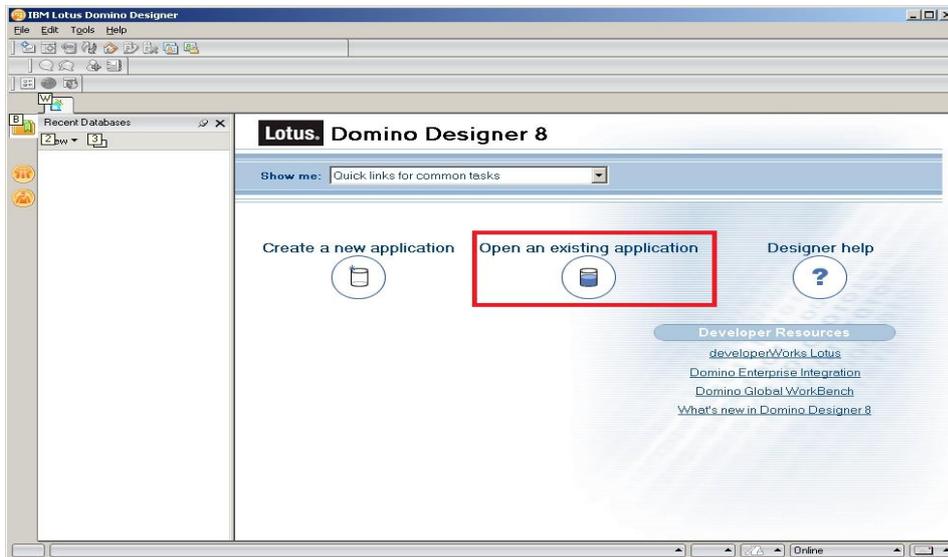
After setting up the service parameters click Copy View to enable the Domino directory for Phone number resolution. Click *Save & close*. Now, services must be configured to get access to Sametime server; see *chapter 5.4.4 Configuration of Service Activator*.

