

BackStage 8.0

BusinessPhone and MD Evolution Communication Platform

Technical Guide



BackStage 8.0 TECHNICAL GUIDE

EN/LZTBS 102 209/TG R6A

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Welcome

Ericsson is pleased to offer the BackStage communication application, that blends the two worlds of telecommunications and computer networks into one. With the BackStage software, it is possible to project the complete functions of a telephone from the Ericsson BusinessPhone and MD Evolution communication system onto a computer monitor. However, this is not all the monitor-supported telephony, BackStage has to offer. The integration of computer and communication system allows an almost unlimited number of options for more efficiency and productivity at your workplace, e.g. Microsoft Outlook Integration, active Busy Lamp Field or flexible interaction with other programs.

BackStage is an innovative Computer Telephony application, which can also be operated as a Voice-over IP Client.

Apart from traditional telephone functions, BackStage provides a host of convenience functions, such as:

- Group collaboration with freely configurable busy indication
- Customized presence information
- Voice, text, fax and SMS message control
- Integrated telephone directory
- Journal for call information logging
- VIP-routing and communication profile functions
- Microsoft Outlook and Database integration for call number identification and dialing purposes
- Hot key dialing and voice dialing
- Terminal Server compliancy
- Special support for mobility
- Sending and receiving of SMS messages
- Message and Meeting Reminder notification via SMS
- Server based services when BackStage is not active, e.g. backup of user data, active Journal and active Call Profile functions (VIP-routing)
- IP Free Seating in conjunction with IP telephones

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Introduction

This chapter describes the BackStage concept, its requirements and its licensing.

The BackStage concept

Computer Telephony Server and BackStage Client

The BackStage solution represents a typical Server/Client solution which consists of a **Computer Telephony Server** and the **Backstage Client** as such which provides the front end to the user.

In the most commonly used scenarios the BackStage Client is assigned to a telephone. The BackStage Client provides full remote control of the telephone, which increases the telephone functions with an almost unlimited number of options for efficiency and productivity. The BackStage Client can also be configured as Voice over IP softclient which means that it does not need a telephone for normal speech conversations. The microphone and the loudspeaker of the computer where the BackStage Client is installed are used instead.

The number of simultaneously supported BackStage Clients depends on the software license purchased. The software license is stored on a software protection device (WIBU-Box) or on the BusinessPhone system (version 7.0 and higher).

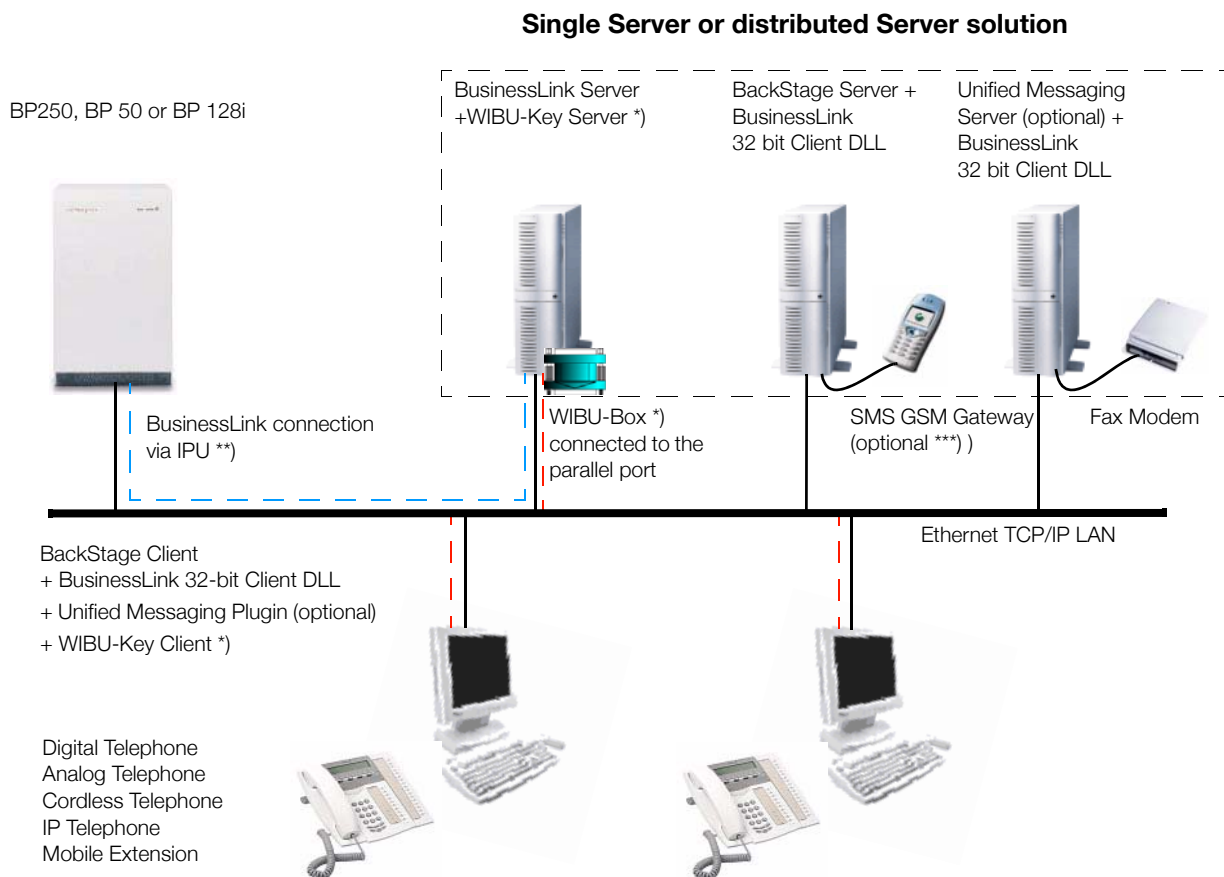
The Computer Telephony Server serves the connection to the PBX as well as the conversion of the PBX specific telephony messages into TSAPI conform messages. The BackStage solution supports the BusinessPhone and MD-Evolution communication platforms which results in different configuration modes with different sets of supported functions (see function overview table in the online Help).

Mode BusinessPhone 1 (BP 1): CT via LAN Control

BusinessPhone and BackStage Client are connected via BusinessPhone BusinessLink (Computer Telephony via LAN - TSAPI industry standard).

The BusinessLink for Windows server is connected to the BusinessPhone exchange via TCP/IP or V.24 connection and provides all TSAPI Client applications in the network with switch data.

The TSAPI Client (BusinessLink for Windows 32-bit Client DLL) is installed on each individual PC, together with the BackStage Client. It serves the TSAPI communication between the TSAPI Client application BackStage and the BusinessLink for Windows server.



*) only relevant for upgraded BackStage solutions (e.g. BackStage 5.1 or 6.0) or in conjunction with BusinessPhone Version 6.0

**) Alternative connection to the BusinessLink via the V.24 (RS 232) port on the CPU-D4/CPU-D5 (recommend port 00000) .

***) The SMS GSM Gateway can also be installed on each Client, if it is intended for personal use.

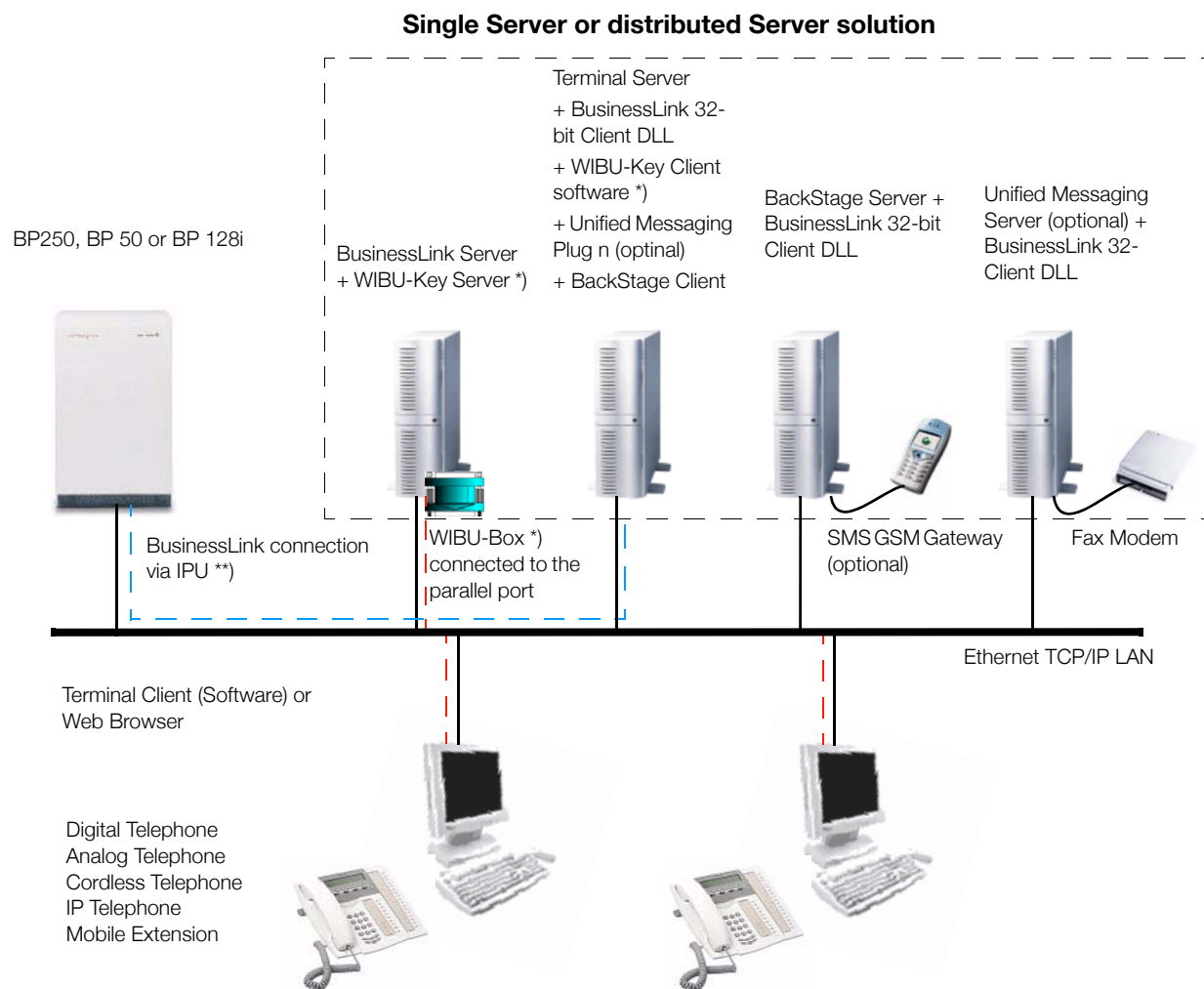
Mode BusinessPhone 1 @ Terminal Server: CT via LAN Control (Terminal Server)

The BusinessLink Client and the BackStage Client are installed on the Terminal Server PC only.

Different users can access the application via:

- Terminal Client (a Software; installed on the Terminal Client PC)
- Web Browser (an additional program at the server side is needed)

When a user executes the BackStage Client application **Client.exe** on the Terminal Client PC, then BackStage will create a new user directory (individually for each Terminal Client) and copy all data files into it (the first time starting). Each BackStage Client user will access its own data files in its own directory on the Terminal Server PC.



*) only relevant for upgraded BackStage solutions (e.g. BackStage 5.1 or 6.0) or in conjunction with BusinessPhone Version 6.0

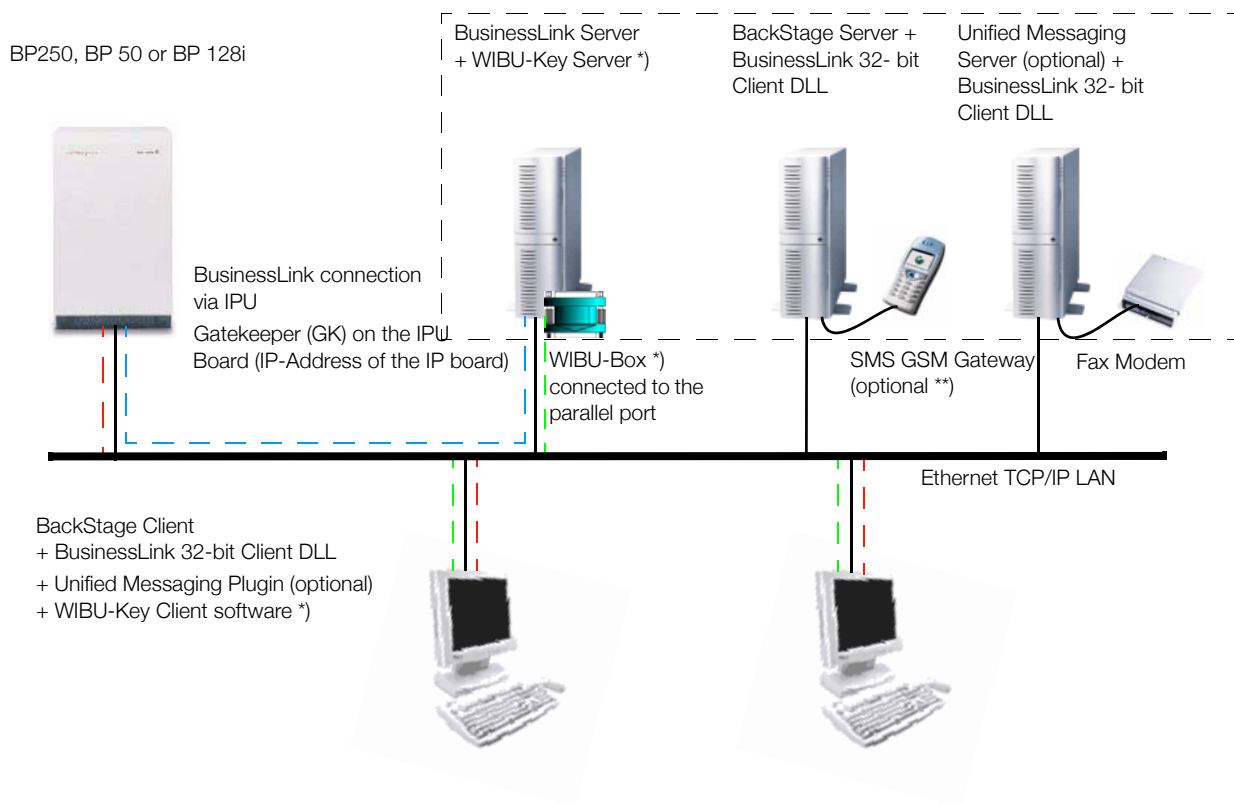
**) Alternative connection to the BusinessLink via V.24 (RS 232) port on the CPU-D4/CPU-D5 (recommend port 00000)

Mode BusinessPhone 2 (BP2): CT and VoIP - directly via IP board

For the following configuration mode the BackStage Client uses the VoIP protocol in combination with the TSAPI-protocol:

- VoIP protocol: For telephone calls directly via the LAN network using PC sound card and headset. The Backstage Client communicates via H.323 TCP/IP connection and the IPU board of the BusinessPhone exchange.
- TSAPI protocol: For additional telephony functionality and for the Busy Lamp Field.

Single Server or distributed Server solution



*) only relevant for upgraded BackStage solutions (e.g. BackStage 5.1 or 6.0) or in conjunction with BusinessPhone Version 6.0.

**) The SMS Gateway can also be installed on each Client, if it is intended for personal use.

This configuration provides a VoIP Client with full telephony functionality.

NOTE BackStage can be connected to multiple IPU boards. For more information regarding this option, see "[VoIP tab](#)" on page 53.

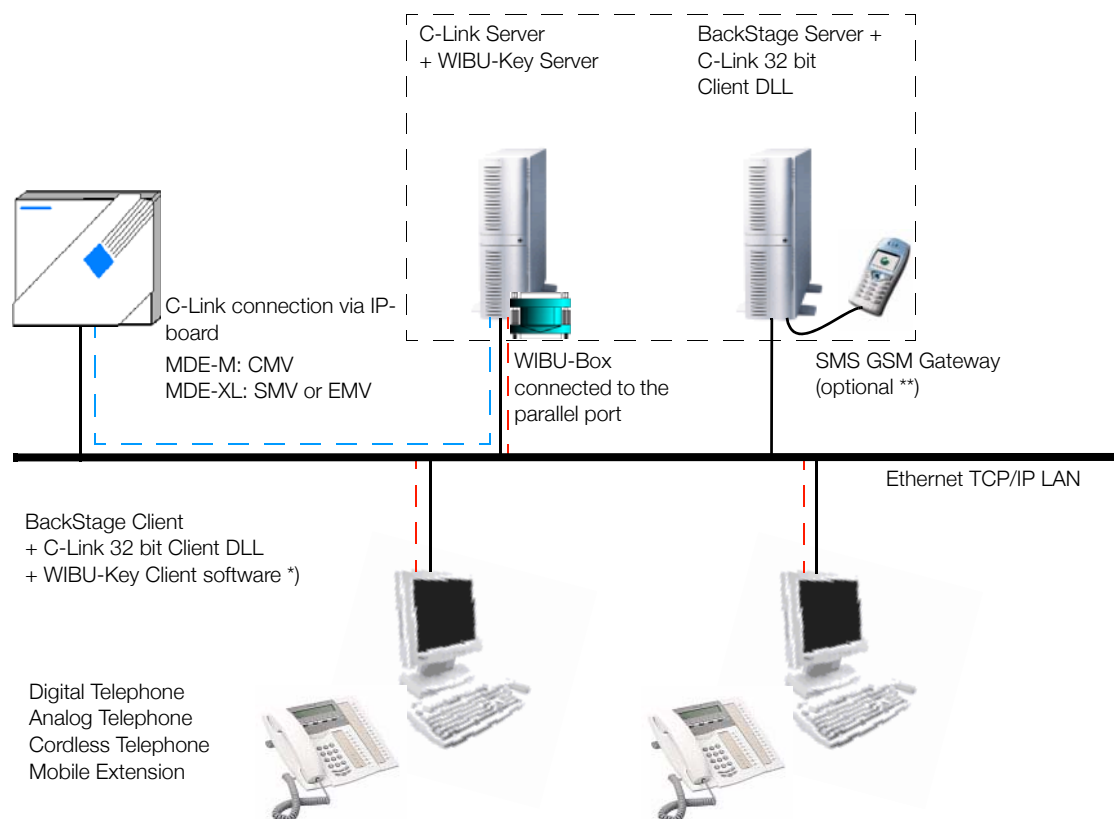
Mode MD Evolution 1 (MDE 1): CT via LAN Control

The MD Evolution and the BackStage Client are connected via the C-Link (Computer Telephony via LAN - TSAPI industry standard).

The C-Link for Windows server is connected to the MD Evolution exchange via the IP board and a TCP/IP connection and provides all TSAPI Client applications in the network with switch data.

The TSAPI Client (CSTA32.DLL) is installed on each individual desktop PC, together with the BackStage Client. It serves the TSAPI communication between the TSAPI Client application BackStage and the C-Link for Windows server.

Single Server or distributed Server solution



*) installed automatically together with the BackStage Client.

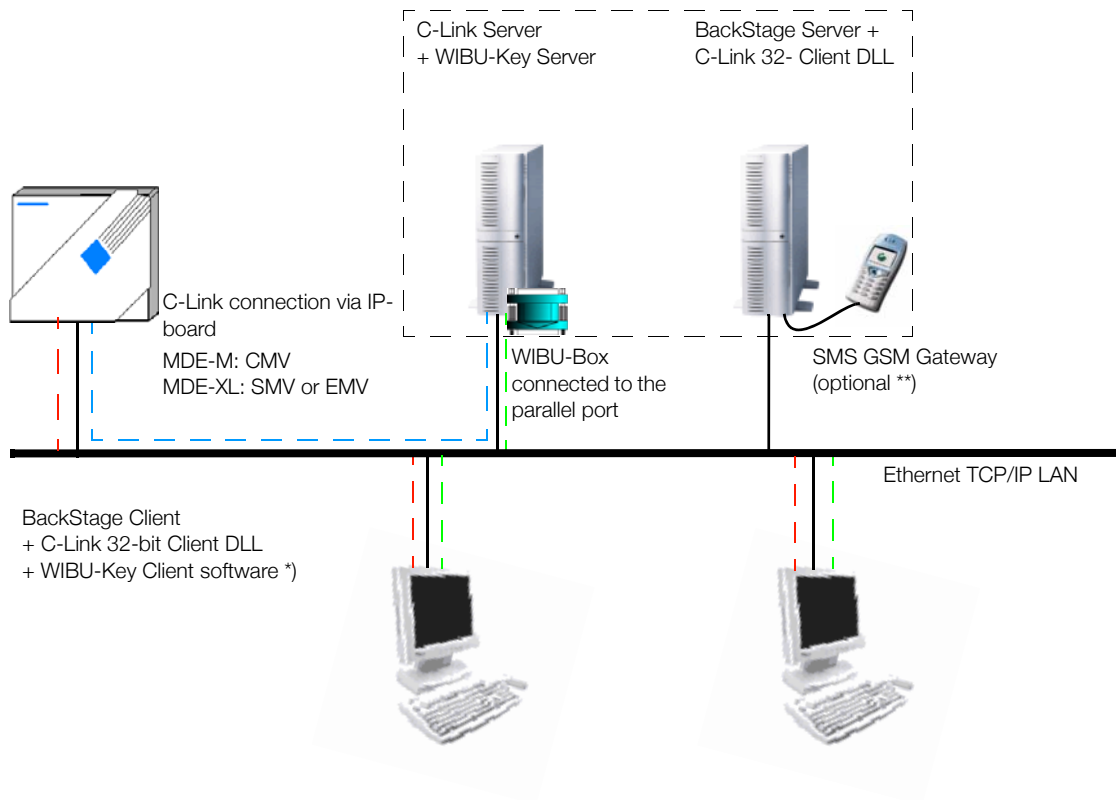
**) The SMS GSM Gateway can also be installed on each Client, if it is intended for personal use.

