



Whitepaper
May 2010

Faxing with BPOS and OfficeMaster BPE*) “BPOS Edition”

*) OfficeMaster BPE is an integral part of OfficeMaster Version 4.x, the newest Version of OfficeMaster released in May 2010.

Copyright and Legal Notice

Copyright © 2009 Ferrari electronic AG. All rights reserved. No part of this document may be copied, in any way, without written approval from Ferrari electronic AG. All trademarks mentioned are registered trademarks of the particular trademark holder. The information contained in this document has been gathered with greatest care. However the possibility of incorrect details cannot be completely excluded. Ferrari electronic AG does not accept liability for any errors and their consequences.

1 Table of Contents

| | | |
|-----|-------------------------------|---|
| 1 | Table of Contents | 1 |
| 2 | Introduction..... | 2 |
| 2.1 | Client side integration..... | 2 |
| 2.2 | Server side integration | 2 |
| 3 | On-Premises requirements..... | 2 |
| 4 | Inbound faxing..... | 5 |
| 5 | Outbound faxing..... | 5 |
| 6 | Product Information | 6 |
| 7 | Technical Annex..... | 6 |

2 Introduction

Microsoft Online Services is offering a comprehensive collection of business communications applications as a service “in the cloud” which is called Business Productivity Online Standard Suite (BPOS). This solution includes hosted communication and collaboration tools featuring simplified management, integrated security and high availability.

Customers interested in migrating to BPOS have to check if they would lose important features currently available on-premises. At least in EMEA region fax is still considered as an essential part of business communications. It is typically integrated into e-mail environments like Microsoft Exchange Server which is a leading solution in that area.

There are several third party fax solutions available for Exchange like “OfficeMaster for Exchange” with many thousands of customers. Since BPOS includes hosted Exchange Servers customers may expect that they could use such a solution with BPOS. Due to the nature of hosted services this is not possible since necessary customizations of Exchange and Active Directory cannot be implemented. As a leading computer fax vendor Ferrari electronic has developed concepts to offer their customers integration of on-premises fax (and SMS) solutions into BPOS.

There are two different basic approaches:

2.1 Client side integration

This solution is already available. It uses a MAPI Transport Provider which is added to the Outlook profile to support address type “FAX”. It connects locally to OfficeMaster and is responsible for sending and receiving fax documents. All sent and received faxes are stored in BPOS information store, just like any other e-mail message. This solution is described in detail in a separate whitepaper available from Ferrari electronic. There are some minor drawbacks in this approach: Faxing is only possible using locally connected clients (or at least connected via VPN) – using Outlook Anywhere from outside would not support faxing.