3.3.7. Set up the People_Phone view

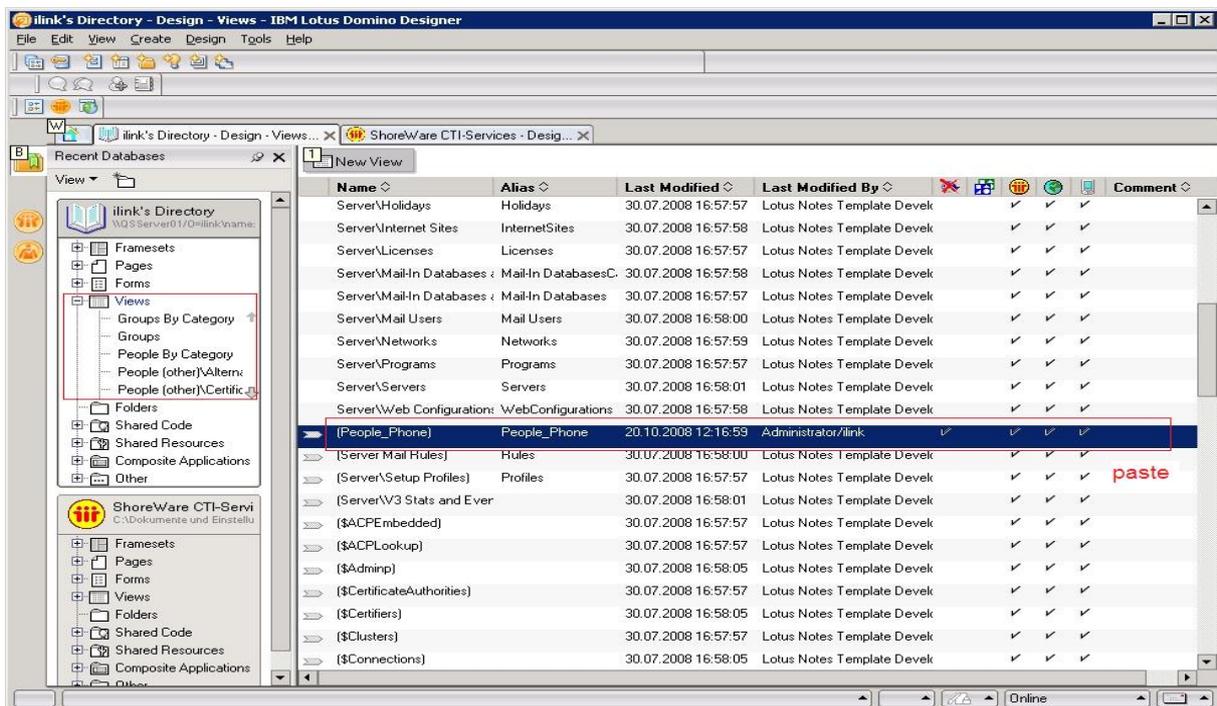
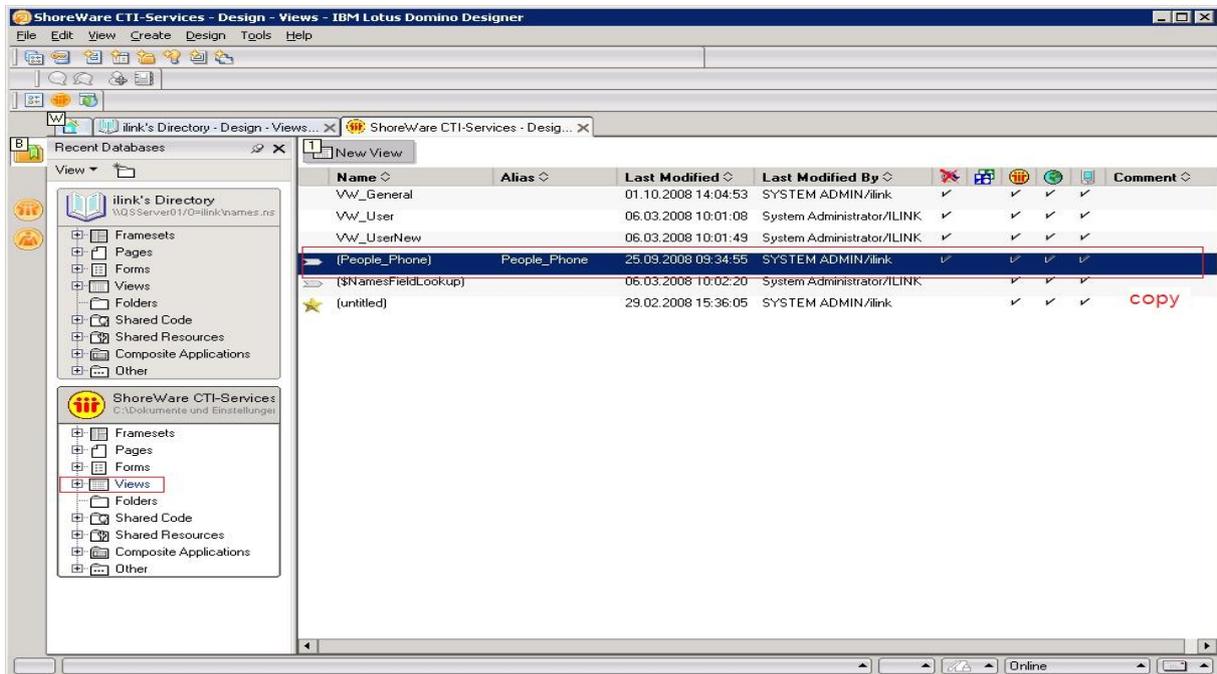
iOffice Communicator uses the Notes view configured above, e.g. *People_Phone* for phone number resolution, so an appropriate view needs to be set up in your Notes database (e.g. in *names.nsf*).

iOffice Communicator's Notes database *ctiservices.nsf* contains a *People_Phone* example view which can be copied as follows to your Notes database:

Open both databases (*ctiservices.nsf* and *names.nsf*) in Domino Designer:



Copy the Notes view *People_Phone* from *ctiservices.nsf* into *names.nsf* on your Domino Server:



Now resign your *names.nsf* with your preferred certifier (e.g. your Admin user). After a view update of your *names.nsf*, you will be able to use the Phone Number Resolution Service. To update the Notes views in your *names.nsf*, open *names.nsf* with a Notes client and press **STRG + Shift + F9**.

The following two fields will be used for phone number resolution:
OfficePhoneNumber
CellPhoneNumber.