Mode MD Evolution 2 (MDE 2): CT and VoIP - directly via IP board

For the following configuration mode the BackStage Client uses the VoIP protocol in combination with the TSAPI-protocol:

- VoIP protocol: For telephone calls directly via the LAN network using PC sound card and headset. The Backstage Client communicates via H.323 TCP/IP connection and the IP board of the MD Evolution exchange.
- TSAPI protocol: For additional telephony functionality and for the Busy Lamp Field.

Single Server or distributed Server solution



*) installed automatically together with the BackStage Client.

**) The SMS GSM Gateway can also be installed on each Client, if it is intended for personal use.

Mode MD Evolution 1@ Terminal Server: CT via LAN Control

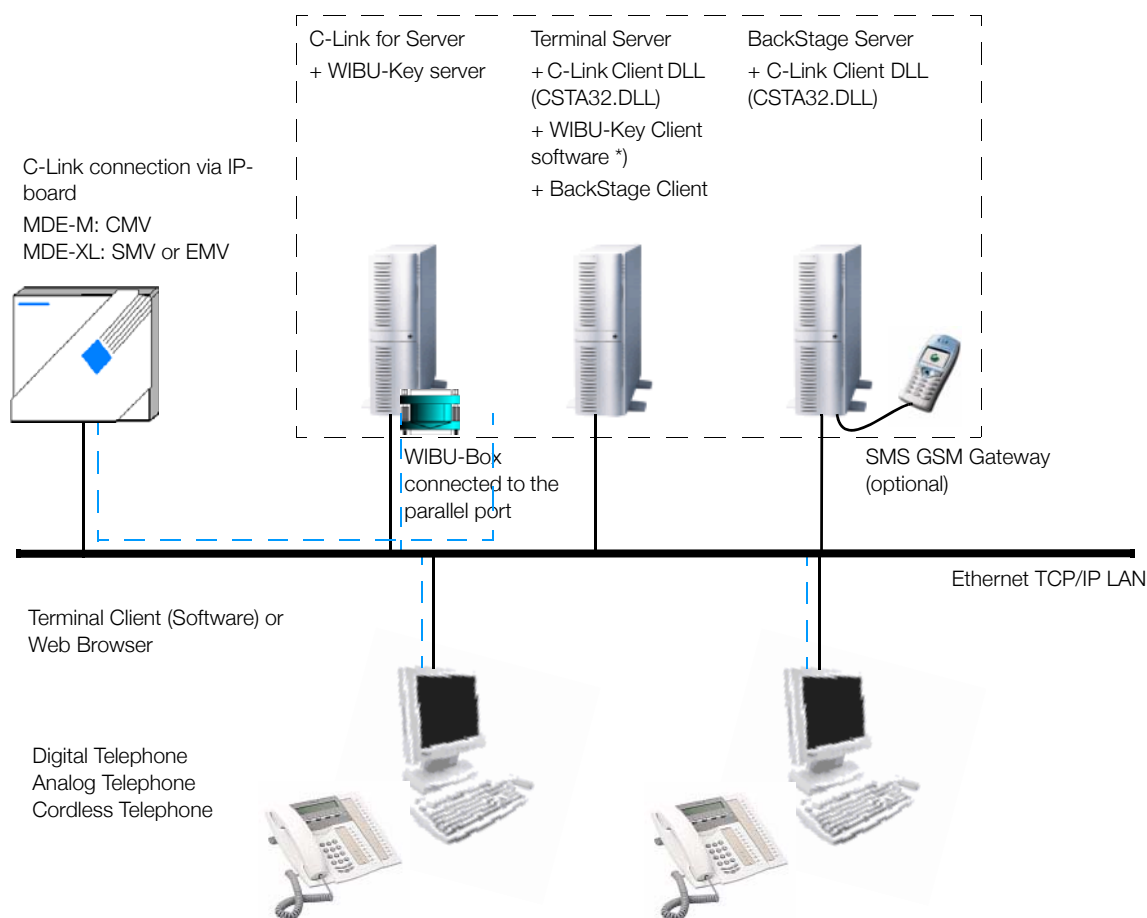
The C-Link Client and BackStage Client are installed on the Terminal Server PC only.

Different users can access the application via:

- Terminal Client (a Software; installed on the Terminal Client PC)
- Web Browser (an additional program at the server side is needed)

When a user executes the BackStage Client application **Client.exe** on the Terminal Client PC, then BackStage will create a new user directory (individually for each Terminal Client) and copy all data files into it (the first time starting). Each BackStage Client user will access its own data files in its own directory on the Terminal Server PC.

Single Server or distributed Server solution



*) installed automatically together with the BackStage Client.

BackStage Server

Apart from the interworking with the Computer Telephony Server, the BackStage Client interworks with the BackStage Server providing the following functions:

- **Provision of user settings**
The local user settings are always synchronized between the BackStage Client and the BackStage Server. This essentially means that, regardless of the device (computer) used to log on, the personal BackStage user settings are always available. This is also one of the prerequisites for Free Seating – access from anywhere. For instance, a computer pool can be defined in which BackStage is installed. The user can then log on from any computer in the pool or any respective desk and his/her individual BackStage settings will be provided.
- **Provision of Journal**
The user's Journal data is stored twice, once on the BackStage Server and once on the BackStage Client. This means that the journal data will be continuously logged even if the Backstage Client is not running or the computer is switched off.
- **Provision of Call Profile**
The Call Profiles (routing tables, diversion settings, function settings, presence info and so on) are always synchronized between the BackStage Client and the BackStage Server. This means that Call Profiles will be active even if the Backstage Client is not running or the computer is switched off. The Call Profile execution depends on the setting of the BackStage Client (always, if the Client is logged off or if the Client is logged on)
- **Central SMS GSM Gateway**
The BackStage Server provides a central SMS Gateway interface to send individual, notification or reminder SMS messages to GSM mobile phones or residential phones (provider-dependent) as well as to receive SMS Messages for remote call profile control. This is either done via a connected GSM mobile equipment (GSM mobile phone or Fixed Cellular Terminal (FCT)) or via an "E-mail to SMS" Gateway.
- **Multi site Busy Lamp Field**
In conjunction with the multi Computer Telephony Server support, the BackStage Server provides a multi site Busy Lamp Field to all BackStage Clients. The Client has the possibility to select the desired Computer Telephony Server for each Busy Lamp Field entry. This feature increases the Client's personal and group efficiency – it improves the way the Client can interact with other extensions belonging to its own communication system as well as extensions belonging to another BusinessPhone or MD Evolution communication system in the corporate network configuration.
- **Presence information**
The BackStage Server has full control of the BackStage Clients' online status as well as their presence information settings. Both information types are provided to the Clients in the Multi site Busy Lamp Field, the latter one also during the call setup.

- BusinessPhone and Central phonebook

The BackStage Server provides enhanced central directory interface -

- to the BusinessPhone/BMS (SQL/MDSE) database
- to a LDAP Server or to a comma separated Text File

Once a connection to a phonebook is defined, these phonebooks are available to all BackStage Clients in form of a separate tab in the phonebook menu.

- Provisioning of available hotfixes to the Clients

In case of a PBX network configuration, the BackStage Server only needs to be installed once and it can serve multisites respective multi Computer Telephony Servers.

Unified Messaging Server (BusinessPhone only)

The Unified Messaging Server is **optional** and provides following functionality:

- Retrieving of BusinessPhone messages (voice, text or call-back) via the BackStage Client Journal and MS Outlook and Lotus Notes.
The listening to the voice messages can take place via the telephone or via the PC loudspeaker, in the latter case an IPU board is required in the BusinessPhone system.
- Sending and receiving of Fax messages.

For further information please refer to the dedicated technical documentation which is also available on the Enterprise Application Suite CD-ROM.

Requirements

Communication Platform

	BackStage and BusinessPhone		BackStage and MD Evolution		Terminal Server Environment
System setup	Computer Telephony via LAN BusinessLink	Voice over IP and Computer Telephony	Computer Telephony via LAN C-Link	Voice over IP and Computer Telephony	same as for Computer Telephony via LAN
Communication Platform(s)	BP7.0, BP 8.0	BP7.0, BP 8.0	MDE R6.0C or higher	MDE 7.0 or higher	
Additional Hardware	IPU (for direct IP connection instead of V.24 connection)	IPU	MDE-XL: SMV or EMV MDE-M: CMV		
Licenses	BackStage: WIBU-Key or BusinessPhone BackStage License BusinessPhone: Basic License UM License (optional)	BackStage: WIBU-Key or BusinessPhone BackStage License BusinessPhone: IPU License Basic License UM License (optional)	BackStage WIBU-Key MDE-XL: FALBS 101 12/4 MDE-M: FALBS 101 05/4		
Communication Links	BusinessLink 3.2	BusinessLink 3.2	C-Link 1.0.8 or higher		
System Capacity	80 users per per BusinessPhone system		80 users per per MD Evolution system		
Telephones	Digital system phones, Cordless, Analog and IP phones, IP softclients, Mobile Extensions.	PC. Micro/speaker or headset. Full duplex soundcard. Webcam (optional)	Digital system telephones, Cordless and Analog phones, Mobile Extensions.	PC. Micro/speaker or headset. Full duplex soundcard. Webcam (optional)	

PC/Operating system requirements

	BackStage and BusinessPhone		BackStage and MD Evolution		Terminal Server Environment
PC requirements	Computer Telephony via LAN BusinessLink	Voice over IP and Computer Telephony	Computer Telephony via LAN C-Link	Voice over IP and Computer Telephony	
Processor	CT Server/ BS server: 350 MHz				according to the number of users
	BS Clients: 350 MHz	BS Clients: 1,5 GHz	BS Clients: 350 MHz	BS Clients: 1,5 GHz	
RAM	CT Server/ BS server/ BS Clients: 256 MB				typical 10 MB/user
Free harddisk space	CT Server: 10 MB BS Server/Client: 100MB				typical 2 MB/user
Supported operating systems	CT Server: Win NT4.0 SP4, 2000 SP1, 2003 BS server: Win 2000 SP1 + .NET Framework 1.1, Win 2003		CT Server: Win NT4.0 SP4, 2000 SP1, 2003 BS server: Win 2000 SP1+ .NET Framework1.1, Win 2003		Terminal server: Win 2000 user access devices: various platform support, according to Terminal Server specification
	BS Client: Win ME, NT4.0 SP4, 2000 SP1, XP	BS Client: Win XP	BS Client: Win ME, NT4.0 SP4, 2000 SP1, XP	BS Client: Win XP	
Applications	MS Office 2000, MS Office XP, MS Office 2003, MS Internet Explorer 5.0 SP2				
Interfaces	CT Server: 1 free serial port in case of V.24 connection to BusinessPhone, TCP/IP connection BS Server: 1 free serial or USB port when using the central GSM SMS gateway function BS Client: 1 free serial or USB port when using the personal GSM SMS gateway function		BS Server: 1 free serial or USB port when using the GSM SMS gateway function BS Client: 1 free serial or USB port when using the personal GSM SMS gateway function		same as Computer Telephony via LAN
Optional GSM SMS gateway	Any GSM mobile phone or FCT unit which supports the AT modem command set according to ETSI Standard GSM 07.05 + a serial or USB connection to a PC				

Used abbreviations:

BS Server	BackStage Server
BS Client	BackStage Client
CT Server	Computer Telephony Server

Software Licensing & Demo Mode

BackStage License

A Software License controls the number of the simultaneously connected BackStage Clients. There exist two licensing solutions:

- Hardware key based licensing based on © WIBU-Key

The Hardware key based licensing consists of:

- Software protection device (WIBU-Box)
- Software licensing software (WIBU-Key Software)

The supplied WIBU-Box must be connected to a parallel interface of any PC in the LAN, which acts at the same time as Software licensing server (WIBU-Key Server). To be able to access the WIBU-Box, it is necessary to install specific drivers on the PCs. The drivers are divided in a Server part (only valid for one PC) and a Client part.

For a detailed description of the Hardware key based licensing please refer to the separate document called **Enterprise Software Licensing** (see related menu item of the Enterprise Application Suite CD-ROM intro).

- BusinessPhone Software based licensing

Together with BusinessPhone Version 7.0 the software key based licensing concept is replacing the WIBU-Key (hardware key) licensing for BackStage for new sales.

For upgrade purposes the WIBU-Key licensing will be continued as well as it can co-exist with the new licensing concept (both licenses are available to the applications).

The license handling towards BackStage is done via the BusinessLink Server, which has full information about:

- Remaining trial time in BusinessPhone
- License updates in BusinessPhone (importing a new license file)
- Total available BackStage licenses
- Currently free BackStage licenses

For a detailed description of the BusinessPhone Software based licensing please refer to the Maintenance Instruction which is part of the BusinessPhone **Documentation Suite** CD-ROM.

Every new installed or upgraded BusinessPhone system offers a 1440h (60 days) trial period for all of the 80 BackStage users. The trial period starts after a BusinessPhone coldstart or after a BusinessPhone software upgrade (e.g: Version 7.0 to Version 8.0).

Furthermore 2 reference BackStage users are available in the standard Basic License file of every BusinessPhone 6.0 (or higher) system.

This means no extra BackStage Product Packages (Licenses) have to be purchased for trial and reference purposes.

If BackStage is installed without any licensing solution, the application switches automatically to the demo mode. The demo provides access to most of the BackStage functions, however the application will be closed automatically after every 1000 seconds and has to be restarted again.

Regarding license steps and related article numbers please refer to the ordering information of BusinessPhone and MD Evolution.

Unified Messaging License (BusinessPhone only)

In order to retrieve BusinessPhone messages (Voice, Text or Call-back) as well as Fax messages via the BackStage Client Journal from the Unified Messaging Server, separate Unified Messaging Licenses have to be installed in the BusinessPhone. The number of these optional licences depends on the number of users who have a need of this feature. Regarding license steps and related article numbers please refer to the ordering information of BusinessPhone.

Installation

Before installing BackStage, make sure that the requirements have been met.

This chapter describes:

- [System specific installation](#)
- Procedures for [Basic installation](#)
- [Optional installations](#)

System specific installation

BusinessPhone

BusinessLink for Windows

Before you install the BackStage Solution for Computer Telephony via LAN you have to install and configure the BusinessLink for Windows software.

The BusinessLink for Windows software is split up into a Server and a Client part. The BusinessLink for Windows Client DLL (CSTA32.DLL) has to be installed on each **BackStage Client** as well as on the **BackStage Server**.

- 1 Insert the Enterprise Application Suite CD-ROM into the dedicated drive.
- 2 Use the following path in the CD-menu to enter the BusinessLink Server and BusinessLink Client section
Installation > BusinessLink for Windows
- 3 To view the installation instructions of the BusinessLink Server and Client applications click on **View technical guide**
To install the BusinessLink Server and BusinessLink Client use the dedicated menu item.
- 4 Read out the Computer name of the BusinessLink Server and write it down on a piece of paper as it is necessary for the BackStage Server installation.

BusinessPhone Setup

Verify the following parameters of your BusinessPhone setup according to the required configuration mode:

Mode BP1:

command	description	value
0117	Authority code	activated, default or activated, programmend
0155	Disable call state message to line?	Yes

Mode BP2:

command	description	value
0117	Authority code	activated, default or activated, programmend
0155	Disable call state message to line?	Yes
0701	Registration password (if desired)	enter the assigned password

For Call Information via the BusinessLink Server and the BackStage Server the following commands need to be set in addition

command	description	values for Channel1
6401	Initiate I/O ports ?	Must be equal to the BusinessLink port which is defined by command 8901
6402	Activate I/O ports ?	Enabled
6403	Format table	Call CTI (out)

MD Evolution

C-Link

Before you install the BackStage Solution for Computer Telephony via LAN you have to install and configure the C-Link for Windows software.

The C-Link for Windows software is split up into a Server and a Client part. The C-Link Client DLL (CSTA32.DLL) has to be installed for each **BackStage Client** as well as on the **BackStage Server**.

Please refer to the C-Link for Windows - product CD-ROM (*FASBS 102 319*) for detailed information on how to install it.

Software Licensing

BusinessPhone Licensing

To use the BusinessPhone Licensing no additional installation has to be done however BackStage Licenses have to be available in BusinessPhone.

Licenses are available in the following states:

- 80 BackStage Licenses are available during the trial time of BuinessPhone
- 2 BackStage Licenses are available when the Basic License is installed
- 7-80 BackStage Licenses are available if ordered by the dedicated article number and installed in BusinessPhone.

WIBU-Key licensing

The supplied WIBU-Box has to be connected to the parallel interface of the Computer Telephony Server, which acts at the same time as WIBU-Key Server. To be able to access the WIBU-Box, it is necessary to install specific security drivers on the PC(s). The security drivers are divided in a Server part and a Client part which have to be installed on the BusinessLink Server as well as all BackStage Clients.

For a detailed description of the Software Licensing please refer to the separate document called **Enterprise Software Licensing**. See related menu item of the Enterprise Application Suite CD-ROM intro.

Basic installation

Before installing the BackStage components, make sure that the requirements, described in the chapter “[Requirements](#)” on page 16, have been met and the steps in section “[System specific installation](#)” on page 21 have been performed.

- 1** Log on to the customer’s PC with the Administrator account.
When installing the BackStage Client on Windows NT/2000 workstations or the BackStage Server on a Windows 2000/Windows 2003 Server you have to log on as an Administrator.
- 2** Close all Applications
It is recommended that no other applications are running when you perform the BackStage installation. It is especially important to close the Control Panel, Event Viewer, Microsoft® Outlook™ and other BackStage applications (if previously installed).
- 3** Insert the Enterprise Application Suite CD-ROM into the dedicated drive.
- 4** If the autorun function of your operating system is activated, a special Intro sequence starts automatically after a few seconds. If the autorun function of your operating system is *not* activated, double-click on the file name **Start.exe** in the root directory of the Enterprise Application Suite CD-ROM in your Microsoft® Explorer (in MS Explorer the CD-ROM is called “Ericsson”).
- 5** As soon as the Intro sequence has been fully loaded, you can select the language of the CD-menu. After you have selected the language you can navigate to the required items such as installation or documentation.
- 6** “[Install BackStage Server](#)” on page 25
- 7** “[Install Unified Messaging Server \(BusinessPhone only\)](#)” on page 30, if this option shall be part of the customer’s BackStage solution, otherwise continue with step 8.
- 8** According to the desired configuration mode, collect the necessary computer name for:
 - Computer Telephony Server (TSAPI Server)
 - BackStage Server
 - Unified Messaging Server
 - Gatekeeper (in this specific case the IP-address is required)

- 9 “Install the WIBU-key licensing software” on page 27
(not relevant for new installed BusinessPhone 7.0 systems).
- 10 “Install the BackStage Client” on page 29
- 11 “Install Unified Messaging Client Fax Plugin (BusinessPhone only)” on page 30

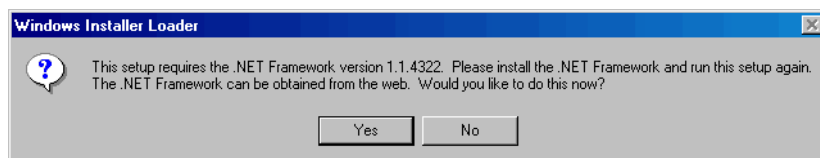
Install BackStage Server

NOTE The BackStage Server always uses the same CT monitor as the Client and does therefore not occupy additional CT resources in the PBX.

- 1 Use the following path in the CD-menu to enter the BackStage Client section:
Installation > BackStage > BackStage Client/Server

- 2 Click on **Start Server installation** to run the installation wizard.

The BackStage Server requires the Microsoft®.NET Framework 1.1 platform, as a component of the Microsoft Windows® operating system. If .NET Framework 1.1 is installed on the customer's PC the setup continues with step 3 otherwise the following information message pops up.



The BackStage and Unified Messaging Mediakit CD-ROM contains an install version of .NET Framework 1.1. Confirm the information message by clicking the **Yes** button, and the .NET Framework setup will be started directly from the CD-ROM.

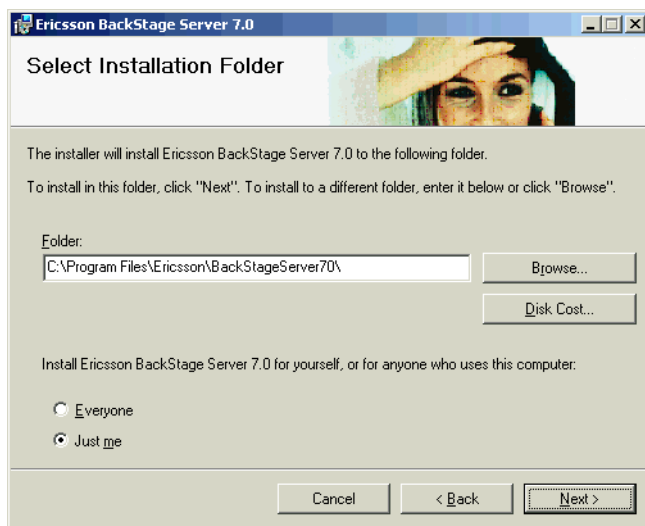
Complete the .NET Framework installation and then start again with step 1.

3 License Agreement



If you accept the terms and conditions of the License Agreement, click the **I Agree** option button.

4 Click the **Next** button to open the **Select Installation folder** window



5 If required, modify the default folder to which the server components shall be installed. Click on the **Disk Cost...** button to verify whether the selected disk drive fulfills the required hard disk space for the installation.

- 6 Click the option button **Everyone** or **Just me** to define whether the server related icons shall be visible in the start menu of all users or just for the administrator. Continue the installation by clicking the **Next** button.
- 7 Complete the installation.
Together with the BackStage Server also two operation and maintenance tools will be installed:
 - BackStage Server Configuration
 - Trace Utility
 Both applications can be accessed via **Start > Programs > Ericsson > BackStage Server 8.0**
- 8 Read out the computer name of the BackStage Server and write it down on a piece of paper as it could be used for the BackStage Client installation.
- 9 For the configuration of the Server see chapter “[BackStage Server configuration](#)” on page 37.