2.2 Server side integration

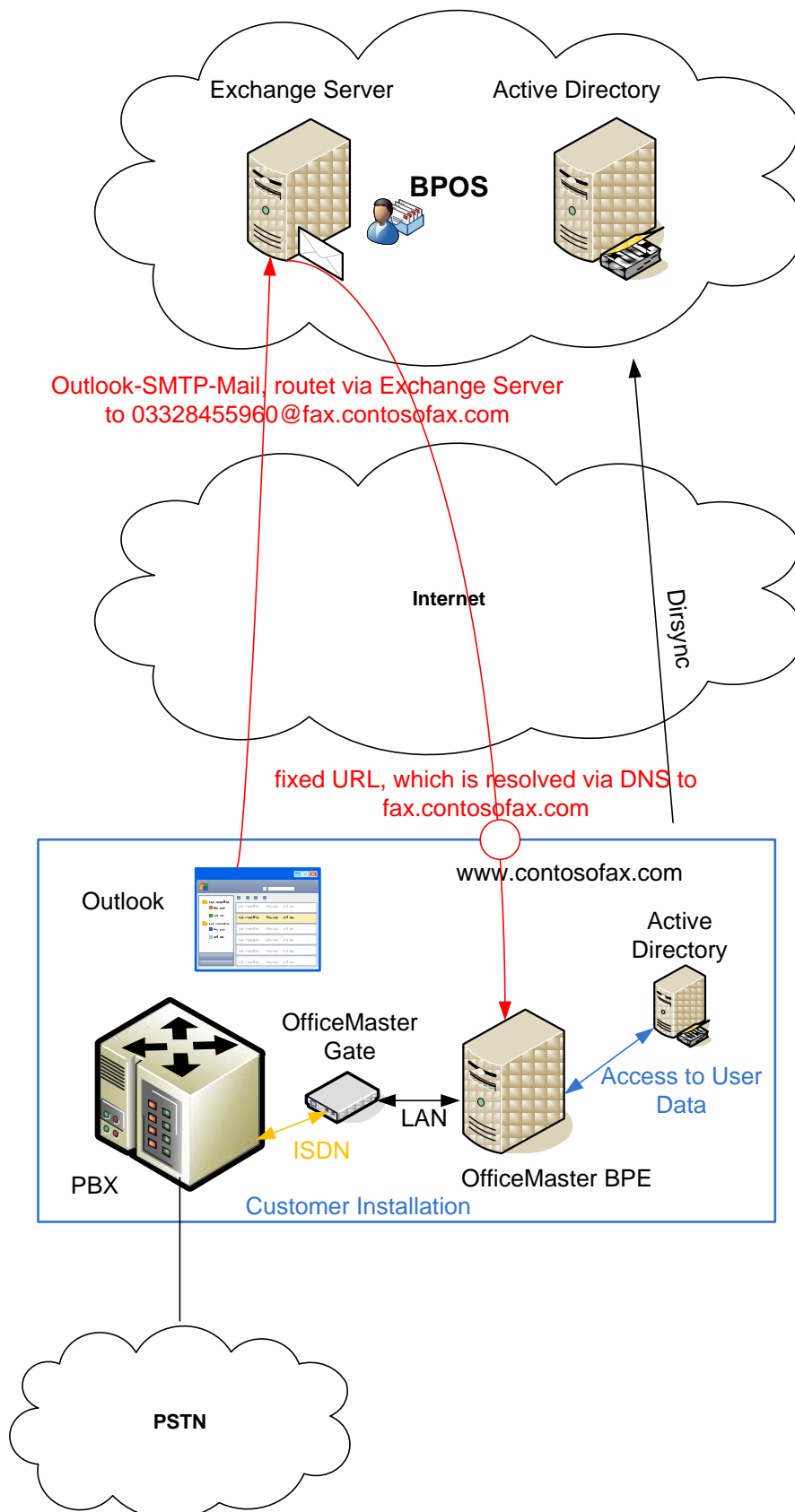
For many customers a server-based integration would be the best solution. They want to use on-premise equipment connected to PSTN to support local fax numbers already known to their customer base. As mentioned above a fully integrated installation cannot be done with BPOS therefore a specialized solution has to be implemented. “OfficeMaster BPOS Edition” is described in the following chapters.

3 On-Premises requirements

Due to the restrictions imposed by BPOS this solution requires some preconditions:

- Customer must use Active Directory
- Exchange 2007/2010 schema has to be deployed (in a proof-of-concept installation an eval version of Exchange 2007 SP2 was used to run “**setup /prepare schema**” and “**setup /prepare ad**” – no Exchange installation is necessary!
- Dirsync must be running permanently, so BPOS user accounts have to be created and administered in local AD which contains all user properties while BPOS gets a subset of these through unidirectional replication
- Admin snap-ins from “OfficeMaster for Exchange” must be installed; this enables a tab in AD user and computer manager where e-mail and fax addresses can be entered and other fax properties are maintained
- The customer must have an IP address which can be resolved via DNS

If these requirements cannot be met the customer has to use client side integration.



4 Inbound faxing

Faxes are received through locally installed OfficeMaster hard- and software. Users typically are assigned dedicated fax extensions which are maintained as proxy addresses of address type FAX. Immediately after receiving the fax OfficeMaster finds the desired recipient through lookup in AD, e.g. via FAX:346. If no user is found with this extension the fax is forwarded to a default recipient (postmaster).

All fax attributes of the selected recipient are read from AD (fax properties are stored in one of the extension attributes; therefore no schema update is used). The fax document is converted into the format which is selected for this user (PDF, TIFF ...) and sent to his primary SMTP address so the fax arrives like any other e-mail at the inbox.

5 Outbound faxing

Since BPOS does not understand FAX address type all faxes must be sent using SMTP-addressing.

An example should demonstrate that:

The customer Contosofax Inc. is using an IP address which can be resolved via contosofax.com. OfficeMaster BPE installed on-premises is ready to receive SMTP mails from BPOS IP address space, all other mail attempts are ignored.

Users in the cloud send faxes using addresses like faxnumber@contosofax.com, e.g. 03328455346@contosofax.com. These messages may include attachments which will be rendered into fax format by OfficeMaster BPE. After receiving such messages, OfficeMaster BPE uses the sender's SMTP address to lookup the user in local AD. Important information needed for handling outbound faxing is taken from AD:

- Permission – is this user allowed to send faxes?
- Is there any personal fax CSID, headline, cover page configured?
- Properties to be filled in cover page form
- And more...

After processing this information and rendering all attachments the fax is sent and afterwards a fax sender report is mailed back to the original sender.