3.3.8. Service Activator configuration

Select *Edit Activator Settings* in the navigation panel to set up iOffice Communicator Service Activator:

Activator Settings:

Server address:

Server RMI Port:

Server Exchange Port:

Server Update Port:

Service Name:

Server address: Name or IP address where the Service Activator is installed on the JBoss server

Server RMI Port: Server port to use for Phone Number Resolution, default is 26637

Server Exchange Port: Port for data exchange, default is 26638

Server Update Port: Port for update port, default is 59499

Service Name: Service name, default is ServiceActivator

3.3.9. Call History Service configuration

Select "Edit Call History Settings" in order to configure the Call Journal Service:

Journal Service:

Journal Service Host:

Journal Service Port:

Exchanger Service Port:

Journal Services Name:

Web Journal Service LDAP Server Host:

Web Journal Service LDAP Server Port:

Journal Service RMI Host: Host name/IP address of server where iOffice Call History/Journal Service is installed

Journal Service Port: RMI port of the service, default is 26641

Exchanger Service Port: Data exchange port used of RMI service, default is 26642

Journal Service Name: Service name of iOffice Call History/Journal, default is JournalService

Web Journal Service LDAP Server Host: IP address or name of your LDAP directory service host.

Web Journal LDAP Server Port: Port of your LDAP directory service, default is 389

3.3.10. Call Forward Service configuration

Finally, select "Edit Forwarding Settings" to set up the Call Forward service for iOffice Communicator:

Forwarding Settings:

Server address:

Server Port:

Server address: Host name/IP address of server where the Call Forward Service is installed

Server Port: Port of the forwarding service, default is 80.

4. Plugin configuration and distribution to clients

4.1. Sametime managed settings for iOffice plugins

iOffice Communicator plugins for Sametime standalone clients are customized through Sametime managed settings and using a Sametime update site.

The following managed settings are important for iOffice Communicator plugins.

4.1.1. Enable ExtendedStatus for telephony presence

```
<settingGroup lastModDate="20150823T101330Z" name="com.ibm.collaboration.realtime">
<setting name="enableExtendedStatus" isLocked="false" value="true"/>
</settingGroup>
```

4.1.2. Display separator for phone number entries in contacts

It's a 2-step procedure:

First, define a separator on the server-side (for your business cards).

Second, use the same configuration for the Sametime clients as well.

If DisplaySeparator (e.g.: `<Detail Id="Telephone" FieldName="mobile,telephoneNumber" DisplaySeparator=" / " Type="text/plain"/>`) in `userinfoconfig.xml` is configured. This separator is used to separate multiple phone number entries in Sametime businesscard when making an outbound calls through Sametime Client/iOC

```
<settingGroup lastModDate="20150823T101330Z"
name="de.ilink.sametime.iofficecommunicator">
<setting name="businessCardNumberSeparatorString" isLocked="false" value=" / "/>
</settingGroup>
```

4.1.3. Configure phone number resolution for iOffice PNR service

This example is for one central address database; optionally, more databases can be configured.

```
<settingGroup lastModDate="20150823T101330Z" name="de.ilink.sut.extensions">
<setting name="PNR.PNRService" isLocked="false"
value="{ID=PNR.PNRService};{Name=PNR};{Type=PNR
Service};{Activated=true};{OpenNotesDoc=NONE};{PNR Server Host=<FQDN/IP
address>}" />
<setting name="de.ilink.sut.extensions.created.directory.ids" isLocked="false"
value="PNR.PNRService"/>
<setting name="de.ilink.sut.extensions.activated.directory.ids" isLocked="false"
value="PNR.PNRService"/>
</settingGroup>
```

4.1.4. Cisco Callmanager only configuration: Alternate Call emulation

For Cisco Callmanager station devices, *Alternate Call with Hold-Retrieve* needs to be emulated. To activate this emulation, a corresponding managed setting has to be added and set to "true":

```
<settingGroup name="de.ilink.sametime.iofficecommunicator"
lastModDate="20150823T101330Z">
  <setting name="emulate.alternate" value="true" isLocked="false"/>
</settingGroup>
```

5. Administration and troubleshooting

5.1. Troubleshooting steps

These are good first steps in troubleshooting iOffice Communicator incidents:

- Are all iOffice Communicator services running? (see section 5.3 below)
- Do error messages in the web based iOffice Admin Console point to the root cause of the problem? (see section 5.4 below)
- Do error messages, Java exceptions, or other unusual content in the iOffice service or client logs point to the root cause of the problem? (see section 5.5 below)

5.1.1. Problem: iOC Admin Console is not available

If the iOffice Admin Console cannot be opened via a web browser, this could point to a problem with the Admin Console (or more generally, with the JBoss application server) or to a network problem.