Note: If .NET Framework 1.1 was already installed on your computer before you have started with the BackStage Server installation, it is recommended to perform a Windows update in order to check for any critical update to .NET Framework.

Install the WIBU-key licensing software

NOTE If you only use the two BackStage reference users in conjunction with BusinessPhone 6.0 or higher, it is not necessary to install the WIBU-Key components.

The WIBU-Key Server software has to be installed on that PC in the LAN, which has the WIBU-Box connected (Computer Telephony Server). The WIBU-key Client has to be installed on all BackStage Clients.

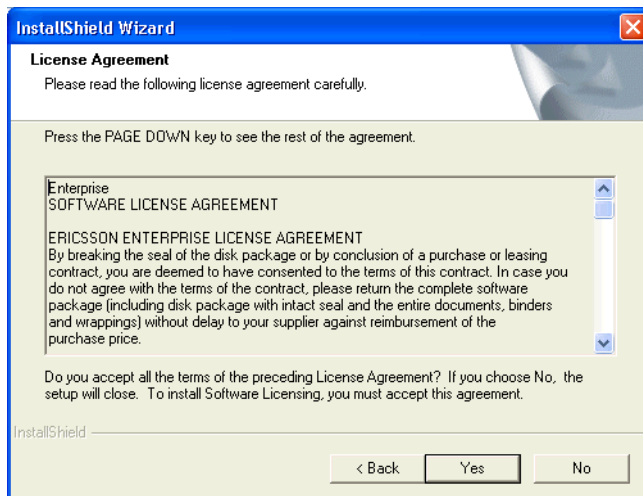
- 1 Use the following path in the CD-menu to enter the WIBU-Key Server section
Installation > BackStage > WIBU-Key Licensing
- 2 To view the instructions on how to install the WIBU-Key Server click on **View technical guide**.
- 3 Click on **View latest installation notes** to get last minute tips.
- 4 Click on **Start Server installation** or **Start Client installation**.

- 5 According to the regional settings in the control panel, the installation menu for the WIBU-Key software starts up in the related language.



Perform a change if required and then click the **Next** button.

- 6 The **License agreement** window for the WIBU-Key software pops up.



If you accept the terms and conditions of the License Agreement, click **Yes**.

The wizard will automatically install all necessary Client files to your hard disk.

- 7 When the installation is completed, you will be prompted to view the Read Me file or to finish the setup immediately. View the Read Me file by clicking on the dedicated check box (checked=view).

Install the BackStage Client

- 1** Use following path in the CD-menu to enter the BackStage Client section
Installation > BackStage > BackStage Client/Server
- 2** To view the latest installation notes in order to get last minute tips, use click on **View latest installation notes**
- 3** Click on **Start Client installation** to run the installation wizard
The Welcome window appears displaying the current version number
- 4** Click on **Next** to open the License Agreement window
- 5** If you accept the terms and conditions of the License Agreement, click the **I Agree** option button and then the **Next** button.
- 6** Follow the instructions of the installation wizard and it will automatically install all necessary files to your hard disk.
- 7** After you have completed the installation see chapter "[BackStage Client configuration on the user's computer](#)" on page 48.

Optional installations

The following installation steps are depending on the customer's need and are therefore not necessarily required for the standard BackStage usage.

Install Unified Messaging Server (BusinessPhone only)

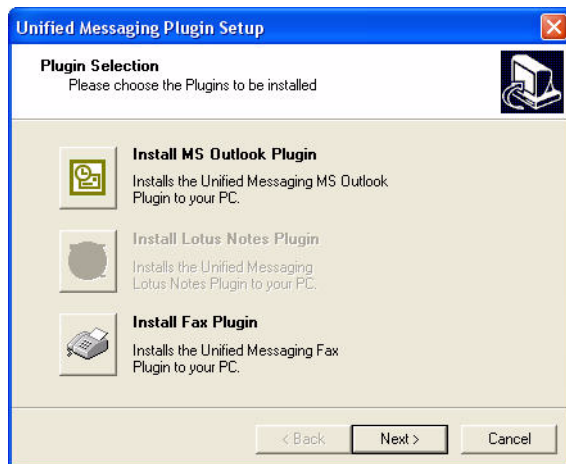
The Unified Messaging Server is required if it shall be possible - apart from the message retrieving via the telephone - also to retrieve the messages via the PC loudspeaker as well as to send and receive Fax messages.

- 1 Use the following path in the CD-menu to enter the Unified Messaging section
Installation > Unified Messaging
- 2 To view the instructions on how to install the Unified Messaging Server click on **View technical guide**
- 3 Click on **View latest installation notes** to get last minute tips.
- 4 Click on **Start Sum Server installation**

Install Unified Messaging Client Fax Plugin (BusinessPhone only)

The Unified Messaging Client Fax plugin is required to send Fax messages.

- 1 Use the following path in the CD-menu to enter the Unified Messaging section
Installation > Unified Messaging
- 2 Click on **View latest installation notes** to get last minute tips.
- 3 Click on **Start Client Plug in installation** to run the installation wizard.



- 4 Click **Next** and follow the instructions of the wizard.

The result of the installation is the Ericsson Fax printer, The Microsoft® Outlook™ Plugin and the Unified Messaging Fax Plugin Configuration tool.

Install SMS GSM Gateway

The SMS GSM Gateway can be connected to the BackStage Server, if it is either intended to be used for common use, or to the BackStage Client if it is intended to be used for personal use.

The Backstage Server and Client are supporting any GSM mobile phone or FCT unit (Fixed cellular terminal unit) which supports the modem AT command set according to ETSI GSM 07.05.

The connection can be done via a serial interface or via an USB-Adapter. In the latter case it is necessary to install the dedicated communication software for proper interworking.

Proceed as follows:

- 1 Install the SIM card used for the GSM Gateway in a GSM mobile phone

Note: If a FCT unit is used, the steps 2-5 have to be performed in a GSM mobile phone before the SIM card can be installed in the FCT Unit.

- 2 Switch on the mobile phone.
- 3 Deactivate the SIM card lock.
The deactivation is necessary in order to guarantee that the mobile phone or the FCT unit always starts up automatically.
- 4 Make sure that the SMS service number of the selected provider is stored on the SIM card and test the SMS function.
- 5 Divert the mobile phone number to the public subscriber number of the customer's PBX.
(*22*<public subscriber number>#). The diversion is necessary in order to secure that in case of an unintentional call back to a sent out SMS, the call will not end up at the gateway, instead it will be routed to the operator of the customer's PBX.
- 6 Connect the GSM mobile phone or FCT unit to a free serial or USB port on the BackStage Server or Client.

Note: When using a GSM mobile phone make sure, that it is permanently connected to the battery charger.

- 7** In case of the USB connection install the manufacturer specific communication software.
After you have installed the communication software please check whether the mobile phone or FCT unit is detected via a (virtual) serial COM port (Control panel > System > Hardware > Device Manager > Ports) as only this type of interface is supported by BackStage.
- 8** Configure the SMS GSM COM port of the BackStage Server (see chapter [“Connection to Applications”](#) on page 74).

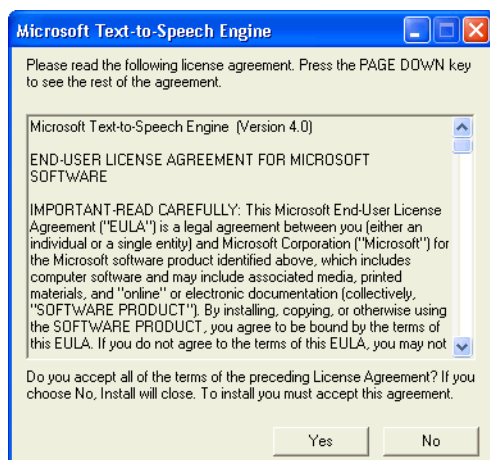
Install the Text to Speech notification and Voice dialing

Additionally to the name display in the BackStage Client main window, the **Text to Speech notification** can be enabled to give a spoken name identification for incoming and outgoing calls. The speech is realized via the Microsoft® Speech API and Speech synthesizer engine, distributed for free on the BackStage & Unified Messaging media kit CD-ROM.

Members of the phone book and of the Busy Lamp Field can be dialed by saying the name (**Voice dialing**).

This is achieved also by using the Microsoft® Speech API and the speech Recognition engine (no extra license cost for the English version).

- 1 Use following path in the CD-menu to enter the Speech functions section
Installation > BackStage > Speech functions
- 2 To view the latest installation notes in order to get last minute tips click on **View latest installation notes**
- 3 Click on **Start MS Speech API installation** to run the setup wizard.
All necessary data will be installed to your hard disk.
- 4 When the installation is completed, continue with the installation of the MS Speech Engine by clicking on the menu item **Start MS Speech Engine installation**.
- 5 The License agreement window for the MS Text-to-Speech Engine pops up.

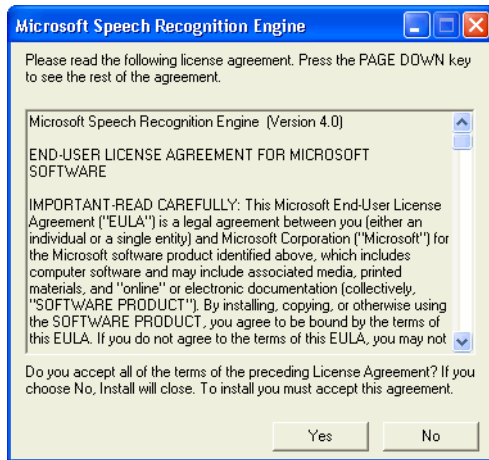


If you accept the terms and conditions of the License Agreement, click **Yes**.

The wizard will automatically install all files to your hard disk.

- 6 When the installation is completed, continue with the installation of the MS Speech Recognition Engine by clicking on the menu item **Start MS Recognition Engine installation**.

- 7 The **License agreement** window for the MS Speech Recognition Engine pops up.



If you accept the terms and conditions of the License Agreement, click **Yes**.
The wizard will automatically install all files to your hard disk

- 8 When the installation is completed, you can enable BackStage to support the Microsoft® Speech technology. Please refer to the following chapters
- Text-to-Speech notification: Refer to the Online Help - section Setup
 - Voice dialing: Refer to “[Voice Dialing](#)” on page 87.

Using BackStage for dialing with Microsoft® applications

The BACKSTAG.TSP driver can be used to provide Microsoft® applications (for example Microsoft® Phone Dialer) with the necessary telephony interface to make internal or external calls.

- **Copy the driver BACKSTAG.TSP from the BackStage Client directory into the System32 directory of the operating system**

The BackStage BACKSTAG.TSP driver has to be selected in the Dialing Properties as follows:

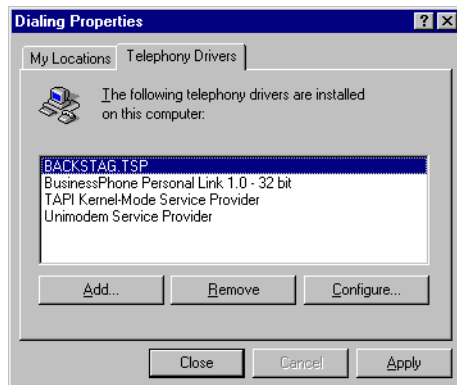
Windows 95/98/ME or Windows NT4.0

- 1 Click the **Start** button, point to **Settings**, and then click **Control Panel**.
- 2 Double-click the **Telephony** icon.



Telephony

- 3 Click the **My Location** tab.
- 4 Modify the dialog box accordingly to your local values.
- 5 Click the **Telephony Drivers** tab.



- 6 Click **Add**. The **Add Driver** dialog box pops up.
- 7 Select *BACKSTAG.TSP* and click **Add**.

NOTE No Configuration settings are required for the BackStage.TSP driver.

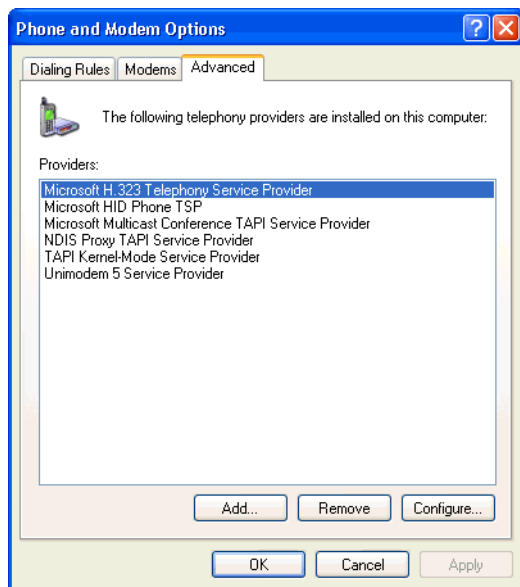
Windows 2000/Windows XP

- 1 Click the **Start** button, point to **Settings**, and then click **Control Panel**.
- 2 Double-click the **Phone and Modem Options** icon:



- 3 Click the **Dialing rules** tab.
- 4 Modify the dialog box accordingly to your local values.

- 5 Click the **Advanced** tab.



- 6 Click **Add**. The **Add Driver** dialog box pops up.
- 7 Select *BACKSTAG.TSP* and click **Add**.

NOTE No Configuration settings are required for the BackStage.TSP driver.

Basic System Setup

This section describes the minimum settings to get the BackStage solution running. All other parameters can be set by the user in the BackStage Client and are therefore only described in the Online Help of the BackStage Client, see section System Setup - Option.

BackStage Server configuration

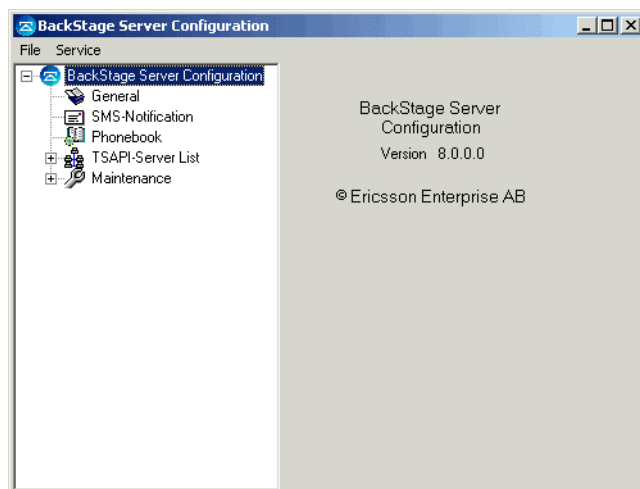
If the BackStage Server is part of the customer's configuration, it has to be setup before any BackStage Client is configured.

To configure the Server, use the BackStage Server Configuration tool.

Proceed as follows:

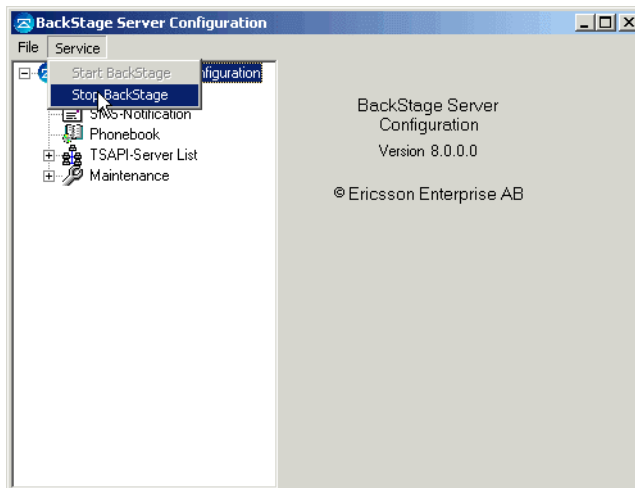
- 1 On the task bar, click **Start**.
- 2 Point to **Programs, Ericsson** and then click **BackStage Server 8.0**
- 3 Click on the menu item **BackStage Server Configuration**

The program starts and the main window opens on your screen



When starting the BackStage Server Configuration for the first time, continue with step 4 otherwise continue with step 5.

- 4 The BackStage Server is running as a Windows service. After the installation of the BackStage Server, the Windows service is not started. When starting the BackStage Server Configuration for the first time, it assumes that a Computer Telephony Server (TSAPI Server) is running on the same PC and sets up a TSAPI Server automatically. This TSAPI Server is configured to detect automatically all BackStage Clients. The automatic setup will probably satisfy to most of the customer configurations, so that the configuration tool can be closed again. If the automatic set up fulfills the customer's needs, continue with step 8 otherwise continue with step 6.
- 5 The BackStage Server is running as a Windows service. Before you perform any modification on the Server you should stop the service.
 - a Click on **Service** in the menubar
 - b Click on **Stop BackStage** in the shortcut menu to stop the service



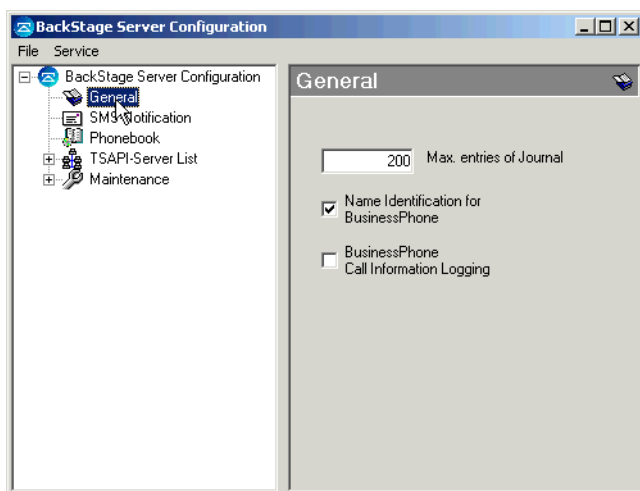
All BackStage Clients will get a warning message that the connection to the BackStage Server has been broken.

- 6 [“General settings”](#) on page 39
- 7 [“SMS-Notification settings”](#) on page 40
- 8 [“Phonebook settings”](#) on page 42
- 9 [“TSAPI Server settings”](#) on page 44.
- 10 Close the application and then proper message dialogs are guiding you through the saving and Windows service reactivating process.

General settings

The General settings comprise settings being common for all the connected Computer Telephony Servers (TSAPI Server).

- Click on the entry **General** in the tree view



Set following parameters:

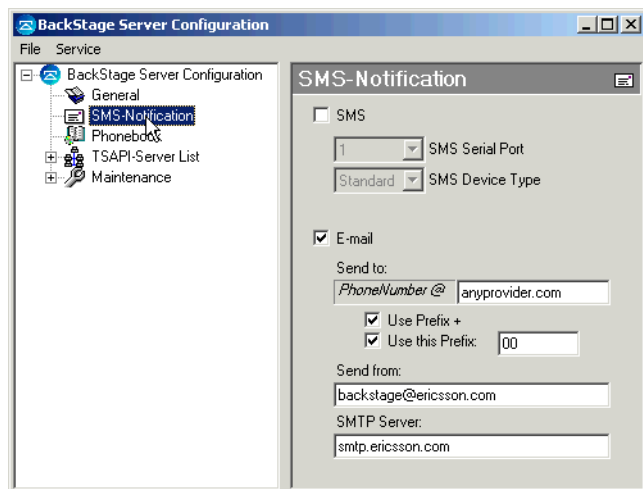
- Maximum entries in the Client's journal.**
 Every time when the BackStage Client has started up and has connected itself to the BackStage Server, all Journal entries of the user will be copied from the BackStage Server to the Client. To minimize the download time as well as the required hard disk space on the server, it is recommended to limit it to a reasonable value (default: 200 entries = 15KB Hard disk space). If the maximum entries are reached in the journal, further incoming entries will always delete the oldest ones.
- Name Identification for BusinessPhone**
 This parameter is used to define whether or not the dedicated names of the numbers stored in the Busy Lamp Field, the Phonebooks and the synchronized Microsoft® Outlook™ Contacts are shown on the System and IP Telephones in case of a number match during an incoming call.
- BusinessPhone Call Information Logging.**
 This parameter is used to define whether or not the call information logging data will be requested from the BusinessLink Server. The Call Information logging data will be stored in a separate text file in the BackStage Server Data directory. The name of the text file is created accordingly to the Computer name of the BusinessLink Servers (e.g. CIL_BSSERVER.txt).

Note: The retrieval of the Call Information logging data requires an adequate programming in BusinessPhone (see "[BusinessPhone Setup](#)" on page 22).

SMS-Notification settings

The SMS-Notification settings comprise the interface definition to a GSM SMS Gateway or an “E-mail to SMS” Gateway.

- Click on the entry **SMS Notification** in the tree view



Set following parameters:

- SMS**

The SMS parameter defines whether or not the SMS notification and the remote Call profile control shall take place via a serial connected SMS GSM Gateway (Mobile phone or FCT Unit). If the check box is checked all dedicated parameters are active as well.

- **SMS Serial port**

The SMS Serial Port parameter defines the serial port on the Server to which the SMS GSM Gateway is connected.

- **SMS Device Type**

The SMS Device Type parameter is used to ensure the proper interworking between the BackStage Server and the manufacturer specific FCT Units. Except for the FCT units provided by Comsat, the default value should match.

- **E-mail**

The E-mail parameter defines whether or not the SMS notification shall take place via an 'E-mail to SMS Gateway'. To use this function you need a SMTP Server in your LAN environment as well as a subscription to an 'E-mail to SMS' gateway provider. If the check box is checked all dedicated parameters are active as well.

- **Send to:**

This parameter states the e-mail address of the provider's 'E-mail to SMS' gateway. The Phone number in front of the @ will be used from the individual BackStage Client settings ('Receiver of SMS' parameter).

- Use **Prefix +** or **Use this Prefix**

These parameters are used to align the "Receiver of SMS" parameter from the BackStage Client with the specification of the "E-mail to SMS" provider.

Example:

BackStage Client setting: +4366.....

Provider specification: 004366.....

BackStage Server setting: Use this Prefix: 00

The parameter **Prefix +** always adds a '+' in front of the Client settings, whereas the **Use this Prefix** parameter allows an individual setting.