A separately installable Outlook client extension would implement additional convenience for fax users: It could enable users to use pure phone numbers for faxing (without domain part) or FAX addresses stored in Outlook contacts – both would be automatically converted to the above described SMTP addressing scheme. Note that these features are not available when using OWA.

6 Product Information

The standard OfficeMaster fax connector for Exchange used MAPI to decode all properties (RTF, attachments, fax specific Outlook properties and accesses to address books) of an Outlook mail which should be converted to fax. The usage of MAPI required a local access from the connector to the Exchange server. In order to maintain all those features while operating in the BPOS environment, it was necessary to implement an independent TNEF (Transport Neutral Encapsulation Format) decoder into the new connector.

The Unified Messaging Suite OfficeMaster (Version 4) contains two connectors:

- the standard connector that uses MAPI for decoding mails and for accessing user mailboxes to read their voicemail attachments and
- the new BPOS/TNEF connector which supports fax and SMS but no voicemail. In the administration of OfficeMaster either connector can be selected.

Though fax service for Microsoft Online Services is the main focus of the product described it should be mentioned that Short Message Service (SMS) is always included in the solution. If the PSTN provider supports SMS for his network no additional equipment is needed to send SMS as an Outlook mail via OfficeMaster. As an alternative the Universal Computer Protocol (UCP) can be used to utilize the SMS services which providers are offering via internet.

The OfficeMaster BPE solution described is installed at customer's premises. To send or receive faxes OfficeMaster Gate is used as Unified Messaging controller which connects the OfficeMaster Software to a pbx.

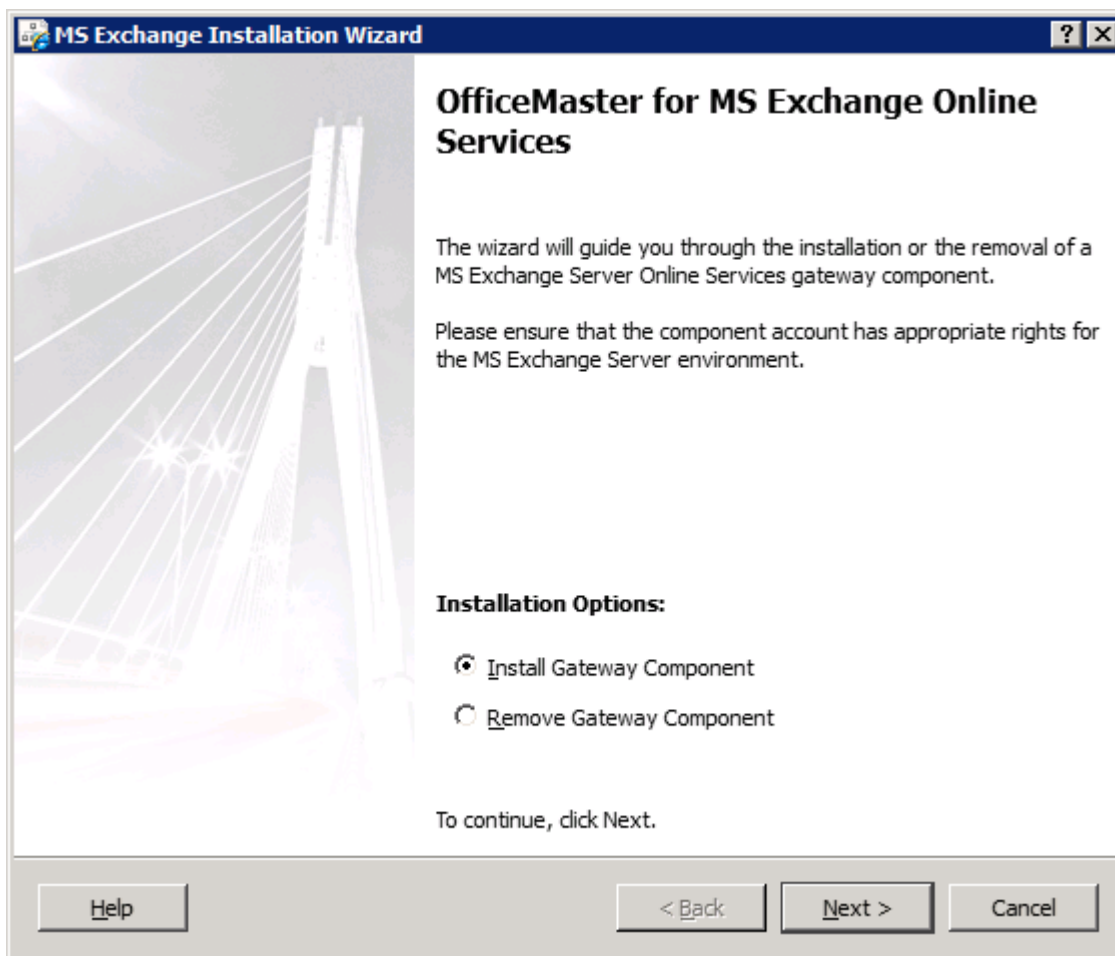
Based on that technology it is also possible to create hosted fax services for BPOS customers. In that case the most important requirement is to maintain the customer's inbound fax numbers. There are several ways to achieve this but a detailed discussion goes beyond the scope of this paper. For more information please contact H. Fetzer (fetzer@ferrari