- Does the JBoss service run? Check Windows services and make sure to refresh the displayed list. If not, see section 5.1.2 below.
- Can the iOffice Admin Console be accessed with a browser that runs on the host on which the JBoss service is running? If so, this points to a network problem (e.g. a firewall change that prevents remote access to the iOffice Admin Console).

5.1.2. Problem: JBoss (ilink J2EE Server) is not available

If the JBoss service does not start or shuts down shortly after having been started, check the following JBoss log files for any error messages, Java exceptions, or other unusual content:

- <JBoss installation folder>\bin\run.log: This is the first log file written by JBoss during startup.
- <JBoss installation folder>\server\default\log\boot.log: This is the second log file written by JBoss during startup.
- <iOC log folder>\jboss\server.log: This is the main log file written by JBoss containing information about all services.
- <iOC log folder>\jboss\iOC-Services*.log: These are the individual service log files.

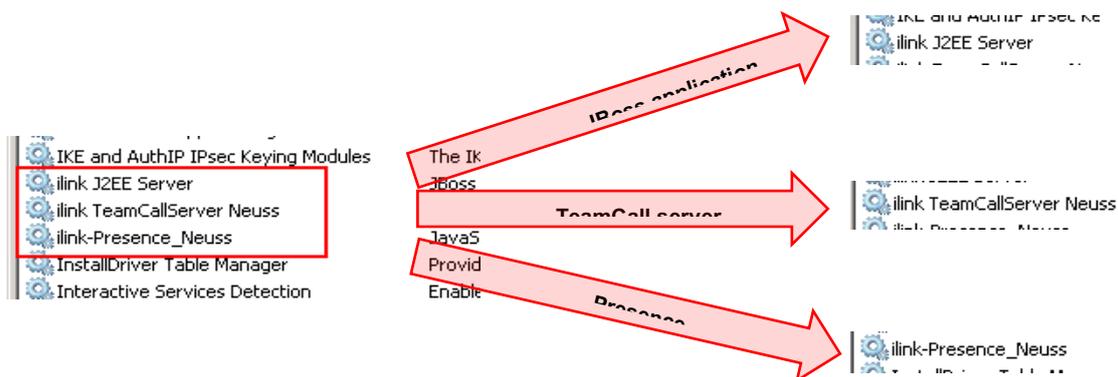
5.2. Monitoring

The first two troubleshooting steps described above can also be used for automated service monitoring or for daily/weekly/monthly system checks:

- Are all iOffice Communicator services running?
(see section 5.3 below)
- Does the web based iOffice Admin Console display error messages?
(see section 5.4 below)

5.3. iOffice Communicator services under Windows

Usually, three iOffice Communicator services are running under Windows: JBoss application server (aka "ilink J2EE Server"), TeamCall server and Telephony Presence service.



If you are running iOffice Communicator for several locations, there may be multiple TeamCall and standalone Telephony Presence services (one each for each location). All services should be in autostart mode in order to support automatic restarts if the CTI host system or VMware image is rebooted.