- **Send from:**

This parameter states the e-mail address of the BackStage Server. (e.g: backstage@customer.com). This address need not necessarily exist, as it is only required for the SMTP Server which always requires a sender address in an e-mail.

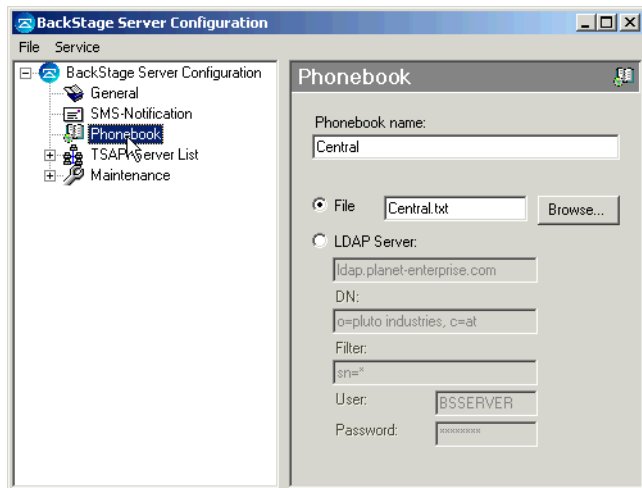
- **SMTP Server:**

This parameter defines the address of the SMTP Server, which is used to send the e-mail to the 'E-mail to SMS' provider.

Phonebook settings

The Phonebook settings comprise the definition of the Central Phonebook. When a Central Phonebook is set and found by the BackStage Server, it is available to all BackStage Clients as a separate tab in the Phonebook dialog.

- Click on the entry **Phonebook settings** in the tree view



Set the following parameters:

- Phonebook name:**
 This parameter defines the name of the Central Phonebook being displayed by the BackStage Client.
- File**
 This option defines whether the BackStage Server shall upload the Central Phonebook from a text file (ASCII text with comma separated values: <Surname>Space<Firstname>,<Number>) in it's internal buffer. The upload takes place during the BackStage Server start up and once per hour. If the **File** option is checked all dedicated parameters are active as well.
 - Browse....**
 Click the Browse... button to select the desired text file.

- **LDAP Server**

This option defines whether the BackStage Server shall upload the Central Phonebook via LDAP from an available directory service. The upload takes place during the BackStage Server start up and once per hour. If the LDAP Server option is checked all dedicated parameters are active as well.

- **LDAP Server**

States the name of the LDAP Server providing the directory service.

- **DN (distinguished name)**

States the search starting point in the directory of the LDAP Server. All entries at all levels under the starting point will be the scope of the search.

- **Filter**

States the attribute to search for (e.g: surname).

- **User**

States the user name of the LDAP Client (in our case the BackStage Server) which permits a search operation on the LDAP Server.

- **Password**

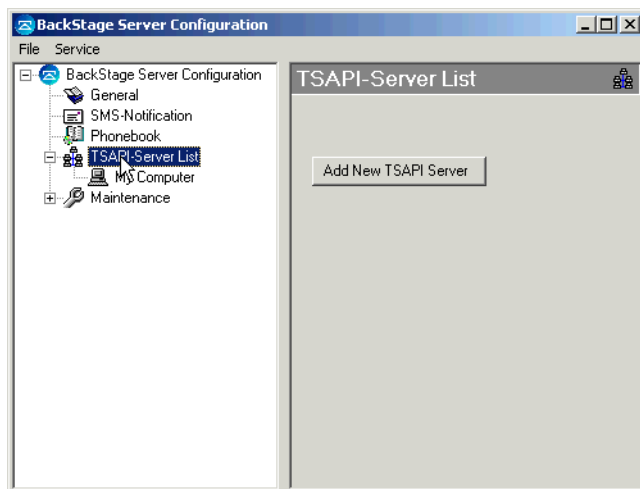
States the password assigned to the user.

To get more information about LDAP, the directory organization or the search parameters see [“Appendix B - LDAP Basics”](#) on page 110.

TSAPI Server settings

The TSAPI Server settings comprise the definition of the connected TSAPI servers as well as their connected BackStage Clients:

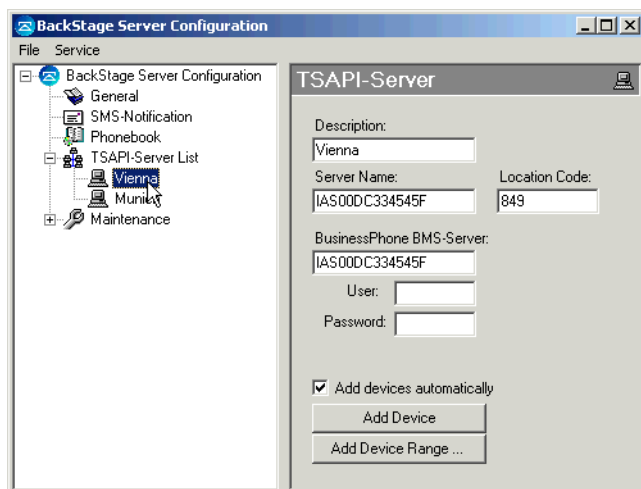
- Click on the entry **TSAPI-Server list** in the tree view



By accessing the BackStage Server configuration tool for the first time, a TSAPI Server with the Name 'My Computer' will be added automatically. The configuration tool simply assumes that the Computer Telephony server runs on the same PC as the BackStage Server.

Add a TSAPI Server

- To add a new TSAPI Server click the **Add New TSAPI Server** button.



Set following parameters:

- Description (system name)**

The Description parameter is used to set the system name to which the TSAPI-Server belongs to. 'My Computer' is the default value for the first Server.

When using the BusinessPhone Phonebook it is necessary that this name matches exactly with the system name defined by the BusinessPhone Management Server (case sensitive).

- TSAPI Server Name**

The Server Name parameter is used to establish the connection to the TSAPI Server. Type the computer name of the TSAPI Server into the dedicated text box. The default Server Name for the entry 'My Computer' is the Computer Name where the BackStage Server is installed.

- Location Code**

The Location Code parameter is used in conjunction with a Multi-Site Busy Lamp Field (BusinessPhone or MD-Evolution network scenario). When the parameter is set, the Location Code will automatically be inserted when the user calls a Busy Lamp Field member which belongs to another PBX in the network.

- **BusinessPhone BMS Server**

The BusinessPhone Management Server (BMS) parameter is used to activate the BusinessPhone Phonebook on the BackStage Client (separate tab). The BackStage Server uploads the directory data directly from the SQL/MSDE database of the BMS (offline data) in it's internal buffer. The upload takes place during the BackStage Server start up and once per hour. Hereby the BackStage Server uploads all the directory data belonging to the system name which is defined in the Description text box. If there is no match between the data in the Description text box and the system names in the BMS, the BackStage Server uploads the complete directory data stored in the BMS database, as well as from other BusinessPhone systems.

- **User and Password**

Both parameters are used to access the SQL/MSDE database. If these access parameters are not modified in the BMS SQL/MSDE database (default User:sa, no password), both parameters can be kept empty, otherwise the defined user name and password has to be entered.

- **Add devices (Client) automatically**

If all BackStage Clients are allowed to connect themselves to the BackStage Server, check the **Add devices automatically** check box and no further Client settings are necessary.

If only specific BackStage Clients shall be allowed to connect themselves to the BackStage Server then uncheck the **Add devices automatically** check box.

- **Add devices (Clients)**

If the checkbox **Add devices automatically** is checked, the assignment will take place automatically when the BackStage Clients connect themselves to the BackStage Server for the first time. A manual assignment of the devices is not necessary.

If the checkbox **Add devices automatically** is unchecked, you have to use the button **Add Device** to add a single device manually or the button **Add Device Range** to enter several devices manually in one step.

Note: When using the Add Device button you have the possibility to add a description (name) to each device. This option is not applicable when using the Add Device Range button, in this case the device number will be entered automatically into the description text box.

Modify a TSAPI Server

- To modify a TSAPI Server, click to the desired TSAPI server name in the tree view.

The procedure is nearly the same as in the description of “[Add a TSAPI Server](#)” on page 45, for detailed description please refer to this chapter, only the handling of the devices might have an additional aspect.

- Add devices (Clients)

If the checkbox **Add devices automatically** is checked, the assignment will take place automatically when the BackStage Clients connect themselves to the BackStage Server for the first time. A manual assignment of the devices is not necessary.

If the checkbox **Add devices automatically** is unchecked, you have to use the buttons **Add Device** to add a single device manually or the button **Add Device Range** to enter several devices manually in one step.

Note: If using the Add Device button you have the possibility to add a description (name) to each device. This option is not applicable if using the Add Device Range button, the device number will in this case be entered automatically in the description text box.

- Remove devices

Select the device in the tree view, click the right mouse button and click **Remove** in the shortcut menu.

Note: If removing a Client, make sure that the checkbox **Add devices automatically** is unchecked, otherwise the device will be added automatically again during the next Client startup.

Remove a TSAPI Server

- 1 Click the desired TSAPI server name in the tree view.
- 2 Click the right mouse key.
- 3 Click **Remove** in the shortcut menu.

BackStage Client configuration on the user's computer

When setting up the BackStage Client and the connection to the BackStage Server on a user's, computer all the Client settings, which are stored in the **Client.ini** file, will be transferred to the BackStage Server.

The BackStage Server Configuration Tool provides the possibility to fetch these settings, to modify them or to copy them to other Clients. The Copy feature simplifies the installation routines as only the first Client (template Client) has to be setup completely. For all the other Clients only the communication, the license and the language parameters have to be set as the remaining one will be imported from the template Client via the BackStage Server. For details see chapter "[BackStage Client configuration on the BackStage Server](#)" on page 71.

Proceed with the Client settings as follows:

1 Ask the user of the Client to log on with his/her password.

Note: The Client configuration should not be done with the administrator's account, as all the user settings would be stored in the administrator's directory (e.g. C:\Documents and Settings\Admin\Application Data\BackStageClient80) and this data will then not be available to the user and all settings have to be redone again.

2 On the task bar, click **Start**.

3 Point to **Programs, Ericsson, BackStage Client 8.0** and then click **BackStage**

The program starts and the main window opens on your screen.

When starting the BackStage Client the first time, the Language selection dialog box will be opened.

Continue with step 4 otherwise continue with step 5.

4 As all setup steps are only described using the English graphical user interface it is recommended to select the Language English in the first step.



5 "[Setup the connection to PBX](#)" on page 50.

When starting the BackStage Client the first time, this setup step will be executed automatically after you have selected the language.

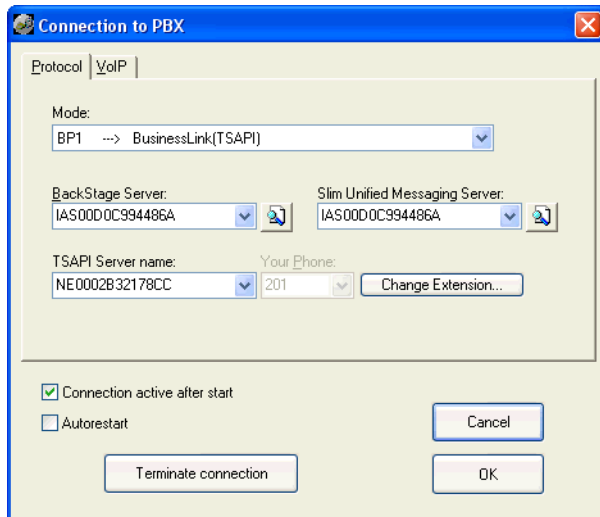
- 6 “Setup Licensing (WIBU)” on page 57
- 7 “Read out and modify the connection status” on page 60
- 8 “Read out the connection mode” on page 60
- 9 “Setup the numberplan” on page 62
- 10 “Setup the SMS GSM Gateway” on page 65
- 11 “Modify the superuser password” on page 66
- 12 “Setup the language” on page 67
- 13 Close the BackStage Client application
- 14 “Setup Microsoft® Outlook™ Integration” on page 68
- 15 “Setup Unified Messaging Fax Plugin (BusinessPhone only)” on page 70

The configuration steps 9 to 11 have to be done only for the first Client, for all other Clients you can use the Copy Client data function on the BackStage Server.

Setup the connection to PBX

The **Connection to PBX** settings are used to define the interface between BackStage and the Ericsson BusinessPhone and MD Evolution communication platform.

- To open the **Connection to PBX** dialog box use following path:
Setup > Advanced Options > Connection to PBX



Protocol tab

The **Protocol** tab is used to specify the communications protocol between BackStage and the communication platforms BusinessPhone and MD Evolution.

You can choose from five different modes:

- Mode BusinessPhone 1 (BP1): BusinessPhone and BackStage are connected via BusinessLink and optional also via the BackStage Server or the Slim Unified Messaging Server.
- Mode BusinessPhone 2 (BP2): BusinessPhone and BackStage are connected via BusinessPhone's integrated IP board (Voice over IP part), BusinessLink (complementing Computer Telephony part) and optional also via the BackStage Server or the Slim Unified Messaging Server.
- Mode MD Evolution 1 (MDE1): MD Evolution and BackStage are connected via C-Link and optional also via the BackStage Server.
- Mode MD Evolution 2 (MDE2): MD Evolution and BackStage are connected via MD Evolution's integrated IP board (Voice over IP part), C-Link (complementing Computer Telephony part) and optional also via the BackStage Server.

For detailed description about the different modes see also "[System specific installation](#)" on page 21.

Proceed as follows

- 1 Click the arrow key of the mode drop-down list box.

BackStage displays all available modes.

Note: At the initial setup mode BP1 is selected by default.

- 2 Mark the desired entry and release the mouse button.

Note: If mode BP1, BP2, BP3, MDE1 or MDE2 is selected, the system will check whether an appropriate license is available (provided by the WIBU-Key software and/or from the BusinessPhone system).

If no license is found, BackStage will start in demo mode. See also “[Software Licensing & Demo Mode](#)” on page 18.

- 3 Define the used BackStage Server.

Note: During the initial setup the BackStage Client tries to detect the BackStage Server automatically. If the BackStage Server is located in the same subnet as the Client, it's computer name will normally be detected, otherwise you have to enter the computer name manually.

Enter the computer name in the dedicated drop-down list box or click

the  icon to search for all available BackStage Servers in the same subnet.

- 4 If applicable in the selected mode, you have to define the used TSAPI Server.


Enter the computer name of the TSAPI Server in the dedicated drop down list box. In case of a defined BackStage Server you only have to click the arrow of the drop-down list box and all TSAPI servers which are connected to the BackStage Server are listed.

Note: If the BackStage Server is detected during the initial setup of the BackStage Client and only one TSAPI Server is connected to the Server, then this TSAPI Server will be entered in the address field automatically.

- 5 If applicable in the selected mode, you have to define the extension number of the user in the **Your Phone** drop-down list box. To do so, you have to click the **Change Extension...** button.
 - a The Password dialog opens if you have not already entered your password since you started BackStage. In the text box, type the superuser password (default: superuser) and click **OK**. You can change the password on the Password page of the Setup – Options dialog.
 - b The Password dialog closes and the **Your Phone** text box, is active.
 - c By clicking the arrow of the drop-down list box, you can select one of the extension numbers which are already configured on the BackStage Server. If the desired number is not available (new installation) then enter the desired extension number.
- 6 If applicable in the selected mode, and if available in the customer's configuration then you also have to define the used BusinessPhone Slim Unified Messaging Server.

Note: The BusinessPhone Slim Unified Messaging Server is optional and only required if it shall be possible to retrieve BusinessPhone messages (voice, text or call-back) and Fax messages via the BackStage Client Journal. **The BackStage Client automatically requests a Unified Messaging License if it has a configured Mailbox number and an Authority code.**

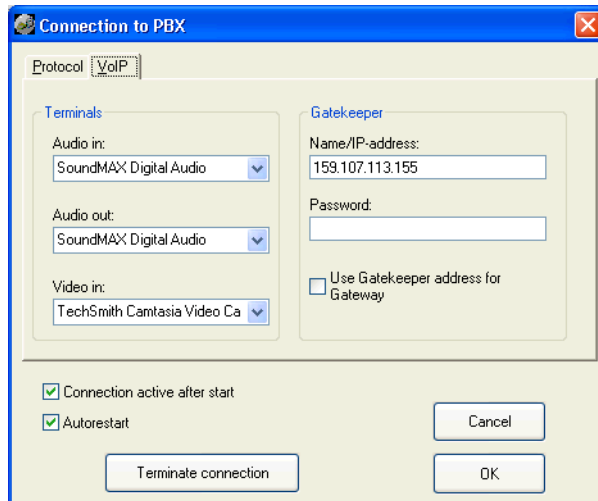
During the initial setup, the BackStage Client tries to detect the Slim Unified Messaging Server automatically. If the Unified Messaging Server is located in the same subnet as the Client, its computer name will normally be detected, otherwise you have to enter the computer name manually.

Enter the computer name of the Slim Unified Messaging Server, or click the  icon to search for all available Slim Unified Messaging Servers.

- 7 Click **OK** to finish the configuration.

VoIP tab

The **VoIP** tab is active in conjunction with mode BP2 and MDE2. It defines the terminals to be used as well as the Gatekeeper to be accessed.



Terminals group box

BackStage automatically detects any Audio in- Audio out- and Video in-drivers installed on the system. If more than one driver has been installed, the desired driver can be selected.

- 1 Click the arrow key of the related drop-down list box.
A menu displays all relevant drivers currently installed on your system.
- 2 Mark the desired entry.

Gatekeeper group box

Use the **Gatekeeper** group box to enter the name or IP-address of the BusinessPhone's integrated IP unit, on which the Gatekeeper is installed, and the password which is required to login.

Name/IP-address and Password text fields

Proceed as follows:

- 1 Enter the name or IP-address of the IPU hosting the Gatekeeper.
- 2 Enter the password you use to log into the Gatekeeper.

NOTE The password has to match with the BusinessPhone setting of command 0701.

Use the Gatekeeper address for the Gateway check box (not relevant for Windows XP)

Normally BusinessPhone is operating with a single IPU (Gatekeeper and Gateway are on the same board) and therefore this check box shall be enabled (=checked).

However for high traffic cases, the BusinessPhone system can be configured with multiple IPU boards, whereas one is acting as a Gatekeeper and the others as Gateways. In this specific case the check box has to be left disabled to connect to more than one IPU in the BusinessPhone.

If the Gateway is on another IPU board than the Gatekeeper, it will be necessary to configure the IP-address of the used Gateway in the configuration menu of the *Microsoft H.323 TAPI Service Provider*.

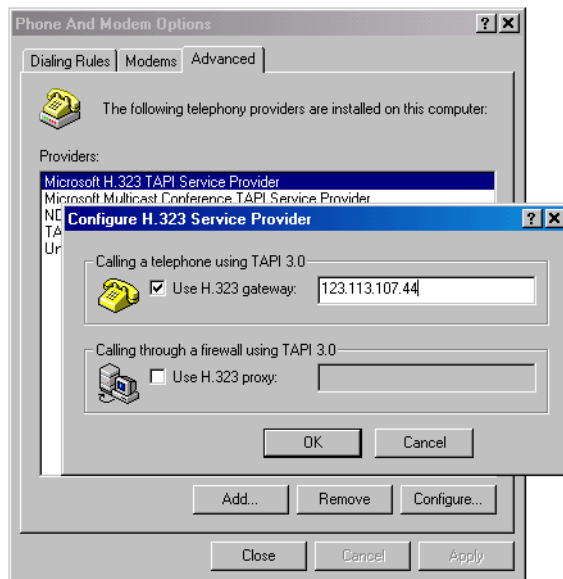
Proceed as follows:

- 1 On the task bar click the **Start**, point to **Settings**, and then click **Control Panel**.
- 2 Double-click the **Phone and Modem Options** icon.



- 3 Click the **Advanced** tab.
- 4 In the **Provider** list, click **Microsoft H.323 TAPI Service Provider**.

- 5 Click **Configure**.

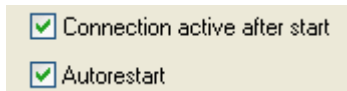


- 6 Select the **Use H.323 gateway** check box (enabled=checked).
- 7 In the text box, enter the IP-address of the IPU which is configured as Gateway.
- 8 Click **OK** to finish the configuration.

General options

Connection active after start and Auto restart check box

The options **Connection active after start** and **Auto restart** are shown in the lower window section.



- **Connection active after start:** When the program is started, a connection to BusinessLink and C-Link is automatically established.
- **Autorestart:** BackStage tries to re-establish an interrupted connection to the BusinessLink or C-Link Server at regular intervals.

NOTE If BackStage is used with the automatic start of the operating system, it is recommended that this function is enabled.

Establish / Terminate connection button

Use the **Establish connection** button to establish the connection to the selected Computer Telephony server or click **Terminate connection** to terminate the connection.

Setup Licensing (WIBU)

This chapter is only relevant in conjunction with MD- Evolution or BusinessPhone systems older than Version 7.0.

Before you can use the BackStage Client, you have to make sure that it get a proper license. To do so, there must be an established connection between the WIBU-Key Client and the WIBU-Key Server.

Note: If you only use the two BackStage reference users in conjunction with BusinessPhone 6.0 or higher, it is not necessary to setup the WIBU-Key Client and the WIBU-Key Server.

By default the WIBU-Key Clients are sending out a broadcast message over the TCP/IP network to search for the proper WIBU-Key Server. In most cases this will work without any problems, but in order to minimize the traffic on the LAN and to avoid possible time-out problems in complex LAN configurations, it is recommended to specify the related WIBU-Key Server on each WIBU-Key Client PC.