OfficeMaster is available in three versions: für 10, 25 and an unlimited number of users.

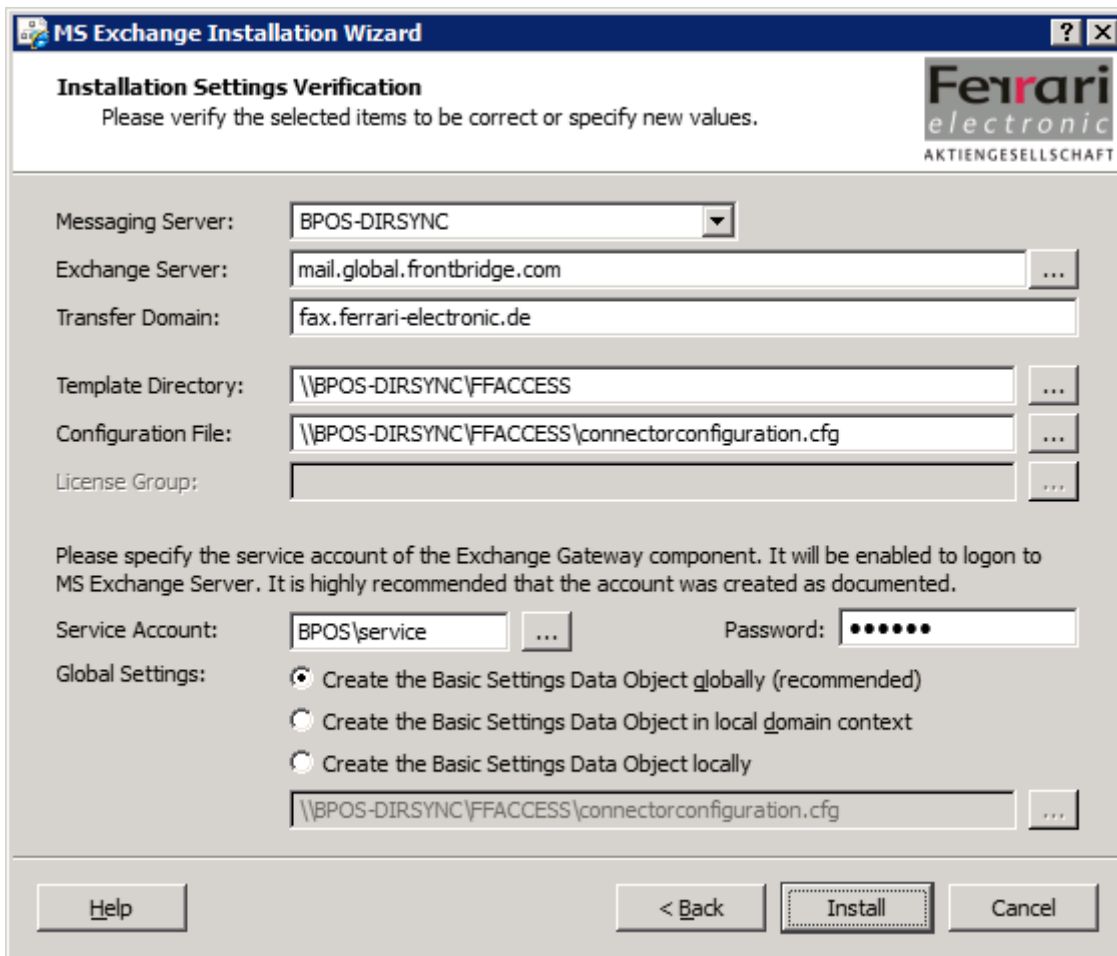
For pricing information please contact our Sales Department (+49 3328455991).

7 Technical Annex

The following screenshots illustrate the setup and the administration of OfficeMaster BPE without detailed textual description. These screenshots will allow administrators to get an impression how the installation and administration of OfficeMaster BPE works. Detailed information will be provided in a manual which can be downloaded from the Ferrari electronic homepage.