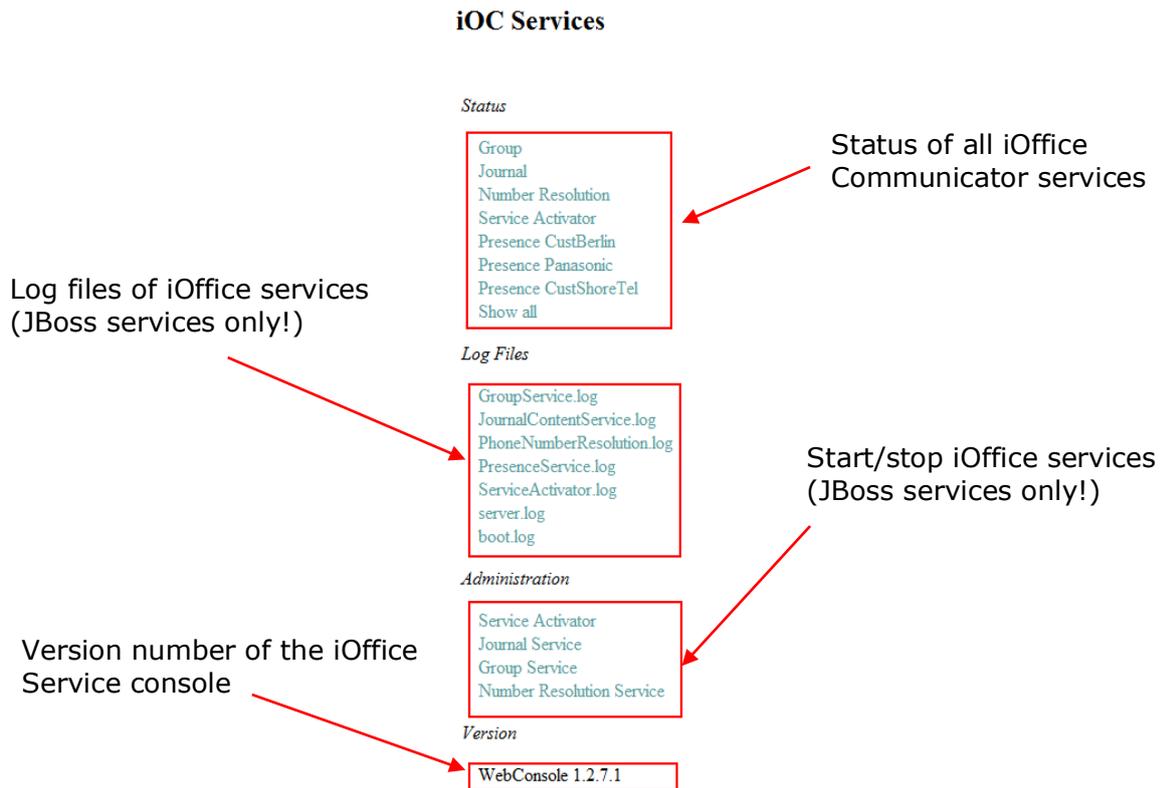
5.4. iOffice Communicator Admin Console

For a more detailed view on iOffice Communicator services, its current connectivity states, as well as detailed system configuration parameters, a browser-based admin frontend is provided.

Use your web browser to access the iOffice Admin Console at:

`http://<IP address or DNS name of CTI host>/iOCServices/`

Your landing page will look like this:



You can now do some drill downs to further inspect iOffice Communicator services. The *Admin Console* displays key/value lists; the key/configuration parameters are in the left column, the current values as read from the service are in the right column.

Example #1:

- The Service Activator has a valid Sametime connection ("OK")
- One user has an invalid configuration (listed under "failed list")
 - > this user can't access any iOffice functions in his Sametime Connect client; check your directory service
- Phone number resolution service is not set
 - > inbound calls are not resolved against Domino or LDAP; only phone numbers are displayed in users call journal and call popup window.

<p>Status</p> <p>Group</p> <p>Journal</p> <p>Number Resolution</p> <p>Service Activator</p> <p>Presence CustBerlin</p> <p>Presence Panasonic</p> <p>Show all</p> <p>Log Files</p>	<table border="1"> <thead> <tr> <th colspan="2">Service Activator Status</th> </tr> </thead> <tbody> <tr> <td>SADominoConnection</td> <td>OK</td> </tr> <tr> <td>SALastConfigUpdate</td> <td>13:12:27 31-05-2012</td> </tr> <tr> <td>SASametimeConnection</td> <td>OK</td> </tr> <tr> <td>SA_CSISConnection</td> <td>NOT SET</td> </tr> <tr> <td>SA_ConfigFailedList</td> <td>[]</td> </tr> <tr> <td>SA_RMIServer</td> <td>OK</td> </tr> <tr> <td>SA_TCP_Server</td> <td>OK</td> </tr> <tr> <td>SA_Version</td> <td>1.2.1.34 (DOMSERACT_Rel_1_2_1_34)</td> </tr> </tbody> </table>	Service Activator Status		SADominoConnection	OK	SALastConfigUpdate	13:12:27 31-05-2012	SASametimeConnection	OK	SA_CSISConnection	NOT SET	SA_ConfigFailedList	[]	SA_RMIServer	OK	SA_TCP_Server	OK	SA_Version	1.2.1.34 (DOMSERACT_Rel_1_2_1_34)
Service Activator Status																			
SADominoConnection	OK																		
SALastConfigUpdate	13:12:27 31-05-2012																		
SASametimeConnection	OK																		
SA_CSISConnection	NOT SET																		
SA_ConfigFailedList	[]																		
SA_RMIServer	OK																		
SA_TCP_Server	OK																		
SA_Version	1.2.1.34 (DOMSERACT_Rel_1_2_1_34)																		