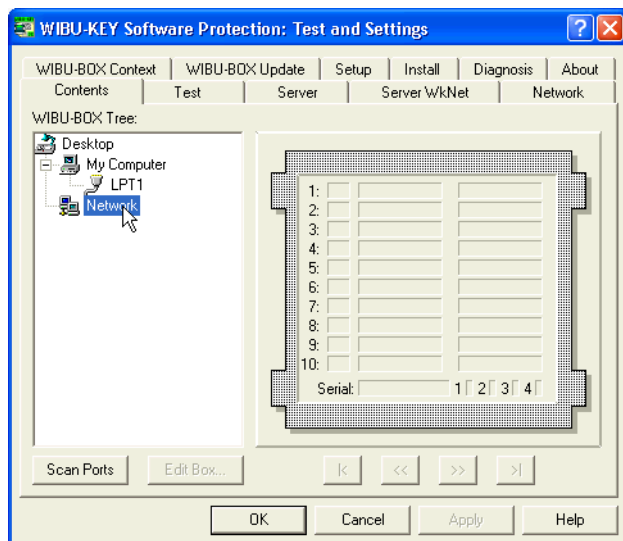
The WIBU-Key Client application consists only of Windows Drivers and is therefore invisible to the user. However the WIBU-Box can be accessed via the BackStage Client or via the WIBU-KEY Control Panel Applet in the Control Panel of Windows.

- To access the WIBU-Key Client via the BackStage Client use following path:
Setup > Advanced Options > Licensing (WIBU)

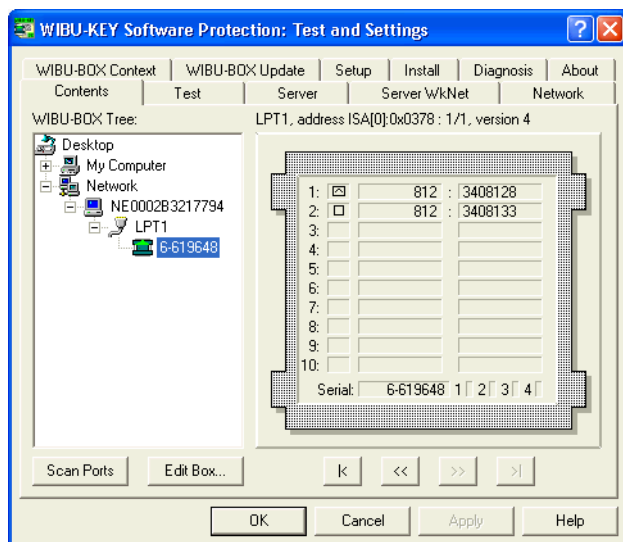
Note: If the WIBU-Key Client is not installed, the access via the BackStage Client will not be offered.

Proceed as follows:

- 1 Select the **Contents** tab.
- 2 Click on the entry **Network** in the WIBU-Box Tree.



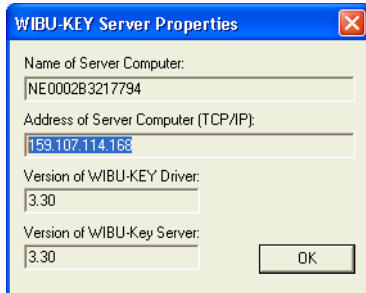
- 3 Click on the **Scan** button to search for the installed WIBU-Boxes.



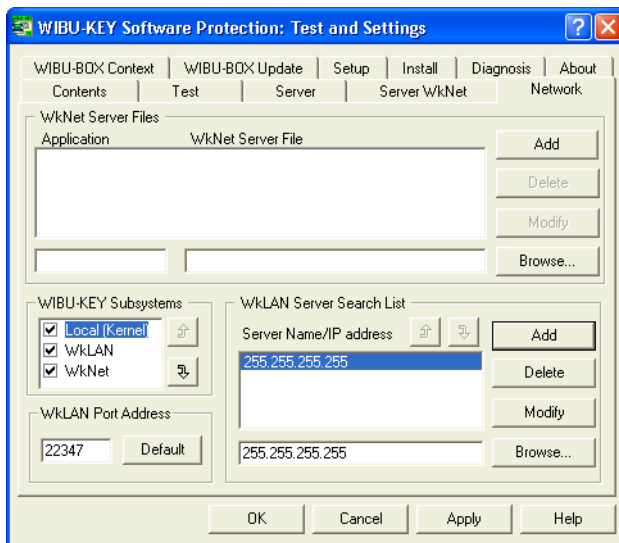
The tree shows all available WIBU-Boxes in the customer's network, including their unique serial numbers (X-XXXXXX).

- 4 Search for the WIBU-Box which has as first entry of the following value:
812:3408128 (BackStage WIBU-Box).

- 5 Select the WIBU-Key Server to which the WIBU-Box is connected and click the right mouse button. In the shortcut menu click on the item **Properties**. The following dialog box pops up:



- 6 Mark the **Address of Server Computer** entry and copy it into the Clipboard (CTRL+C).
- 7 Click on the **OK** button to close the **WIBU-Key Server Properties** dialog box.
- 8 Click the **Network** tab.



In the **WkLAN Server Search List** group box only the IP-Address 255.255.255.255 is stated. This entry means that a broadcast over the complete LAN will be sent out, to search for the proper WIBU-Key Server.

- 9 Paste (CTRL+V) the WIBU-Key Server IP-address into the text field of the **WkLAN Server Search List** group box.
- 10 Click the **Add** button
- 11 Select the new entry and modify the priority of the search routine by using the following buttons:



The entered WIBU-Key Server Address shall have the first priority, the broadcast the second priority.

12 Click the **OK** button to confirm the modification.

Every time the BackStage Client application is started, the related WIBU-Box Server will be contacted first. If this Server is not available, a broadcast message will be sent out over the complete customer's LAN.

Read out and modify the connection status

The connection status lamp in the status bar indicates whether or not there is an established connection to the Computer Telephony Server.



established connection



broken connection

During the installation the connection is not active.

Click the lamp icon to connect to the Computer Telephony Server.

Read out the connection mode

Move the cursor over the Connection status symbol in the Status bar of the BackStage main window. A tooltip pops up showing the configured mode.



If a BackStage Server is active it will also be displayed in the tooltip.



Note: The BackStage Server is only displayed if there is an established connection to the Computer Telephony Server.

Setup Common Phonebook

The Common Phonebook should be stored in a directory on the customer's File Server which is accessible to a group of BackStage Clients.

Note: Only the Administrator of the Common Phonebook should have the write and modify permissions in the directory where the Common Phonebook is stored.

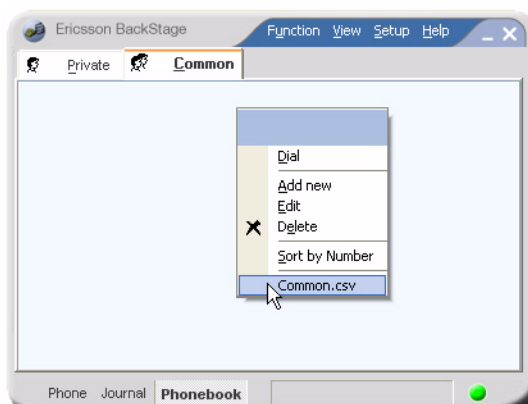
Create a new Common Phonebook

A new Common Phonebook can be easily created using existing customer data.

- 1 Ask your customer for an Excel file which contains two columns (Column A: Surname Firstname, Column B: Telephone number).
- 2 Save this Excel file as *.CSV file (supported delimiter are ',' or ';') on a common directory on the customer's File Server.

Setup the Common Phonebook path on the BackStage Client

- 1 Click the Phonebook window switch button to open the Phonebook window.
- 2 Click the **Common** Phonebook tab.
- 3 Right-click any entry in the Common Phonebook window.
- 4 On the shortcut menu click the bottom entry (showing the path and filename of the current phonebook file, for instance C:\Documents...COMMON.CSV).



- 5 In the **Open** dialog box select the phonebook file which you have previously stored in a common File Server directory and click **Open**.

The selected phonebook is now available to the Client.

Setup the numberplan

The numberplan settings are used to secure that BackStage will automatically convert every dialled or received call number into the correct format.

Note If you want to deactivate the **Numberplan** (e.g.: for function codes, short external emergency numbers or internal networking numbers), add @ in front of the number (e.g. @205).

- To open the **Numberplan** page use following path:

Setup > Options > Numberplan.

The screenshot shows a window titled "Setup - Options" with a tree view on the left containing "Phone", "General", "Mailbox", "Numberplan", "Password", and "Video". The "Numberplan" tab is selected and expanded, showing the following fields:

Trunk access code	0
International number prefix	00
National number prefix	0
Area code	1
Alternative area code	222
Country code	43
Subscriber number	8101422
Max. digits for internal number	4
Access code delivered by PBX	No
Complete number always	No
Emergency Phone numbers...	

At the bottom of the dialog are "OK" and "Cancel" buttons.

Proceed as follows:

1 Set Trunk access code

When the trunk access code is set, BackStage automatically adds the code to all called numbers which exceeds the amount of digits defined in the **Max. digits for internal number** text box.

2 Set International number Prefix

In the **International number Prefix** text box, type the prefix number used for an international call.

3 Set National number Prefix

In the **National number Prefix** text box, type the prefix number used for a national call.

4 Set Area code

In the **Area code** text box, type the area code number (without the leading zero) for your area.

5 Set Alternative area code

During conversion phases initiated by the telephone network operator, an area may be accessible via two different area codes. If there is no alternative, just leave this field blank.

In the **Alternative area code** text box, type the number of the alternative area code (without the leading zero) for your area.

6 Set Country code

In the **Country code** text box, type your country code.

7 Set Subscriber number

In the **Subscriber number** text box, type the local subscriber number part of the customer's PBX without any direct dialling in (DDI) digits.

Note: Depending on the national numberplan definitions, the term 'Subscriber number' might not be totally correct, as some definitions also contain the DDI digits.

The subscriber number is used for the SMS notification on message waiting. This kind of SMS also contains the number of the caller who has left a message for the user. In order to create a number which can be called back from any GSM mobile phone, internal caller numbers as well as the mailbox number are enhanced with the subscriber number, area code and country code.

If the subscriber number is not set, only the extension numbers of the internal callers as well as the directory number of the mailbox are stated in a SMS, which can of course not be called back from a GSM mobile phone.

8 Set Max. digits for internal number

In the **Max. digits for internal number** text box, type the maximum number of digits for internal numbers. Numbers consisting of the maximum or a lower number of digits are automatically recognized as internal numbers.

9 Define whether or not the **access code is delivered by PBX**

The trunk access code of your own PBX can be inserted or left out for numbers displayed. This is used to correctly dial the trunk access code for numbers detected/displayed and then stored in the Journal or Phonebook.

Click the **Access code delivered by PBX** box and select the desired option:

- **Yes:** Trunk access code is not inserted for display/storage. It is assumed that the trunk access code is delivered by the PBX.
- **No:** Trunk access code is inserted for display/storage. It is assumed that the trunk access code is not delivered by the PBX.

10 Define whether or not the calling number shall be completed to an international number type.

For easy identification, the caller number can be displayed together with the country and area code.

Click the **Complete number always** box and select the desired option.

11 Add the **Emergency Phone Numbers....**

The Emergency Phone Codes parameter is used to define all relevant emergency numbers so that BackStage also detects these short numbers (e.g.112) which have probably the same or even lower number length as the internal numbers as external numbers which means it adds the trunk access code automatically.

Click **Emergency Phone Numbers....**

The Emergency Phone Numbers window opens

- a** Enter the desired Code in the **Number** text box.
- b** Click the **Add -->** button
The entered number is displayed in the Number list
- c** Click the **OK** button to close the window.

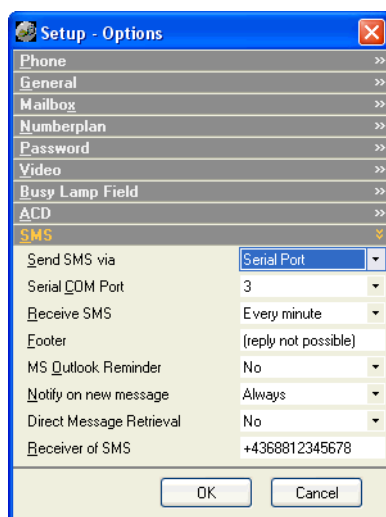
How to remove the Emergency Phone Numbers is described in the user guide.

12 Click **OK to finish the configuration.**

Setup the SMS GSM Gateway

The SMS GSM Gateway settings are used to define the interface between the Client and an optional SMS Gateway. Further these settings are used to define how and when SMS messages shall be sent. For the basic setup only the interface definitions are relevant, all other settings are user specific and are therefore only stated in the online help.

- To open the **SMS** page use following path:
Setup > Options > SMS.



Proceed as follows:

- 1 Send SMS via**
Click the drop-down listbox to define whether the SMS messages shall be sent via a central SMS GSM gateway which is connected to the BackStage Server (default) or via a personal SMS GSM gateway which is connected to the serial port of the user's computer.
- 2 Serial COM port**
The COM port drop-down list box is only active if the SMS GSM gateway is connected to the serial port on the user's computer (previous parameter has to be set to 'serial'). When clicking on the arrow of the drop-down list box, all available ports of the user's computer are listed.

Note: Before you connect the SMS GSM Gateway to the user's serial port, please check whether it fulfills the requirements. See "[Requirements](#)" on page 16.

Modify the superuser password

The superuser password is required to set the following specific parameters:

Busy Lamp Field parameters page

- Absence Info / Presence info allowed (default setting: Yes)
- Identification before Pick up (default setting: No)

Connection to PBX page

- Change Extension

As these settings are offering quite sensible possibilities for the enduser, it is recommended always to change the default superuser password.

- 1 To open the **Password** page use following path:
Setup > Options > Passwords
- 2 Click the Superuser's dedicated **Change Password** button.
The Superuser Change Password dialog pops up
- 3 Enter the current password (default: superuser)
- 4 Enter the new password and confirm it by entering it a second time.
- 5 Click **OK** to finish the password modification.

Setup the language

The Language setting is used to define the desired operating language for the user.

- To open the **Language** dialog box use following path:

Setup > Language



The following languages are currently supported:

- German
- English
- Spanish
- French
- Italian
- Swedish

Proceed as follows:

- 1** Select the desired language by clicking on the related option button.
This selection sets the language for the entire program and for the Help file.
- 2** Click **OK** to finish the configuration.

Setup Microsoft® Outlook™ Integration

The Microsoft® Outlook™ integration enables you to use certain BackStage functions directly in the MS Outlook application via a separate BackStage toolbar. The plug-in will automatically be installed during the Client installation.

Limitations The plug-in is only compatible with MS Outlook 2000, MS Outlook XP and MS Outlook 2003.

Test the Plug-in

To check whether the plug-in works correctly, proceed as follows:

- 1 Start Microsoft® Outlook™ and the BackStage Client
- 2 Switch to Microsoft® Outlook™ and open a new mail message
- 3 Click on **Phone List....** in the BackStage toolbar



- 4 Select any number from the phone list or enter a new one in the Phone text field and click the **Dial** button.
If the plugin works correctly a call should be built up.
- 5 If you fail with step 4 or even with step 3, then follow the steps described in the chapter [Manual installation of the plug-in](#)

Manual installation of the plug-in

- 1 Start Microsoft® Outlook™
- 2 Click on **Tools** in the menu bar
- 3 In the context menu click on **Options**
The Option dialog box opens.
- 4 Click on the **Other**-tab
- 5 In the General Area click the **Advanced Options...** button
The Advanced Options dialog box opens.
- 6 Click the **COM Add-Ins...** button
The COM Add-Ins dialog box opens.
The list box gives an overview about all installed plugins.

- 7** Click the **Add..** button
The Add Add-in dialog box opens.
- 8** Browse to the program directory of the BackStage Client
(default: C:\Program Files\Ericsson\BackStageClient80).
- 9** Select the file **BackStageOLAddin.dll** and click the **OK** button.
The BackStage Outlook Add-in is now displayed in the listbox of the COM Add-Ins dialog box.
- 10** Verify whether the checkbox beside the BackStage Outlook Add-in is enabled.
- 11** Click the **OK** button to confirm the new plug-in and to close the COM Add-Ins dialog box.
- 12** Repeat step 10 until you have closed all open dialog boxes.
- 13** Restart Microsoft® Outlook™.
- 14** Create a new message and check whether the BackStage toolbar is available.
If the toolbar is not available start again with step 2.

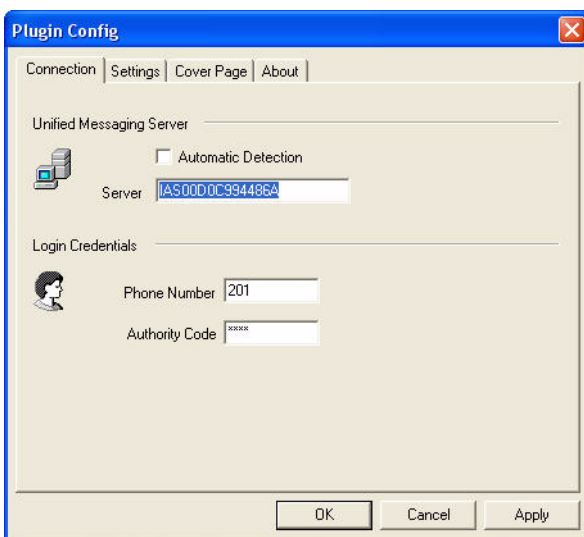
Setup Unified Messaging Fax Plugin (BusinessPhone only)

- 1 On the task bar, click **Start**.
- 2 Point to **Programs, Ericsson, Unified Messaging** and then click **Plugin Config**
The program starts and the main window of the configuration tool opens on your screen.

The Configuration tool contains four tabs: Connection, Settings, Cover Page and About. To enable the sending of fax messages only the connection tab is relevant. The Settings and Cover page tab contains user settings and are therefore only described in the Online Help of the BackStage Client

Connection tab

The connection tab is used to define the communication to the Unified Messaging Server as well as the user authentication.



- 1 Define the used Unified Messaging Server.
If the Unified Messaging Server is located in the same subnet as the Client, click the **Automatic detection** checkbox and it's IP-address will normally be detected, otherwise you have to enter the IP-address or the computer name manually in the **Server** text field.
- 2 In the **Phone Number** text field type the user's extension number.
- 3 In the **Authority Code** text box, type the password which is assigned to the user's extension.

Note: The default Authority Code in BusinessPhone is '0000'. In order to send fax messages the default value has to be changed. To do so the user has to dial the following function code on the phone: **#*72***<present password>*****<new password consisting of max. 4 digits>**#**. The entered Authority code must always be equal with entry in the BackStage Client.

BackStage Client configuration on the BackStage Server

The BackStage Server is hosting the settings (Client.ini file) of all the Clients, which have connected once to the Server, in its Data folder. The BackStage Server Configuration Tool provides the possibility to fetch the settings of a specific Client (Template Client) and to copy them to other Clients. The new settings will then be available to the target Clients during the next start up.

Proceed as follows:

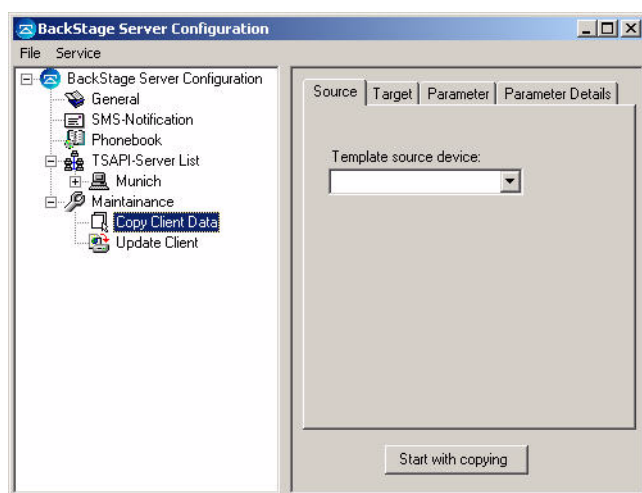
- 1 On the task bar, click **Start**.
- 2 Point to **Programs, Ericsson** and then click **BackStage Server 8.0**
- 3 Click on the menu item **BackStage Server Configuration**
The program starts and the main window opens on your screen.
- 4 In order to avoid a Client data mismatch (a connected Client always sends an update of its settings to the Server in case of any change) you have to stop the Server to disconnect all the Clients.

a Click on **Service** in the menubar

b Click on **Stop BackStage** in the shortcut menu to stop the service

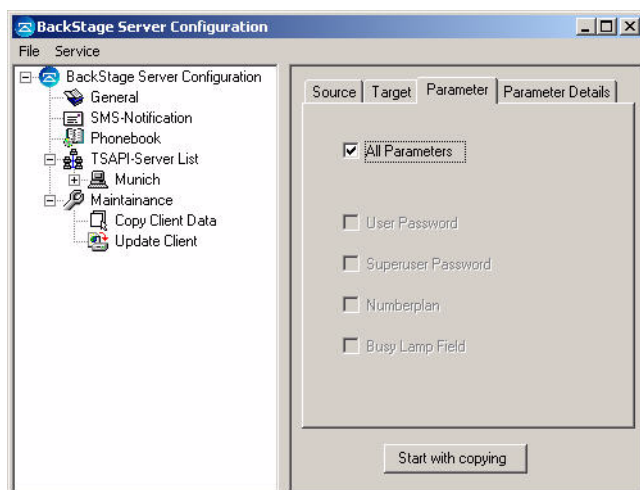
All BackStage Clients will get a warning message that the connection to the BackStage Server has been broken.

- 5 Click on the entry **Maintenance - Copy Client data** in the tree view



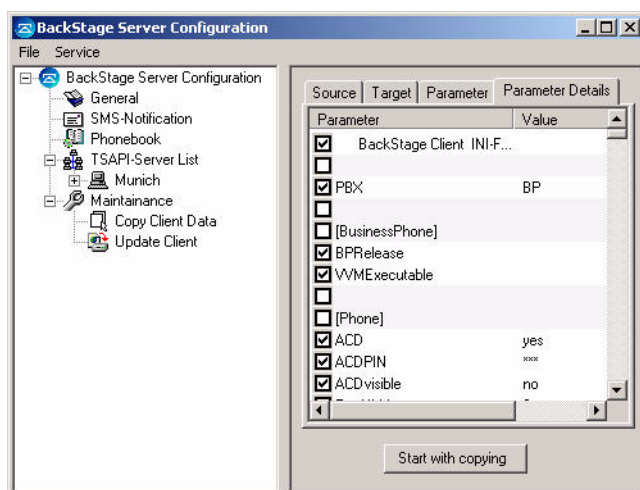
- 6 Click on the **Template source device** pull down menu to fetch the data of a desired Client (Template Client).
- 7 Click the **Target** tab and select all the Clients to which you want to copy the settings of the Template Client

- 8 Click the **Parameter** tab to select a specific parameter set as the content of the copy process



If the selection of a predefined parameter set is sufficient for your needs, then continue with step 10.