Installation wizard for the gateway component itself.



MS Exchange Installation Wizard

Installation Settings Verification
Please verify the selected items to be correct or specify new values.

Messaging Server: BPOS-DIRSYNC

Exchange Server: mail.global.frontbridge.com

Transfer Domain: fax.ferrari-electronic.de

Template Directory: \\BPOS-DIRSYNC\FACCESS

Configuration File: \\BPOS-DIRSYNC\FACCESS\connectorconfiguration.cfg

License Group:

Please specify the service account of the Exchange Gateway component. It will be enabled to logon to MS Exchange Server. It is highly recommended that the account was created as documented.

Service Account: BPOS\service Password: ●●●●●●

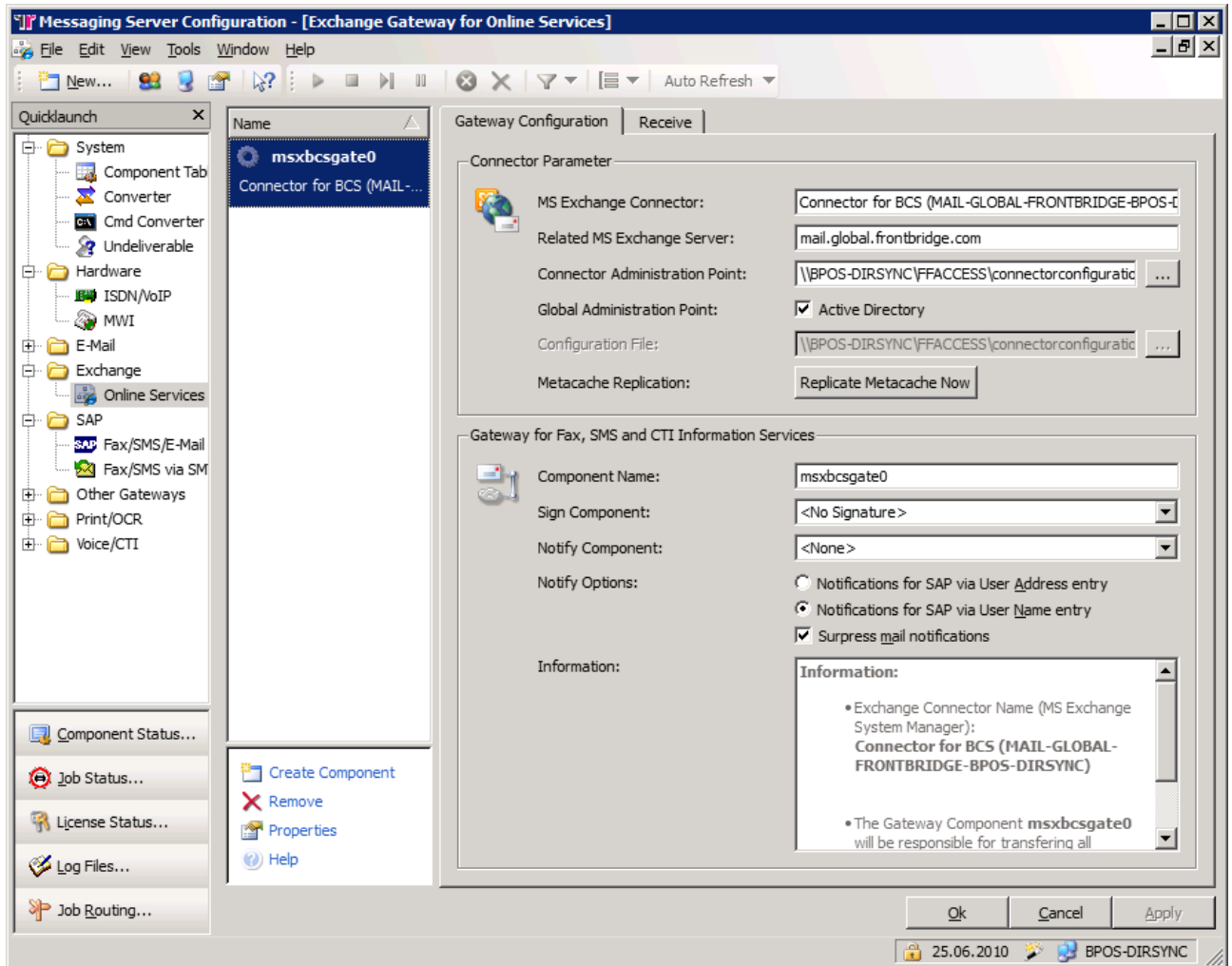
Global Settings:

- Create the Basic Settings Data Object globally (recommended)
- Create the Basic Settings Data Object in local domain context
- Create the Basic Settings Data Object locally