Service Activator Status	
SADominoConnection	OK
SALastConfigUpdate	13:12:27 31-05-2012
SASametimeConnection	OK
SA_CSISConnection	NOT SET
SA_ConfigFailedList	[CN=Jürgen Völkel/O=ilink]
SA_RMIServer	OK
SA_TCP_Server	OK
SA_Version	1.2.1.34 (DOMSERACT_Rel_1_2_1_34)

Phone Number Resolution Service Status	
PNR_DominoConnection	NOT SET
PNR_LDAPConnection	NOT SET
PNR_RMIServer	OK - Running
PNR_SA_RMI_Client	OK - Connected ConfigReceived true
PNR_Version	1.2.0.15 (DOMNAMERES_Rel_1_2_0_15)

Example #2: iOffice cannot monitor four station devices of your PBX

- maybe a typo/these devices don't exist in the switch configuration
- two user configs are valid but directory configuration of two users cannot be resolved
- Telephony Presence Service cannot connect to TeamCall server
-> check Windows Services if TeamCall server is running)

Telephony Presence Status (SideID - Panasonic)	
PS_Activated_Devices	
PS_JCS_RMI_Client	OK - Connected
PS_MonitorFailedList	[113, 109, 101, 102]
PS_ResolveFailedList	[CN=David Gahan/O=ilink, uid=amiersch,OU=MAS-Bilanzen,OU=MAS,OU=ASV,DC=ASV,DC=local/ilink]
PS_ResolvedUser	2 User (show/hide) CN=Frank Elstner/O=ilink CN=Isaac Newton/O=ilink
PS_SA_RMI_Client	OK - Connected Config received true
PS_SiteID	Panasonic
PS_TCSCConnection	Failed - Try create provider
PS_Version	1.2.0.34 (STPresence_Rel_1_2_0_34)

Example #3: one of your users reports iOffice is not working in his client

- optional: check your Sametime policies if that user has iOffice plugins in his Sametime
- check iOffice user database: user exists, a station device is configured
- check iOffice Telephony Presence Service: here you can find the user, he is listed under "ConfigFailedList"
-> iOffice validates its users through your Directory Service. If that configuration is invalid, user is not authenticated and his plugins don't work
-> check user settings in your Directory Service

The screenshot shows a user directory on the left and two status windows on the right. In the directory, the user 'Detlef Neumann, O=igus, C=DE' is highlighted with a red box. A red arrow points from this user to the 'PS_MonitorFailedList' field in the 'Telephony Presence Status (SideID - Koeln)' window, which contains the value '[857]'. Another red arrow points from the user's name to the 'SA_ConfigFailedList' field in the 'Service Activator Status' window, which contains the value '[CN=Detlef Neumann, O=igus, C=DE]'.