- 9 Click the Parameter details tab to modify the content of the predefined parameter set (adding or removing commands) or to modify specific parameter values.



By clicking on the desired parameter checkbox you can define whether or not the parameter shall be part of the copy process. By double clicking the parameter the Edit Parameter window pops up, which enables you to modify the parameter value. For details to each parameter see the document

'BackStage Secrets' which is stored in PDF format in the root directory of the BackStage Server.

Note: When modifying a certain parameter of your Template Client please take care, that you include this Client also in the target list, otherwise all the desired targets will be updated but not the template Client.

- 10 Select the desired parameter sets and click the **Start with copying** button.
- 11 Click on **Service** in the menu bar and then on **Start BackStage** in the shortcut menu to start the Server again.

All the setting changes in the different Clients data are becoming active during the next start up of the Client.

Advanced System Setup

This chapter contains the following settings:

- Connection to Applications
- Automatic Call Distribution (ACD) keys
- Voice dialing

Connection to Applications

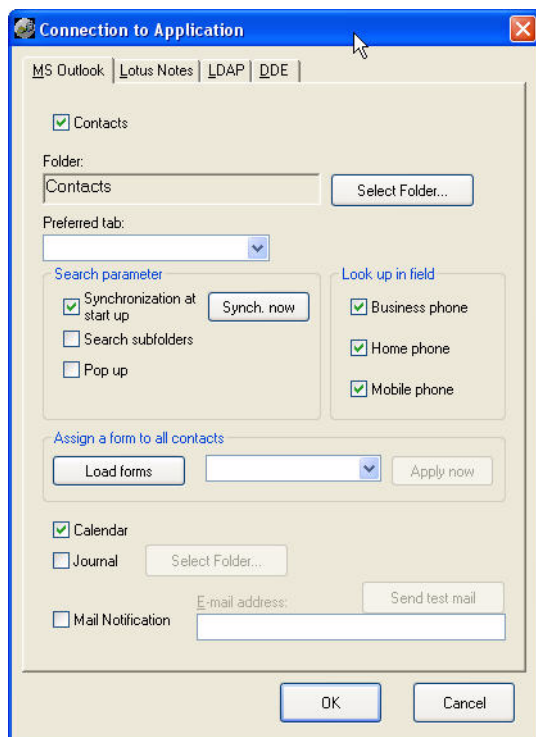
The **Connection to Application** dialog is used to advise BackStage to automatically start the following actions in case of an incoming or outgoing call:

- An identification of the caller.
- A macro in a previously opened Windows application (e.g. Microsoft® Word™, Excel™, Access™).
- An action that you have programmed.

- 1 To open the **Connection to Application** dialog use following path:
Setup > Advanced Options > Connection to Application

MS Outlook Settings tab

The **MS Outlook** tab is used to configure the interworking of BackStage with Microsoft® Outlook™.



Contacts check box

- Enable/Disable the search routines in the Microsoft® Outlook™ contacts folder for the name identification in case of incoming calls by clicking on the **Contacts** check box (checked=enabled).

When enabling the **Contacts** check box the following parameters are accessible:

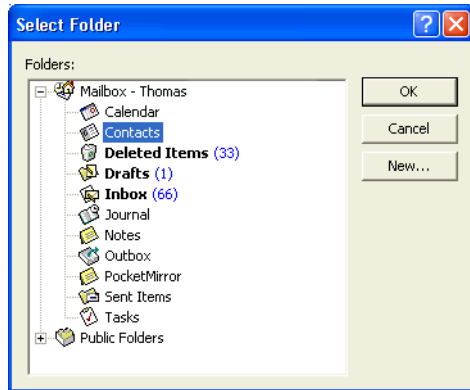
- Folder input field
- Preferred tab drop-down list box
- Search Parameter - group box
- Look up in field - group box
- Assign a form to all contacts - group box

Folder input field

This input field is used to define the Microsoft® Outlook™ contacts folder for the identification of names.

- 1 Click the **Select Folder** button.

The following Microsoft® Outlook™ dialog will open:



- 2 Select the desired Contacts folder.
- 3 Confirm the selection by clicking the **OK** button.

NOTE You can add a new folder with the **New** button.

Preferred tab drop-down list box

Select the form you want to use to display Microsoft® Outlook™ contacts. A field entry is only necessary if customized views (P.2 -P.6) are defined in Microsoft® Outlook™. If this field is kept empty, the default view (**General** tab) will be used.

Search Parameter - group box

This group box is used to set the search parameters for identifying names. Enable/Disable the desired search parameter by selecting the related check box (checked=enabled).

- **Synchronize at start up**

Initiates a copy of the Microsoft® Outlook™ Contacts into the BackStage Client cache during start up in order to perform multiple search routines in a very fast way.

The **Synch. now** button performs an immediate one-off synchronization.

Both the Synchronize at start up parameter as well as the Synch. now button can also be executed via the tray icon.

- **Search Subfolders:** Searches through all subdirectories of Microsoft® Outlook™ Contacts to identify the names.
- **Pop up:** If the caller's number is stored in the Microsoft® Outlook™ Contacts the corresponding contact document folder pops up in case of an incoming call.

Enable/Disable the desired setting by clicking on the related check box (checked=enabled).

Look up in field - group box

You can set the fields in the Microsoft® Outlook™ contacts folder that will be searched during the name identification. Enable/Disable the desired search parameter by selecting the related check box (checked=enabled).

- **Business phone:** The Business phone field is searched during name identification.
- **Home phone:** The Home phone field is searched during name identification.
- **Mobile phone:** The Mobile phone field is searched during name identification.

Assign a form to all contacts - group box

Select the form to which all entries of the defined Microsoft® Outlook™ contacts folder shall be transferred.

- Start the process by clicking the **Apply now** button.

NOTE This process may take several minutes, depending on the number of contact entries.

Calendar - check box

This function is used to retrieve the Calendar information from other colleagues via the Multisite Busy Lamp Field, via the Journal or via the Multimedia buttons. Further on this function is used to keep appointment controlled call profiles updated in case of any appointment change.

- Enable/Disable the function by clicking on the related check box (checked=enabled).

Journal - check box

This function is used to record data for all telephone calls in the Microsoft® Outlook™ Journal.

- Enable/Disable the function by clicking on the related check box (checked=enabled).
The **Select Folder** button is used to select either a personal Journal Folder or a commonly used public Folder.

Mail Notification - check box

This functions is used to send automatically an e-mail from Microsoft® Outlook™ to a defined e-mail address, if incoming calls are not answered.

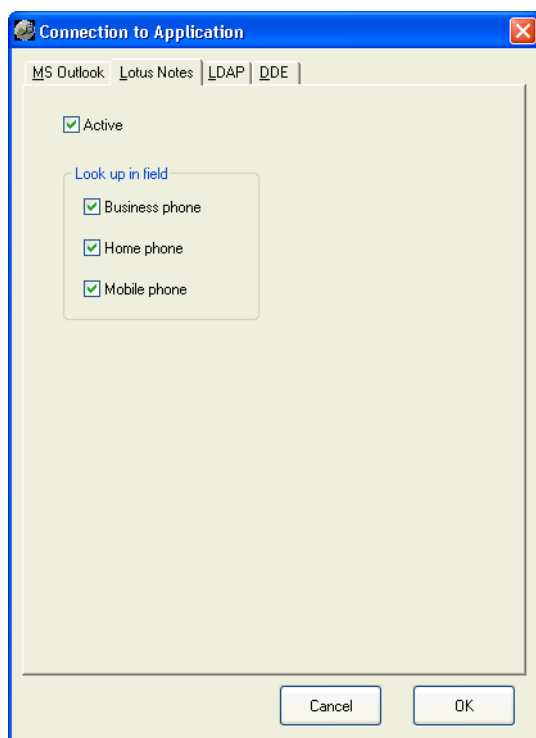
- Enable/Disable the function by clicking on the related check box (checked=enabled).
- **E-mail Address** text field
Define the e-mail address to which the e-mail shall be sent.
- Click the **Send test mail** button to send a test e-mail to the specified e-mail address.

NOTE Due to security measurements from Microsoft®, this function cannot be used in conjunction with Microsoft® Office XP™, Outlook 2000™ with Service Pack 2, or Outlook™ with Security update.

Lotus Notes Settings tab

The **Lotus Notes** tab is used to configure the interworking of BackStage with Lotus Notes.

- 1 Open the **Lotus Notes** dialog by selecting the related tab in the **Connection to Application** dialog.



- 2 Enable/Disable the search routines in the Lotus Notes contacts folder for the name identification in case of incoming calls by clicking on the **Active** check box (checked=enabled).

Look up in field group box

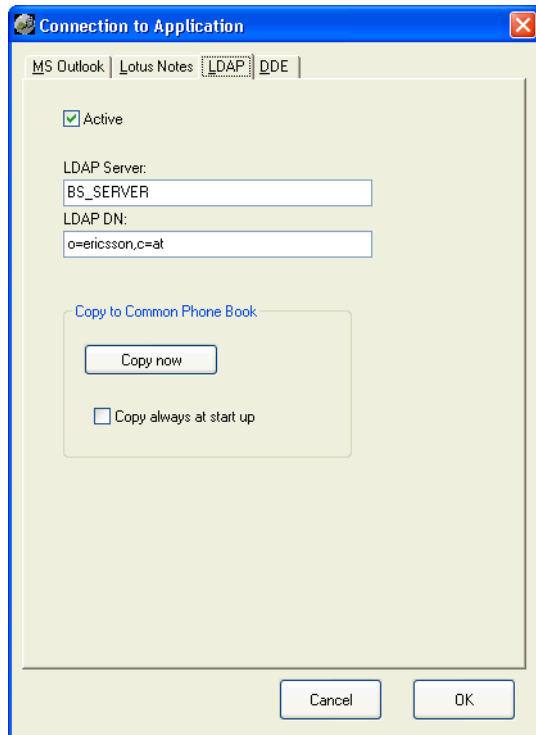
You can set the fields in the Lotus Notes contacts folder that will be searched during the name identification. Select all desired search fields by clicking the related check boxes (checked=enabled).

- **Business phone:** The Business phone field is searched during the name identification.
- **Home phone:** The Home phone field is searched during the name identification.
- **Mobile phone:** The Mobile phone field is searched during the name identification.

LDAP Settings tab

The **LDAP** tab is used to configure a LDAP (Lightweight Directory Access Protocol) connection to an available directory service in order to achieve a name identification for the incoming calls.

- 1 Open the **LDAP** dialog by selecting the related tab in the **Connection to Application** dialog.



- 2 Enable/Disable the connection to the LDAP server by clicking on the **Active** check box (checked=enabled).

If the feature is enabled, every incoming call causes a request to the LDAP server, whereby the search priority for the name identification is as follows:

- In Microsoft® Outlook™ Contacts
- In the Busy Lamp Field
- In the private Phonebook
- In the common Phonebook
- In the BusinessPhone Phonebook

- In the Central Phonebook
- In Lotus Notes
- LDAP Server

LDAP Server text box

This text box is used to state the computer name of the LDAP Server.

LDAP DN text box

States the search starting point in the directory of the LDAP Server. All entries at all levels under the starting point will be the scope of the search.

To get more information about the LDAP, the directory organization or the search parameters see [“Appendix B - LDAP Basics”](#) on page 110.

Copy to Common Phonebook - group box

- **Copy now:** The button is used to copy all data from the LDAP server into the Common Phonebook.
- **Copy always at start up:** If the check box is enabled, every time BackStage is starting up, the existing LDAP server data is copied into the Common Phonebook.

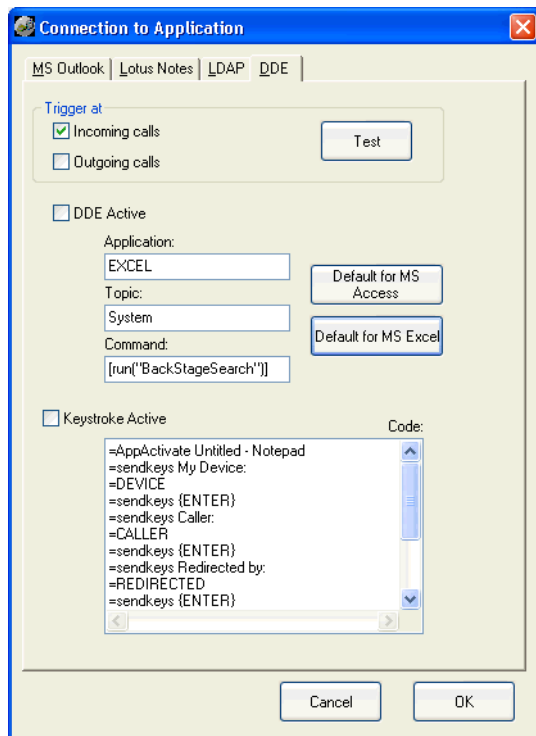
NOTE This feature allows a reliable name identification even when the delivered number format in the Backstage Common phonebook is not exactly the same as the LDAP server phonebook.

NOTE The existing data of the Common Phonebook will be deleted in both cases, if it is desired to save this data, please store the file *common.csv* from your BackStage directory under a different location.

DDE (Dynamic Data Exchange) Settings tab

This **DDE** tab is used to specify which application will be started in case of an incoming or outgoing call.

- Open the **DDE** dialog by selecting the related tab in the **Connection to Application** dialog.



Trigger at group box

The **Trigger at** group box is used to set whether an application or a script will be started on incoming or outgoing calls.

- **Incoming calls:** The macro or script will be started on incoming calls (before they are answered). This parameter will be automatically enabled, when the parameter **Pop up** in the MS Outlook tab will be enabled.
 - **Outgoing calls:** The macro or script will be started on outgoing calls (before the connection is established).
 - **Test:** The **Test** button is used to test the macro or script.
- 1 Enable/Disable the desired function by clicking on the related check box (enabled=checked).

DDE

- Enable/Disable the entire feature by clicking on the **Active** check box (checked=enabled).

Application text field

Specify the application that should be enabled.

Topic text field

Specify the type of application (default=system).

Command text field

Specify the macro to be run after the application has started.

- Enter the desired data in the related text fields.

NOTE The **Default for MS Access** and **Default for MS Excel** buttons are loading MS Access with the *CLIENT2000.MDB* database or MS Excel with the *EXCEL97.XLS* file.

Keystroke

The **Keystroke** settings are used to set an alternative method (sendkeys method) for applications which do not support DDE. Keyboard inputs are sent to the application by using this method.

- 1 Enable/Disable the entire feature by clicking on the **Active** check box (checked=enabled).

BackStage can identify the following connection data and transfer it to other Windows applications in the form of variables:

- **DEVICE**: Number of your extension.
- **CALLER**: Telephone number of caller.
- **REDIRECTED**: Extension number which has diverted to your extension.
- **CALLED**: Dialed telephone number.
- **CUSTOMERID**: DTMF code of Automated Attendant.

A macro or a script can use these variables for such functions as opening a database and automatically finding your caller's data.

Example

Following example opens a MS Word document with the caller's number as the file name.

Code Line	Explanation
=AppActivate Microsoft Word	
=sendkeys ^o	(=CTRL+O, open a document)
=caller	
=sendkeys .doc	add to the no. of the caller the extension DOC
=sendkeys {ENTER}	press enter

NOTE The sendkeys method can only be activated if the application is already running.

Sendkeys parameters

Key	Code
BACKSPACE	{BACKSPACE}, {BS}, or {BKSP}
BREAK	{BREAK}
CAPS LOCK	{CAPSLOCK}
DEL	{DELETE} or {DEL}
DOWN ARROW	{DOWN}
END	{END}
ENTER	{ENTER} or ~
ESC	{ESC}
HELP	{HELP}
HOME	{HOME}
INS	{INSERT}
LEFT ARROW	{LEFT}
NUM LOCK	{NUMLOCK}
PAGE DOWN	{PGDN}
PAGE UP	{PGUP}
PRINT SCREEN	{PRTSC}
RIGHT ARROW	{RIGHT}
SCROLL LOCK	{SCROLLLOCK}
TAB	{TAB}
UP ARROW	{UP}
F1	{F1}
F2	{F2}
F3	{F3}

Key	Code
F4	{F4}
F5	{F5}
F6	{F6}
F7	{F7}
F8	{F8}
F9	{F9}
F10	{F10}
F11	{F11}
F12	{F12}
F13	{F13}
F14	{F14}
F15	{F15}
F16	{F16}

To enable key combinations with SHIFT, CTRL and ALT, place the code from the list below in front of the key code.

Key	Code
SHIFT	+
CTRL (CONTROL)	^
ALT	%

Automatic Call Distribution keys

If the BackStage Client is working as an Automatic Call Distribution (ACD) Agent, the ACD keys of the users's telephone can also be displayed and used in the main window of the BackStage Client.

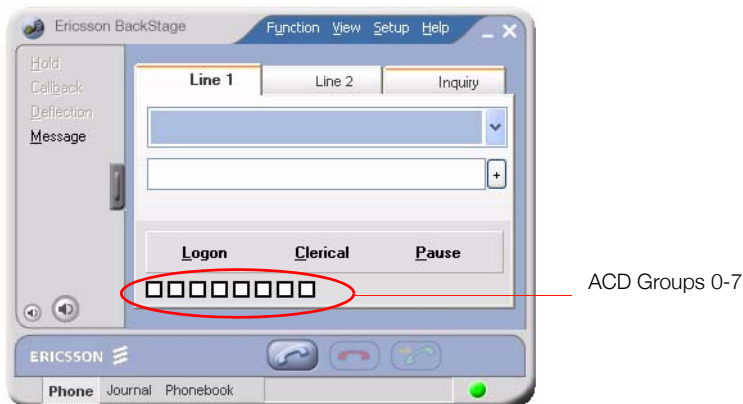
Note: The ACD keys are only supported in mode BP1 in conjunction with a digital system telephone of type Dialog 4223, Dialog 4222, Dialog 3213, Dialog 3212 and Dialog 3211.

To use the ACD keys in the BackStage Client the same keys have to be available (programmed) on the telephone as well.

Note: BackStage does not support ACD queue indication, for this purpose the telephone display or a wall mounted display in conjunction with the BusinessPhone Call Center Supervisor has to be used.

To display the ACD keys proceed as follows.

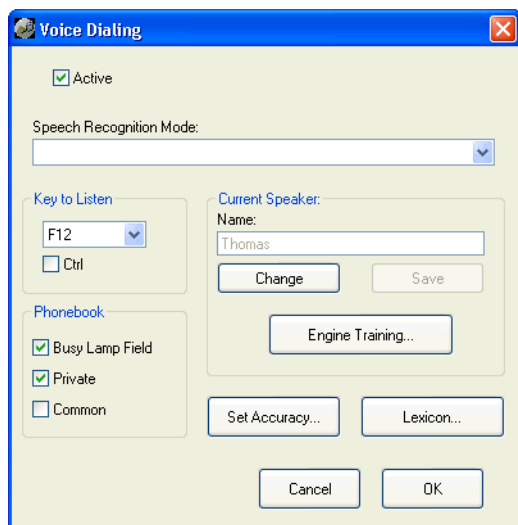
- On the view menu, click ACD
The main window is enhanced with the ACD keys.



Voice Dialing

Entries in the Phonebook and in the Busy Lamp Field can be dialed by saying the name into the PC's microphone.

- 1 To open the **Voice Dialing** dialog use following path:
Setup > Advanced Options > Voice Dialing



- 2 Enable/Disable the entire feature by clicking on the **Active** check box (checked=enabled).

At start up of BackStage or when clicking on the **OK** button of this menu, the selected phonebooks get initialized. Depending on the number of entries of selected phone books, this may take some seconds.

Speech Recognition Mode drop-down list box

This drop-down list box shows all available modes of the installed speech recognition engine(s). One engine can offer several modes; e.g.: Microsoft® offers 2 engines: **English Continuous, Microphone (Microsoft)** and **English Continuous, Telephone (Microsoft)**.

- Select the desired option in the drop-down list box.

Key to Listen group box

The **Key to Listen** group box is used to determine the key which makes the speech recognition listening.

- 1 Click on the drop-down list box and define the desired function key (default=F12).
- 2 Enable/Disable the **Ctrl** function in addition by clicking on the related check box (checked=enabled). The CTRL combination will only be necessary, if the function key is already used by another application.

This key works system wide, that means the BackStage window doesn't need to have the focus or can be in minimized state as well.

Phonebook group box

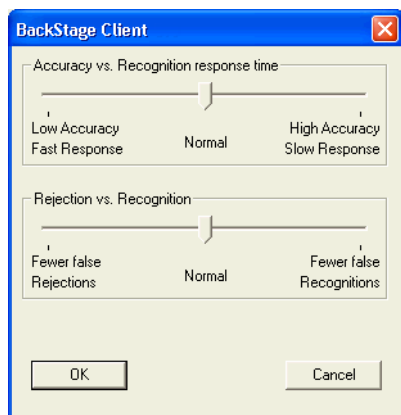
The **Phonebook** group box is used to select the phonebooks which shall be used for voice dialing. Enable/Disable the phonebooks by clicking the related check box (checked=enabled).

- **Busy Lamp Field**
- **Private**
- **Common**

Set Accuracy button

The **Set Accuracy** button is used to optimize the recognition results if they are not accurate enough.

- 1 By clicking on the **Set Accuracy** button a separate dialog pops up.