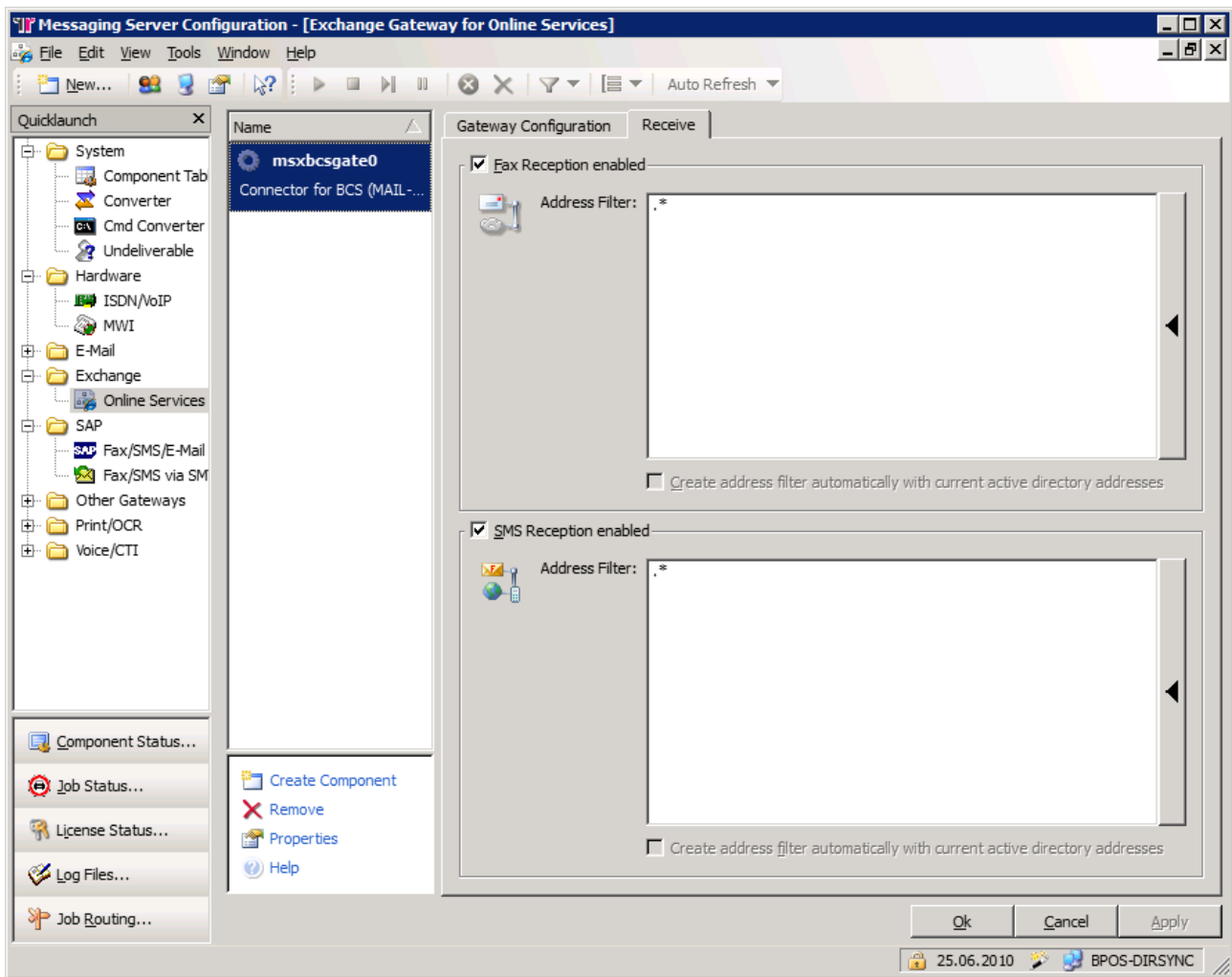
\\BPOS-DIRSYNC\FACCESS\connectorconfiguration.cfg