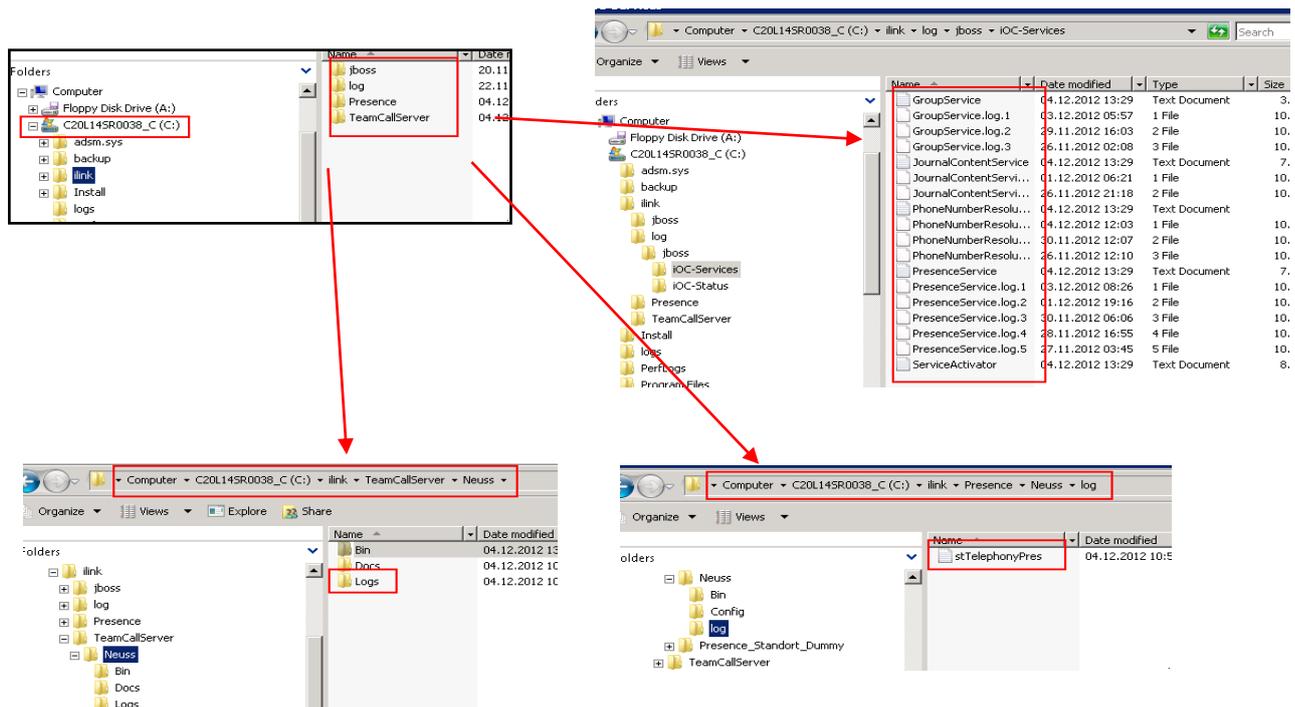
5.5. iOffice Communicator log files

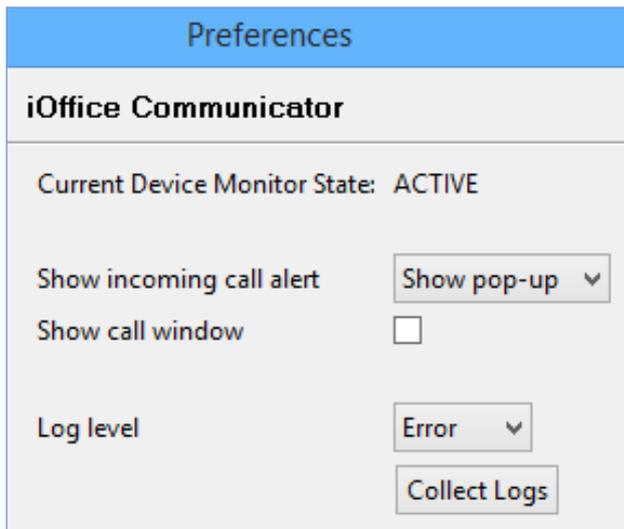
iOffice Communicator generates two types of log files: client logs and server logs. These log files are important, as ilink Professional Services will need these files in order to resolve iOffice Communicator service incidents.

Note: client and server log folders must be excluded from any antivirus software, otherwise malfunctioning of iOffice Communicator services/functions may occur!

- A. Client logs: you can easily save iOffice client logs of a user's Sametime client: open the user's Sametime preferences menu, select iOffice Communicator and click Collect Logs (see screenshot)

-> after a short moment, a popup window will display the file location of saved and zipped iOffice client logs





- B. Server logs: iOffice Communicator saves the log files of its different underlying services in different locations (see second screenshot). Basically, there are three different log categories: TeamCall server logs, Telephony Presence logs and JBoss logs of the various iOffice services running in the application server.