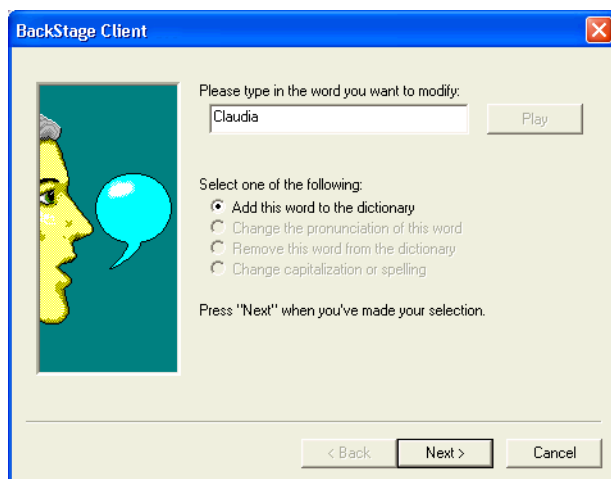
NOTE This dialog is part of the Microsoft® Speech API and not part of BackStage. The Language of this dialog will therefore not follow the settings of BackStage.

- 2 Use the sliders to modify the parameters.

Lexicon button

If names of your selected phone book are pronounced differently than expected, you can assign your own phonetic spelling.

- 1 By clicking on the **Lexicon** button a separate dialog pops up.



NOTE This dialog is part of the Microsoft® Speech API and not part of BackStage. The Language of this dialog will therefore not follow the settings of BackStage.

- 2 Follow the steps, proposed by the wizard.

Current Speaker group box

The **Current Speaker** group box is used to define the data of the respective speaker. There can be several speakers on your Windows system.

Name text box

Determines the speaker. There can be several speakers on your Windows system. Each speaker is able to train the engine to his/her pronunciation.

- To change the name click the **Change** button.

Change button

Enables the **Name** text box to enter the speaker's name.

Save button

Saves the entered speaker's name.

Engine Training button

After the Microsoft® Speech API has been installed, a basic training is necessary to get satisfying recognition results. Each speaker has his own training. Before starting the training a speaker's name must be available in the text box.

- 1 By clicking on the **Engine Training** button a separate dialog pops up.



NOTE This dialog is part of the Microsoft® Speech API and not part of BackStage. The Language of this dialog will therefore not follow the settings of BackStage.

- 2 Follow the steps, proposed by the wizard.

Expansion

Most of the Ericsson Enterprise applications are always delivered with a certain amount of user licenses. This means that if you have bought, for example, an application package with 20 user licenses, you are able to install as many applications on the PCs as licences you have. 20 users can use or start the application at the same time.

BackStage uses two different software licensing mechanisms:

1 WIBU-Key Licensing

The WIBU-Key application consists of a Software Protection Device (WIBU-Box, which is connected to the parallel port on one networked PC) and a Server/Client software. The application and the software licensing mechanism must be installed on the same network using the TCP/IP protocol.

2 BusinessPhone Licensing

The BackStage Licenses are stored in BusinessPhone (Version 7.0 or higher) and will be retrieved via the BusinessLink Server.

If you want to extend the number of user licenses to provide more employees in your company with e.g. the BackStage application on their desktop, you have to order an Expansion package. This package upgrades either the WIBU-Box or the BusinessPhone system to a new number of licenses.

NOTE In order to purchase an Expansion package follow the instructions stated in the Order Information.

The further description only focuses on the WIBU-Key expansion, for the BusinessPhone expansion please refer to the BusinessPhone Maintenance Instruction which is part of the BusinessPhone Documentation Suite.

Expansion of BackStage solutions using the WIBU-Key licensing mechanism

Delivery content

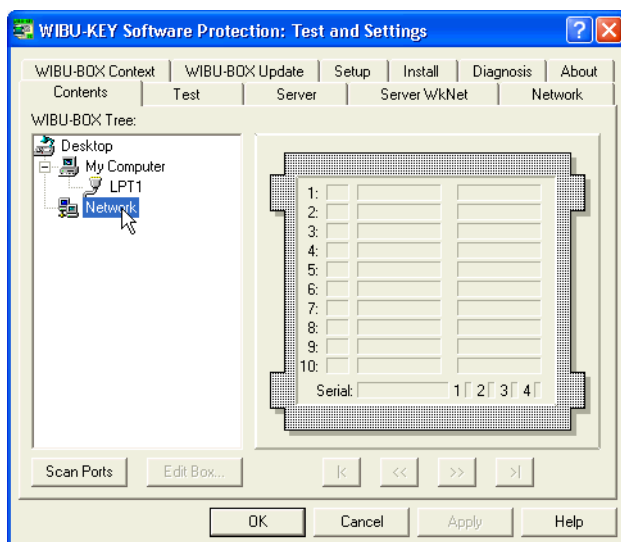
The expansion package for the WIBU-Key consists of a 3,5" floppy disc containing a WIBU-Box upgrade file (<serial-number>.rtu).

Expansion procedure

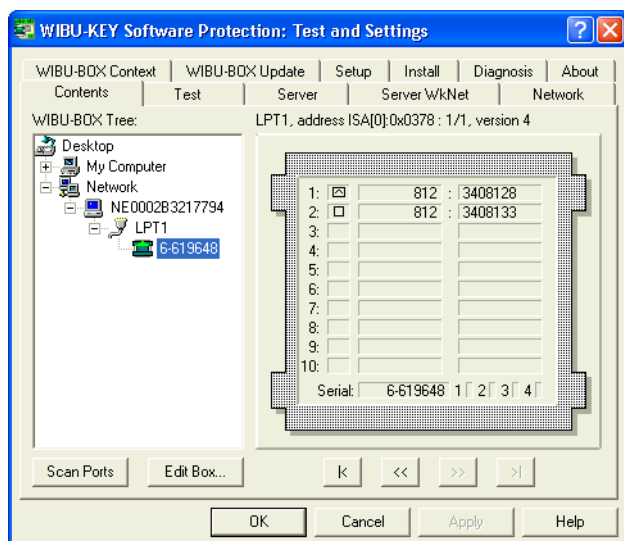
In order to purchase an Expansion package, the unique serial number of the customers WIBU-Box has to be stated on the order. The serial number of the WIBU-Box can be found on the WIBU-Box itself, on the License Agreement included in the package or can be read out via the WIBU-Key software.

To read out the Serial Number via the WIBU-Key software

- 1 Click on **Start** in the Windows taskbar.
- 2 Point to **Settings** and click on the **Control Panel**.
- 3 Click on the **WIBU-Key** Icon.
- 4 Select the **Contents** tab.
- 5 Click on the entry **Network** in the WIBU-Box Tree.



- 6 Click on the **Scan** button to search for the installed WIBU-Boxes.



- 7 The tree shows all available WIBU-Boxes in the customer's network including their unique serial numbers (X-XXXXXX).
- 8 Search for the WIBU-Box which has as first entry the following value: 812:3408128 (BackStage WIBU-Box).
- 9 When you have found the correct WIBU-Box, read out the serial number and state it on the order.

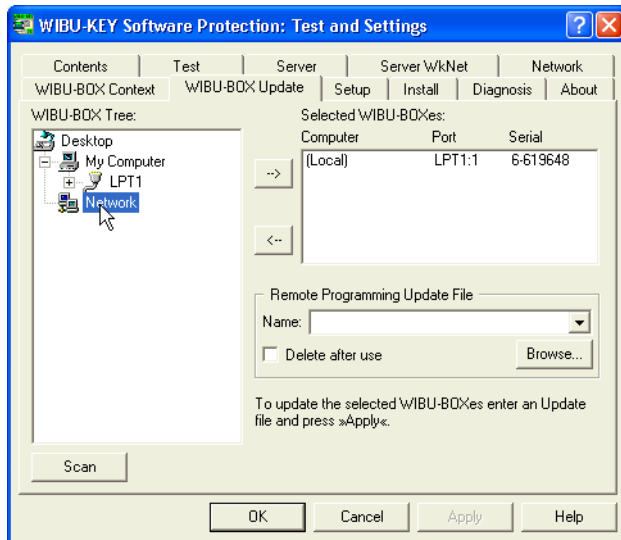
NOTE In order to verify the current number of licenses, simply subtract the first value of the WIBU-Box from the second value (According to the picture from step 6 this would be 5 users).

To update a WIBU-Box

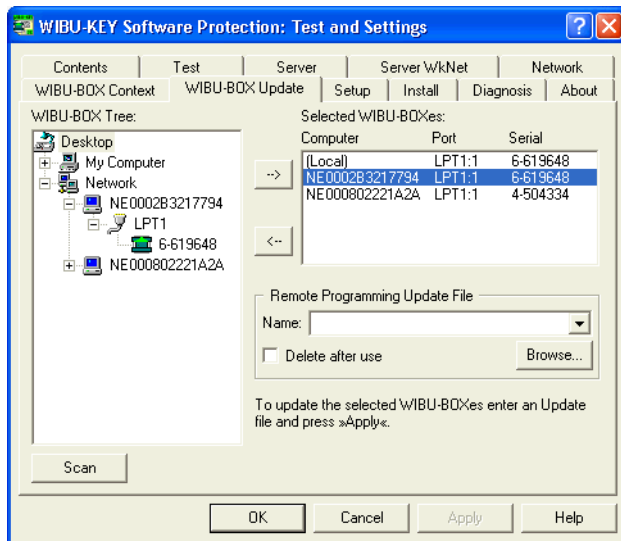
If you have ordered an expansion package for the BackStage application, you will receive a floppy disc. The file on this floppy disc contains the serial number of your WIBU-Box as well as the code for upgrading the WIBU-Box according to your order.

- 1 Click on **Start** in the Windows taskbar.
- 2 Point to **Settings** and click on the **Control Panel**.
- 3 Click on the **WIBU-Key** icon.
- 4 Select the **WIBU-BOX Update** tab.

- 5 Click on the entry **Network** in the WIBU-Box Tree.



- 6 Click on the Scan button to search for the installed WIBU-Boxes.



- 7 The selection field on the right side shows all the available WIBU-Boxes in the customer's network including their unique serial number (X-XXXXXX).
- 8 Select the desired WIBU-Box.
- 9 Select the Update File (received from Ericsson) by clicking on the **Browse** button in the **Remote Programming Update File** group box.

- 10 After you have selected the proper update file (the filename equals to the serial number of the WIBU-Box), click the **Apply** button.

The Remote Programming Update File is read and the corresponding WIBU-Box is reprogrammed.

NOTE The **Apply** button will only be enabled if one or more WIBU-Boxes are selected and a proper Update File is chosen with the Browse button.

NOTE The activation of the **Delete after use** check box, deletes the **Remote Programming Update File** after successful programming of the WIBU-Box. It is not necessary to save the Update File after reprogramming of the WIBU-Box.

NOTE A WIBU-Box with a determined **Remote Programming Update File** can be reprogrammed *only once*. A repetition of the process with one and the same Update File is not possible. An upgrade file is always related to the customer's unique serial number. The upgrade file *cannot* be used for other WIBU-Boxes having a different (not matching) serial number.

A message containing the information how many WIBU-Boxes are reprogrammed will be displayed after a successful process.

It is strongly recommended to read the Technical Guide of the **Enterprise Software Licensing** before starting any installation, upgrade or expansion procedure of the WIBU-Box.

Version upgrade

To upgrade an existing version of BackStage to a newer version (e.g.: Version 7.0 to Version 8.0) proceed as described in the steps below.

Prepare upgrade


Requirements

Make sure that you have fulfilled all the hard- and software requirements necessary for a smooth installation and use of the later BackStage version.

Install a new Server version

Proceed as follows:

- 1** Stop the BackStage Server
 - a** On the task bar, click **Start**.
 - b** Point to **Programs, Ericsson** and then click **BackStage Server xx**
 - c** Click on the menu item **BackStage Server Configuration**
The program starts and the main window opens on your screen
Start the BackStage Server configuration
 - d** Click on **Service** in the menubar
 - e** Click on **Stop BackStage** in the shortcut menu to stop the service
 - f** Close the application
- 2** Uninstall the existing BackStage Server version
 - a** Click the **Start** button, point to **Settings**, and then click **Control Panel**.
 - b** Double-click the **Add/Remove Programs** icon.

The image shows the 'Add or Remove Programs' icon from the Windows Control Panel. It features a circular icon with a blue and green design, and the text 'Add or Remove...' is displayed below it.
 - c** Follow the steps described in the uninstall wizard.

- 3** Install the new BackStage Server version according to the instructions stated in chapter “[Install BackStage Server](#)” on page 25.
- 4** Start the Windows Explorer
- 5** Start the BackStage Server
 - a** On the task bar, click **Start**.
 - b** Point to **Programs, Ericsson** and then click **BackStage Server xx**
 - c** Click on the menu item **BackStage Server Configuration**

The program starts and the main window opens on your screen. A message informs you that the Server has been updates with the customer data of the previous installation.
 - d** Click on **Service** in the menubar
 - e** Click on **Start BackStage** in the shortcut menu to stop the service
 - f** Close the application

Install a new Client version

Proceed as follows:

- 1 Follow the steps stated in chapter [“Basic installation”](#) on page 24.
- 2 After the installation follow the steps stated in chapter [“BackStage Client configuration on the user’s computer”](#) on page 48 if necessary.

Note: When upgrading the BackStage Client to a higher Version (e.g. Version 7.0 -> Version 8.0) the existing user data (e.g.: C:\Documents and Settings\user\Application Data\BackStageClient70) will be considered by the new Client version as well. When starting the new Client version the first time the existing data will be read out, converted to the new parameter structure and be stored into a new C:\Documents and Settings\.... directory which reflects to the new version. The same applies for Clients of the same version however of a different build number whereby the C:\Documents and Settings\.... directory will remain the same.

- 3 When upgrading from a BackStage version older than 7.0 to the latest one due to the need of a BackStage Server connection please consider the following:
 - The complete Journal data (except Messages) will be lost as far as the BackStage Client connects the first time to the BackStage Server.
 - If Call profiles were set in the previous Client installation, they have to be re-confirmed in order to be active also on the BackStage Server. To do so, simply open the Call Profile dialog and close it again.

4 Uninstall the former BackStage Client version

- a Click the **Start** button, point to **Settings**, and then click **Control Panel**.
- b Double-click the **Add/Remove Programs** icon.



- c Follow the steps described in the uninstall wizard.

Note: The uninstall wizard removes all files which have been installed with the former Installation procedure. Files which have been added manually or generated will not be removed, which means that former used directories will remain. Please check if there is still a need for the data stored in these directories, otherwise delete the directories completely.

Following directories are created by the BackStage Client:

- C:\Program Files\Ericsson\BackStageClientXX
- C:\Documents and Settings\user\Application Data\BackStageClientXX


(XX corresponds to the used Client version e.g. version 7.0 =70)

Version update

A version update (also known as hot fix) will normally only be necessary to fix faults. Compared to the version upgrade the main version number will be kept, only the numbers after the second dot will be changed (e.g.: update Client 7.0.0.43 to Client 7.0.0.44).

Hotfixes for the BackStage Client and BackStage Server can be downloaded from the Ericsson Service Plaza which is part of the Ericsson Partner Network. Hotfixes will not be offered as install able files, particular faulty files are available in compressed form which need to be decompressed in the directory of the Server or the Client.

Note: Before you can update the BackStage Server you always have to stop the service via the BackStage Configuration Tool.

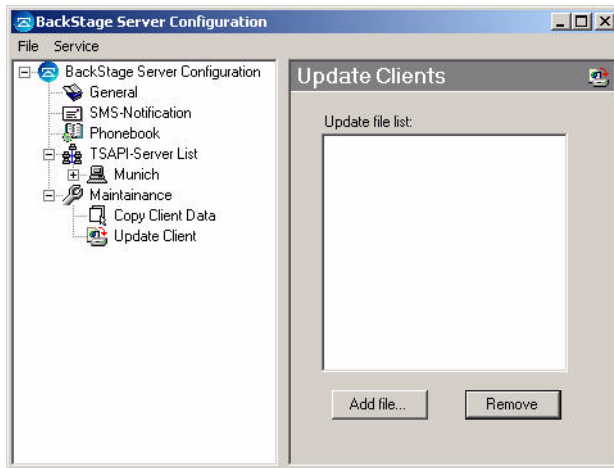
To simplify the update procedure for the BackStage Clients the BackStage Server supports an automatic update procedure towards its Clients. As far as an update version is stored on the Server all Clients will be notified during the connection establishment via a separate Journal entry (see entry with special warning symbol ). To install the update, the user has to right click this journal entry and to select the item **install** in the shortcut menu.

Add a hotfix to the update file list

Proceed as follows on the BackStage Server:

- 1** Download the hotfix (Client.exe) from the Ericsson Service Plaza to a temporary directory on the BackStage Server
- 2** On the task bar, click the **Start** button.
- 3** Point to **Programs, Ericsson** and then to **BackStage Server 8.0**
- 4** Click on the menu item **BackStage Server Configuration**
The program starts and the main window opens on your screen.

- 5 Click on the entry **Maintenance - Update Client** in the tree view.



- 6 Click the **Add file....** button to browse for the **Client.exe** file.
By importing the hot fix any previously installed hot fix will be overwritten.

Note: The update Client function is prepared to update several files on the Client side, however in Version 8.0 only the Client.exe file is supported.

Remove a hotfix from the update file list

To remove a hotfix from the update file list proceed as follows:

- 1 Follow the steps 1-5 of the chapter [“Add a hotfix to the update file list”](#) on page 100.
- 2 Select the **Client.exe** file in the **Update file list** and then click the **Remove** button.

Note: A removal from the update file list, does not delete the hotfix-files from the Server.

Appendix A - Additional Information

BackStage Server Data exchange

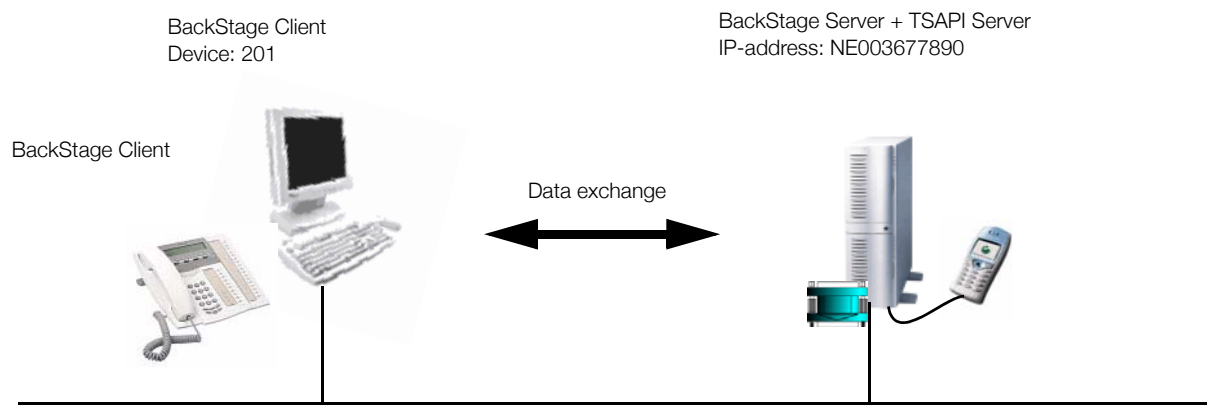
This chapter describes the interworking between the BackStage Client and the Server in sense of storing and provisioning of User settings, User Call Profile and User Journal data.

Data Storage

The user files are stored on the BackStage Server in a separate DATA Directory. To distinguish the different files, the filenames are created based on following syntax:

[Data type]_[Device number]_[Computer name of dedicated TSAPI Server].TXT

Example:



Data Storage:

Client: C:\Documents and Settings\user\Application Data\BackStageClient70

Server: C:\Program Files\Ericsson\BackStageServer70\Data

Data Type	Client	Server
Boot Settings	CLIENTBOOT.INI	(no data exchange)
User Settings	CLIENT.INI	CLIENTDATA_NE003677890.TXT
Journal	JOURNAL.TXT	JOURNAL_201_NE003677890.TXT *)
Call Profile	CALLPROFILE.TXT	CALLPROFILE_201_NE003677890.TXT

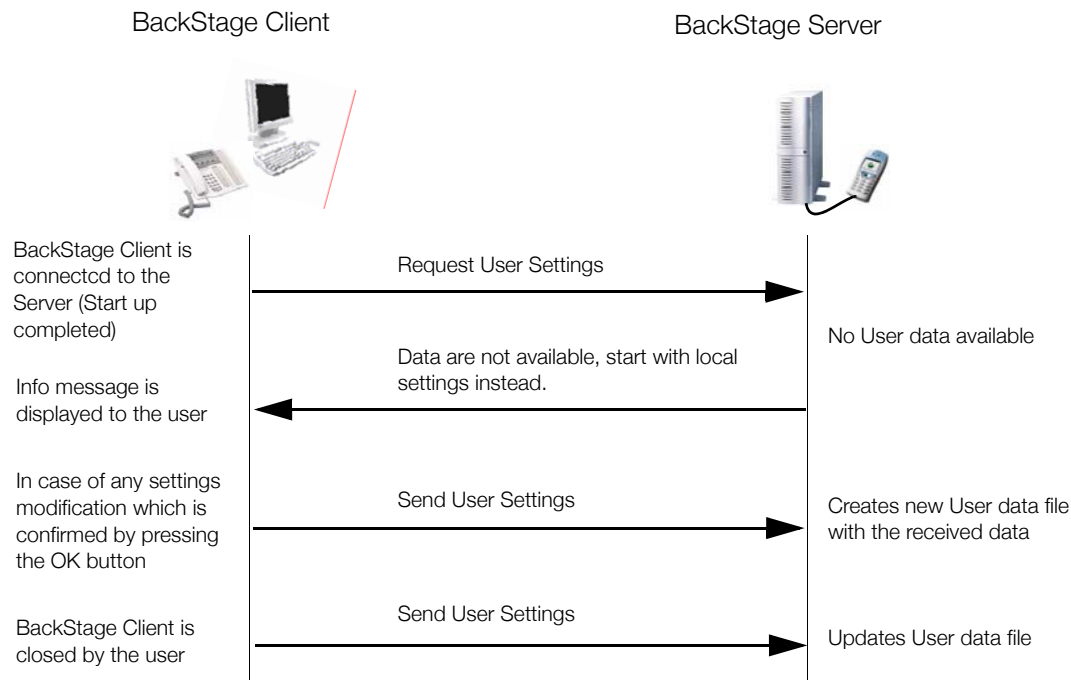
*) Due to security reasons (personal call data of the Clients) the Journal data is encrypted.