Help < Back Install Cancel

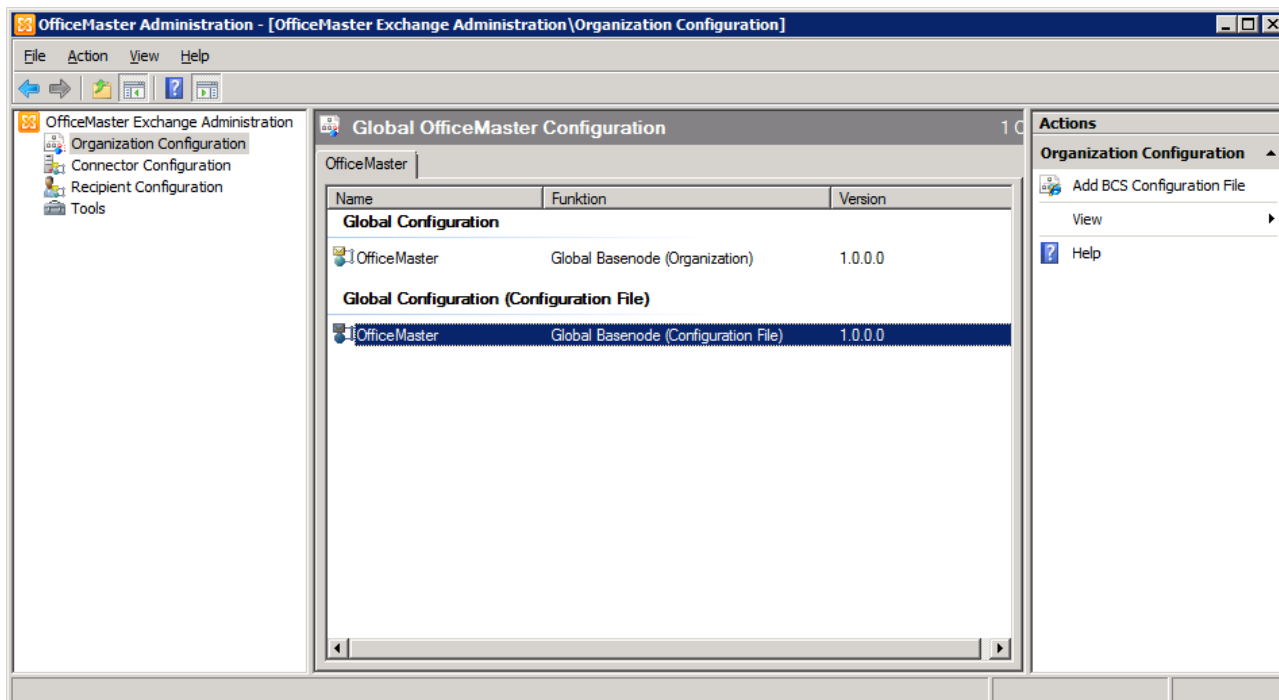
The value 'Messaging Server' shows the installation computer. The 'Exchange Server' value is the external smart host address. To this smart host address incoming documents and status information will be sent via SMTP. The 'Transfer Domain' represents the domain of the customer's premises.



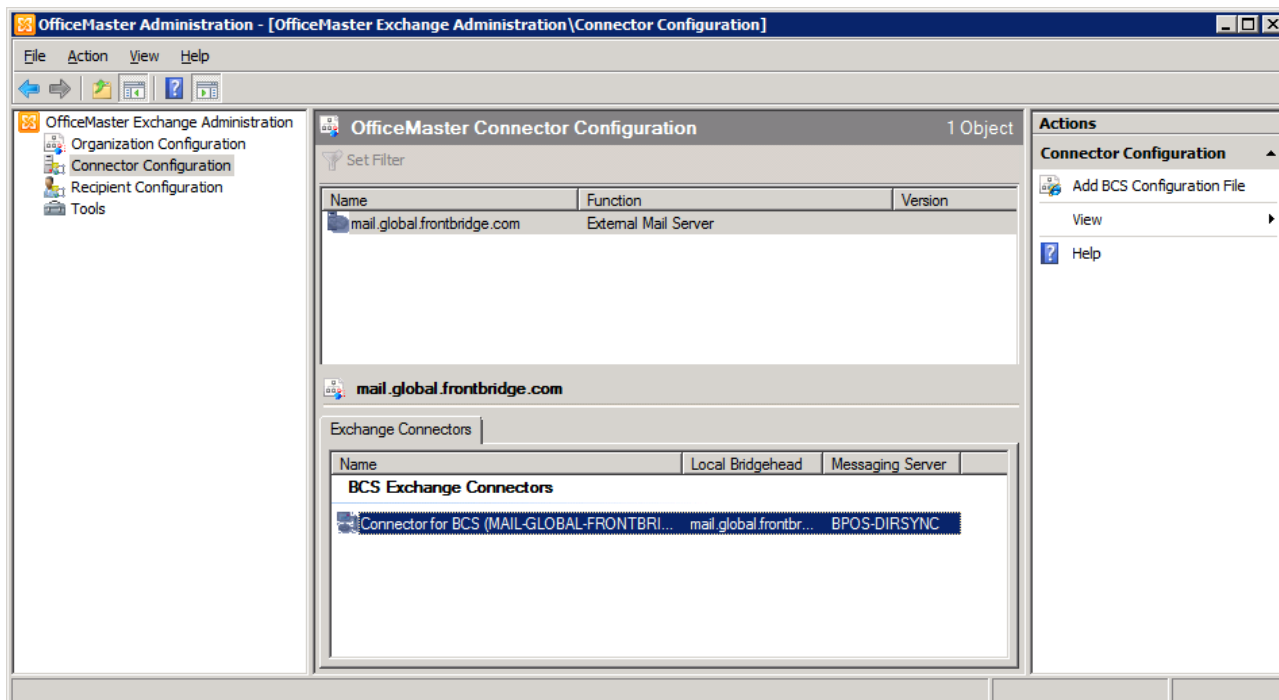
Default settings for the gateway component.