5.6. Configuration of server log files

The TeamCall logs are configured in `bin\Default.conf` within the TeamCall installation folder.

The logs of the JBoss services are configured in `server\default\conf\jboss-log4j.xml` within the JBoss installation folder.

The log of the standalone Presence Service is configured in `config\TelephonyPresence_log4j-config.xml` within the installation folder of the standalone Presence Service.

6. Appendix

6.1. Supported Vendors

Aastra	1xx, 800, 5000, Business Phone, OpenCom X320, OpenCom 510
Alcatel	4x00, Office E, OmniPCX Office, OmniPCX Enterprise
Avaya	AURA Communications Manager, ACM, AES, Definity G3, CS1000, Tenovis Integral i5, i33, i55, i55LX
Cisco	Unified Communications Manager (Call Manager)
Deutsche Telekom	T-Octopus E30, E930, Fxx (ausser F50), T-Octopus Open, T-Comfort Pro S
innovaphone	IP302, IP305, IP800, IP810, IP0010, IP1060, IP3010, IP6010
Mitel	3300 ICP, MD110, MiVoice 5000, MiVoice Business, MiVoice Connect, MiVoice MX-ONE, OpenCom 1xx, OpenCom X320, OpenCom 510
Panasonic	KX-NCP500, KX-NCP500 Express, KX-NCP1000, KX-NS300, KX-NS500, KX-NS700, KX-NS1000, KX-TDA 100, KX-TDA 200, KX-TDE 100, KX-TDE 200
Unify	OpenOffice ME/EE, OpenScape Business S, OpenScape Business X3 / X3R, OpenScape Business X5 / X5R, OpenScape Business X8, OpenScape Office MX/LX/HX, OpenScape

6.2. Vendor Interfaces

Aastra

- CSTA
- SIP

Alcatel

- CSTA
- SIP
- OMNIPCX OPEN GATEWAY (02G)

Avaya

- CSTA
- SIP

Cisco

- Jtapi/TAPI
- SIP
- Cisco Unity Connection Messaging Interface (CUMI) API

Deutsche Telekom

- CSTA
- SIP

innovaphone

- TAPI, SOAP, SDK
- SIP

Mitel

- CSTA, OIG
- SIP

Panasonic

- CSTA
- SIP

Unify

- CSTA
- SIP

6.3. Common default CTI ports for PBX types/vendors

PBX vendor	PBX model	TeamCall pbxType	Default CTI port
Aastra	1xx, 800, OpenCom X320, 510	opencom100	7001
	5000	aastra5000	7001
Alcatel	4200, Office E	a4200	2555
	OmniPCX Enterprise (OXE)	a4400	
	OmniPCX Office (OXO)	omnipcxoffice	
Avaya	AURA, ACM, AES, Definity	definityg3	
	Integral i series	tenovis	
	CS1000	meridian1	3000 (im CA-Nortel)
Cisco	Unified Communications Manager (CUCM)	cisco	
DeTeWe		opencom100	
Deutsche Telekom		hipath3000	8800 or 7001 or 2555
Mitel (Aastra, DeTeWe, Ericsson)	1xx/4xx series/800, OpenCom series, MiVoice 5000, MiVoice MX-ONE		7001 7001 7001 8882
Unify/Siemens	OpenScape Voice/OSV	hipath8000	1040
	OpenScape4000	hipath4000	4690
	OpenScape Business X, S, Office series	hipath3000	8800 880 7001

About ilink

Since 1990 ilink has been developing software solutions and offering products and services for Unified Communications (UC) to our partners and customers.

In addition to our standard UC products for telephony and audio integration, ilink clients especially rely on our software for enterprises and contact centers. With close focus on customer requirements, our individual solutions intelligently link state-of-the-art UC systems in the datacenter and in the cloud.

With 30 years of excellence in the implementation of ambitious projects, ilink delivers outstanding know-how through its strong Professional Services team.

ilink Kommunikationssysteme GmbH is an independent and internationally operating company based in Berlin, Germany, and a dedicated HCL Technologies business partner. You are welcome to contact our smart Professional Services team for further information about our solution *iOffice Communicator for HCL Sametime/Notes*.

Contact

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Web: https://www.ilink.de/en/products/ioffice_communicator_sametime/index.html