Initialize Data (first connection between Client and Server)

When the Client builds its absolute first connection to the BackStage Server and the connection is established, the user data on the Server will be initialized in the following way.

Note: In order to be able to connect to the BackStage Server, the BackStage Client has to be registered on the Server. In most cases the BackStage Server will be configured to **“Add devices automatically”** which means the BackStage Clients register themselves to the Server when connecting the first time. If the parameter **“Add devices automatically”** is not enabled on the Server, all Clients which shall have access to the Server need to be registered manually by using the BackStage Server Configuration tool.

User Settings



Call Profile

BackStage Client



BackStage Server



Call Profile exists?

Yes

(due to upgrade from a previous Client version).
To re-confirm these settings at least the Call Profile Dialog has to be opened once.

Send Call Profile data

Creates new User Call Profile file with the received data

No

The user sets up the Call Profile the first time.

Send Call Profile data

Creates new User Call Profile file with the received data

Journal data

BackStage Client



BackStage Server



BackStage Client starts up the connection to TSAPI Server

Request Connection

Creates new Journal data file

Acknowledge

BackStage Client is connected to the TSAPI Server (Start up completed)

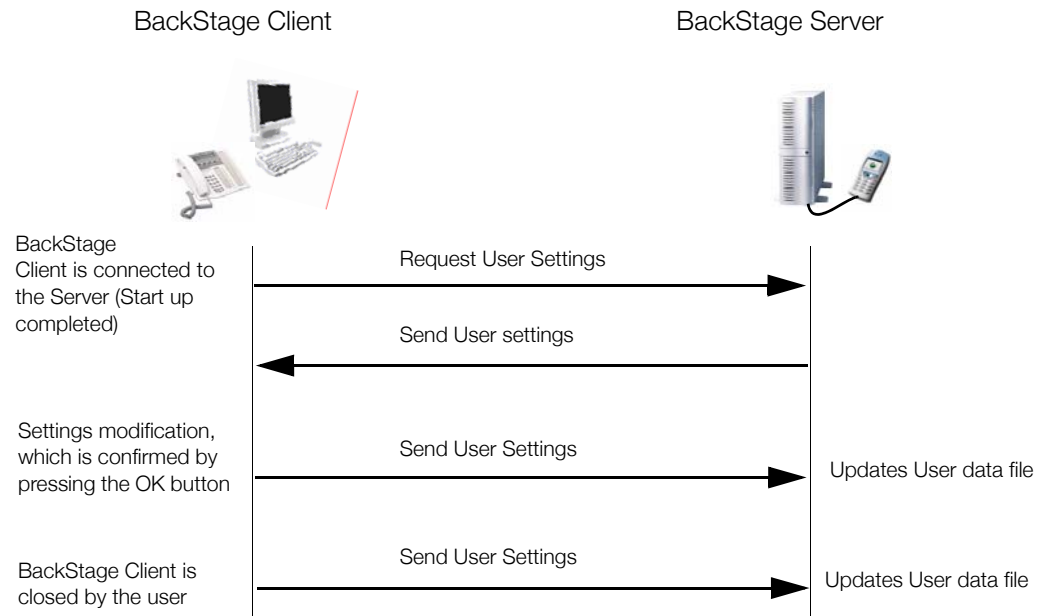
Request Journal data

Send Journal Data and overwrite the Data on the Client site

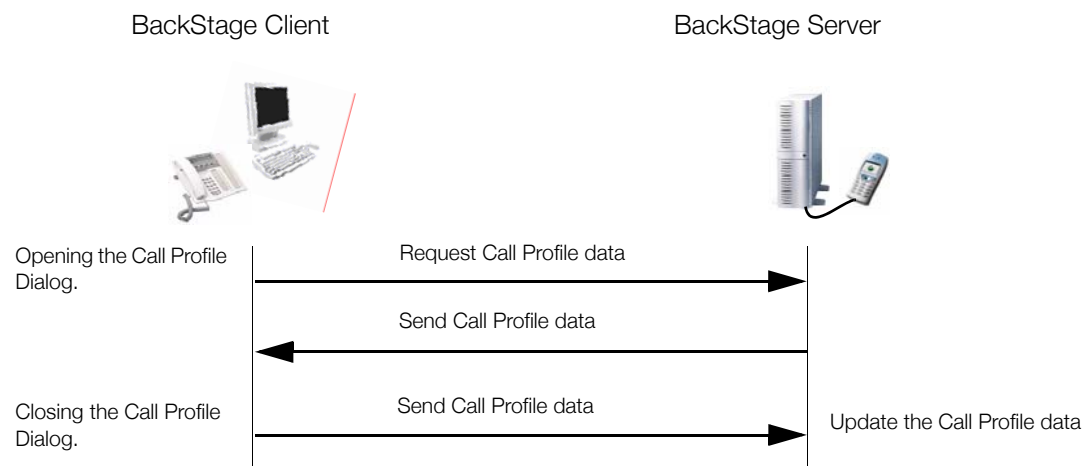
Data exchange (Client data exists on the Server)

As far as the Client data file exists on the BackStage Server, the following data exchange takes places when the Client connects itself to the Backstage Server.

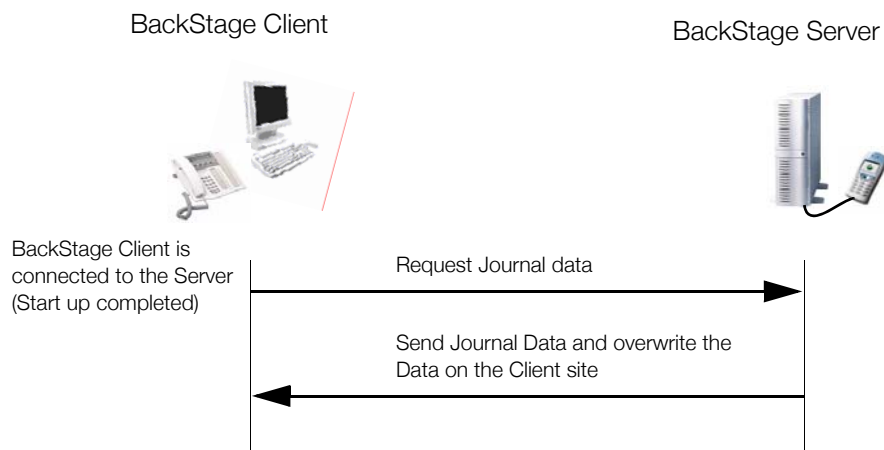
User Settings



Call Profile



Journal data



Computer Telephony - Monitor Light

The **Monitor light** parameter is part of the *Client.ini* file and defines whether the entries in the Busy Lamp Field shall be indicated with the **standard (Monitor light=no)** or with a **limited (Monitor light=yes)** number of feature options.

Note: The Feature Level parameter is not applicable for the modes BP4, MDE1 and MDE2.

The **Monitor light** parameter has a direct relation to the allocation of Computer telephony licenses (=number of possible CT monitors) in the BusinessPhone system.

- **Monitor light=no (default)**
A CT monitor is set for every extension entry in the Busy Lamp Field.
- **Monitor light=yes**
No CT monitor is set for the Busy Lamp Field entries.

The default value **Monitor light=no** is normally not critical, if the customer has either bought enough Computer telephony licenses (80 users) or the supervised extensions are also using the BackStage Client. In the latter case, both the entry in the the Busy Lamp Field and the other BackStage Clients are using the same CT monitor.

It becomes only critical, if the customer has bought very view Computer telephony licenses (e.g. 2 or 5 users) and the supervised extensions in the Busy Lamp Field are not using the BackStage Client. In order to avoid that a license error message will be displayed during start up, it is recommended to set the parameter to **Monitor light=yes**.

Limitations:

If the parameter is set to **Monitor light=yes**, the following options are not available in the Busy Lamp Field:

- Diversion setting for the extensions in the Busy Lamp Field
- Absence info setting for the extensions in the Busy Lamp Field
- No indication of set diversions
- When starting up the BackStage Client, the indicator lights of the Busy Lamp Field are not active immediately. Each indicator light becomes active after the first status change of it's dedicated entry.

Start of BackStage using local data files

On multi-user systems (Windows NT4.0, Windows 2000 or Windows XP) BackStage normally uses it's configuration files located in the current users profile directory

e.g.: C:\Documents and Settings\MyUser\Application Data\BackStageClientXX
(XX = describes the version eg. Version 8.0=80).

If you want to run more than one BackStage simultaneously on the same machine (e.g.: in order to watch the Busy lamp field of several PBXs) you can force BackStage to use the data files located in the applications directory (default: *C:\Program Files\Ericsson\BackStageClientXX*).

You can achieve this by starting BackStage with the parameter *local*.

Example:

C:\Program Files\Ericsson\BackStageClientXX\Client.exe local

If you want to start BackStage via a shortcut, you can add the parameter *local* to the shortcut properties.

The following files are necessary for BackStage:

- *Client.ini*
- *Journal.txt*
- *Videobackground.txt*
- *Callprofile.txt*

Pop up for supervised transferred calls

To achieve a pop up at receiving supervised transferred calls, modify the respective parameter in the *Client.ini* file.

- TransfCallAsIncoming=yes (default: no)

If the data string is set to “yes”, a supervised transferred call is treated as a new incoming call. The user will get the ring tone again and a pop up menu will be triggered.

Slow down data traffic in big systems

If a user runs several BackStage Clients on one and the same PC having a lot of devices configured, it could be helpful to switch to the low traffic mode.

The following parameter has to be modified in the *Client.ini* file to switch to the low traffic mode:

- SlowMonitor=yes (default: no)

If the low traffic mode is selected, BackStage will request information from the BusinessLink for Windows or the C-Link Server with a slower data rate (example: One information request per device of the busy lamp field per second).

In this mode BackStage needs more time to build up the busy lamp field at start up time.

Appendix B - LDAP Basics

This chapter provides you with a comprehensive information about LDAP in order to connect BackStage to a customer's directory service.

What does LDAP mean

LDAP (Lightweight Directory Access Protocol) is a protocol for accessing and managing directory services.

How directory services work

A directory consists of entries containing descriptive information. For example, a directory might contain entries describing people or network resources, such as the BackStage Server. The descriptive information is stored in the attributes of the entry. Each attribute describes a specific type of information. For example, attributes describing a person might include the person's full name (common name, or cn), surname (sn), givenname, telephone number, and e-mail address.

A directory service is a distributed database application designed to manage the entries and attributes in a directory. A directory service also makes the entries and attributes available to users and other applications. For example, a user might use the directory service to look up someone's telephone number. Another application might use the directory service to retrieve a list of e-mail addresses.

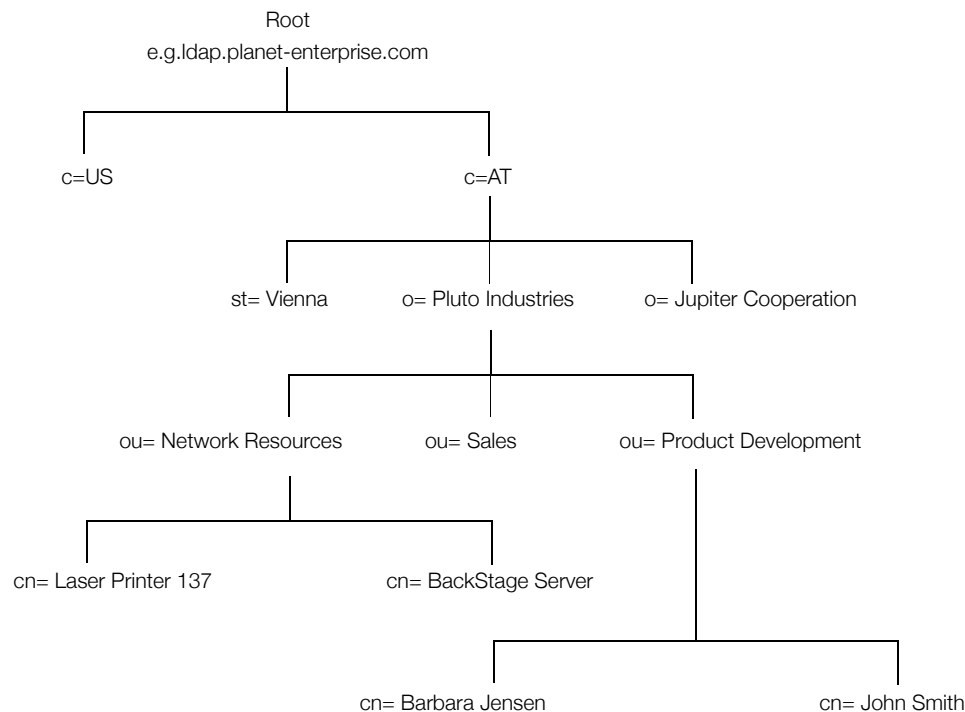
LDAP is based on a Client-Server model. LDAP Servers provide the directory service, and LDAP Clients (e.g the BackStage Server) use the directory service to access entries and attributes.

How LDAP Servers organize directories

Because LDAP is intended to be a global directory service, data is organized hierarchically, starting at a root and branching down into individual entries. Entries are typically arranged geographically and by organization.

At the top level of the hierarchy, entries represent countries or international organizations. Examples of entries are the United States or Austria (countries) or Pluto Industries (an organization). Under each country entry in the hierarchy might be entries for states or provinces or national organizations. The hierarchy might end with entries for people or resources.

The example below illustrates a hierarchy of entries in an LDAP directory service.



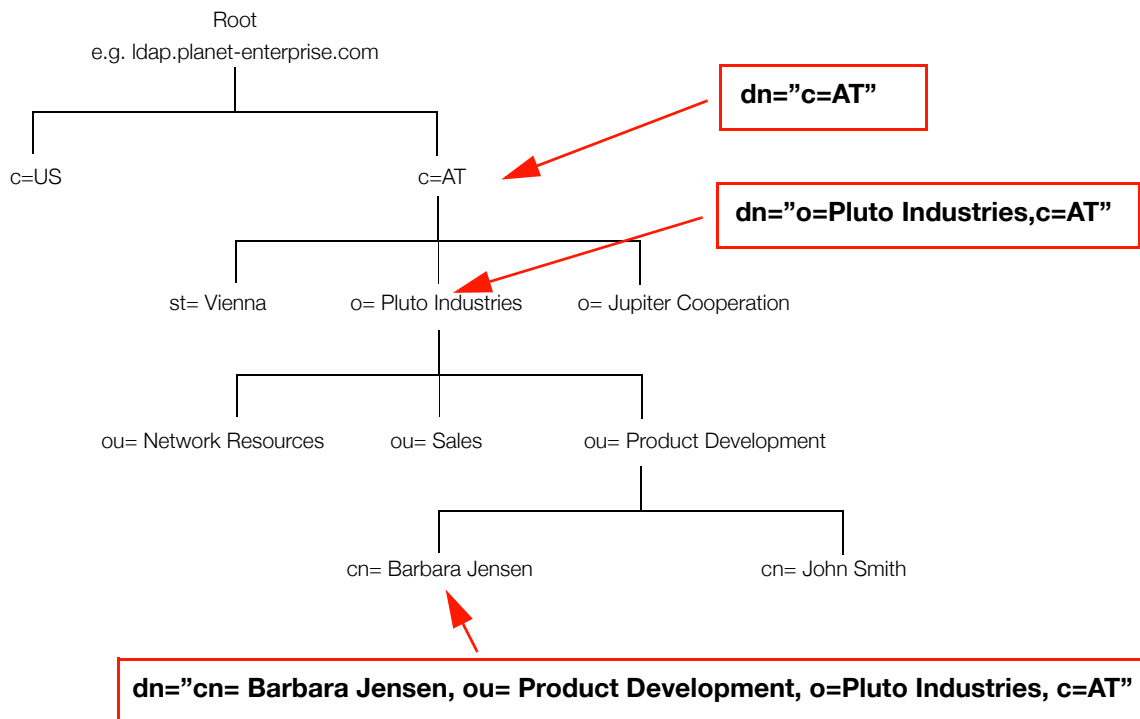
Each entry is uniquely identified by a distinguished name (DN). A distinguished name consists of the name of an entry (for example, Barbara Jensen) and a path of names tracing the entry back to the root of the tree.

For example, this might be the distinguished name for the Barbara Jensen entry:

cn=Barbara Jensen, ou=Product Development, o=Pluto Industries, c=AT

Here, cn represents the common name (full name) of the entry, ou represents the organizational unit (such as a department or a division) in which the entry belongs, o represents the organization in which the entry belongs, and c represents the country to which the entry belongs.

The following diagram shows how distinguished names are used to identify entries uniquely in the directory hierarchy.



At any level of the directory hierarchy, a component of a distinguished name is itself a distinguished name. For example, at the country level in the directory hierarchy, the component `c=AT` is a distinguished name that uniquely identifies the entry for Austria at that level.

Distinguished Name syntax

The traditional syntax for a DN string representation is as follows:

`cn=common name, [street=address, l=locality, st = state or province, ou=organizational unit, o=organization], c=country name`

Generally a DN begins with a specific common name, and (reading from left to right) proceeds with increasingly broader areas of identification until the country name is specified. The DN attributes must be separated by comma (,) and can optionally use a space () following the separator.

Distinguished Name attributes

The various standard attributes that comprise a DN are as follows:

- **c=country**
Identifies the name of the country under which the entry resides. Example: c=US
- **cn=common name**
Required attribute that identifies the person or object defined by the entry. Example: cn=John Smith
- **l=locality**
Identifies the locality in which the entry resides. The locality could be a city, county, township, or other geographic region. Example: l=Vienna
- **o=organization**
Identifies the organization in which the entry resides. Example: o= Pluto Industries
- **ou=organizational unit**
Identifies a unit within the organization. Example: ou=Sales
- **st=state or province name**
Identifies the state or province in which the entry resides. Example: st=Vienna
- **street =street address**
Identifies the street address at which the entry resides. Example: street=Pottendorfer Street

How LDAP Clients and Servers work

In the LDAP Client-Server model, LDAP Servers make information about people, organizations, and resources accessible to LDAP Clients. The LDAP protocol defines operations that Clients use to search, add, update, delete or renaming the entries in the directory.

The LDAP protocol also defines a simple method for authentication. LDAP Servers can be set up to restrict permissions to the directory. Before an LDAP Client (in our case the BackStage Server) can perform an operation on an LDAP Server, the Client must authenticate itself to the Server by supplying a distinguished name and password. If the user identified by the distinguished name does not have permission to perform the operation, the Server does not execute the operation. In other words, the BackStage Server has to be added to the directory as well in order to get the distinguished name and password.

Searching the directory

To search the directory, you need to specify the following information:

- a starting point (where to start searching). For example, if you want to search all entries under Pluto Industries, your starting point is the entry `dn="o=Pluto industries, c=AT"`.
- the scope of the search (how much of the directory to search). You can narrow the scope of the search to find a particular entry, to find all entries at one level under the starting point, or to find all entries at all levels under the starting point. The BackStage Server uses the latter one.
- a search filter (what to search for). A search filter can be as simple as 'find entries where the surname (sn) is Jensen' or as complex as 'find entries that belong to Department #17 and whose first names start with the letter F'.

Search Syntax

When you search the directory, you use a search filter to define the search. Here is the basic syntax for a search filter:

[attribute operator value]

Here is a simple example of a search filter:

(cn=Barbara Jensen)

In this example, `cn` is the attribute, `=` is the operator, and `Barbara Jensen` is the value. The filter finds entries with the common name Barbara Jensen.

Basic operators for search filters

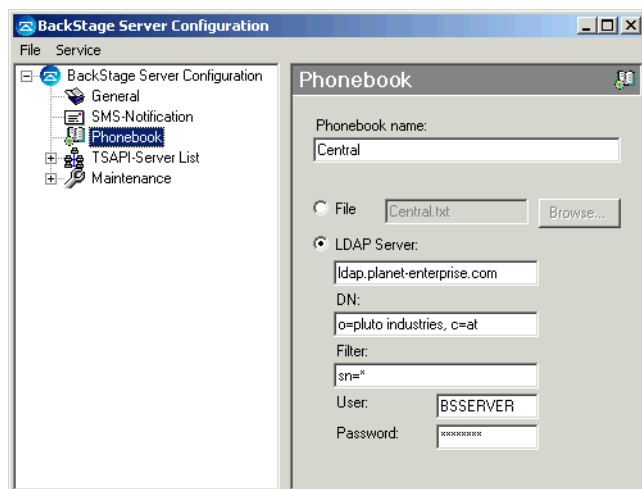
Operator	Description	Example
=	Returns entries whose attribute is equal to the value.	(cn=Barbara Jensen) finds the entry "cn=Barbara Jensen"
>=	Returns entries whose attribute is greater than or equal to the value	(sn >= jensen) finds all entries from "sn=jensen" to "sn=Z..."
<=	Returns entries whose attribute is less than or equal to the value	(sn <= jensen) finds all entries from "sn=a..." to "sn=jensen"
=*	Returns entries that have a value set for that attribute.	(sn=*) finds all entries that have the sn attribute.
~=	Returns entries whose attribute value approximately matches the specified value. Typically, this is an algorithm that matches words that sound alike.	(sn ~= jensen) finds the entry "sn = jansen"

Search configuration example on the BackStage Server

Example:

The Austrian daughter company of Planet Enterprises, Pluto Industries bought a BackStage solution. Via the BackStage Client the users shall have access to the Austrian directory which is part of a company wide directory service (ldap.planet-enterprise.com). The directory shall list the surnames (sn) of the employees. The system administrator has assigned a DN and a password to the BackStage Server (Name: BSSERVER, Password: BSSERVER).

In order to upload a customers directory service into the BackStage Server, the parameters have to be set as shown in the picture below.



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