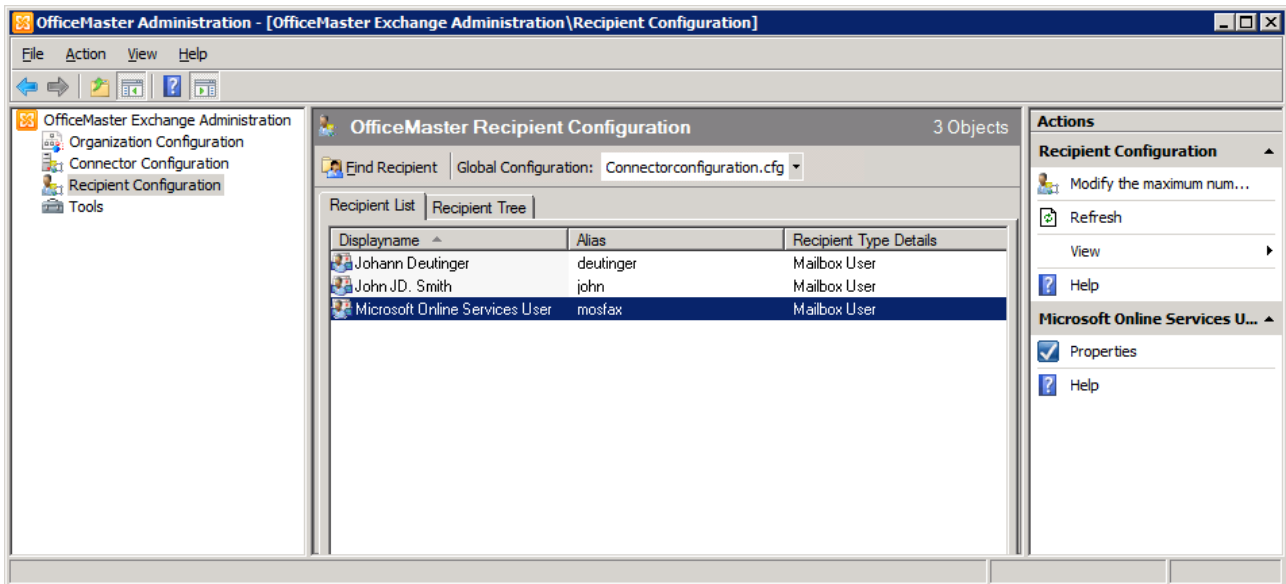
Inbound routing settings for fax and SMS.



Global configuration settings provided either as AD administration or as configuration file.



Connector administration provided as configuration file.



User administration for individual OfficeMaster settings.

The screenshot shows the 'Microsoft BPOS Properties' dialog box with the 'General' tab selected. The dialog has a title bar with a question mark and a close button. Below the title bar is a tabbed interface with the following tabs: Published Certificates, Member Of, Password Replication, Dial-in, Object, Security, Environment, Sessions, Remote control, Terminal Services Profile, COM+, Attribute Editor, OfficeMaster, General (selected), Address, Account, Profile, Telephones, and Organization. The main area contains a user icon and the name 'Microsoft BPOS'. Below this are several input fields: 'First name' (Microsoft), 'Initials' (empty), 'Last name' (BPOS), 'Display name' (Microsoft BPOS), 'Description' (Microsoft Online Services Demonstration User), 'Office' (empty), 'Telephone number' (empty), 'E-mail' (mosfax@live-gateway.de), and 'Web page' (empty). There are 'Other...' buttons next to the telephone and web page fields. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

| | | | | |
|---------------------------|-------------|----------------------|----------------|--------------|
| Published Certificates | Member Of | Password Replication | Dial-in | Object |
| Security | Environment | Sessions | Remote control | |
| Terminal Services Profile | COM+ | Attribute Editor | OfficeMaster | |
| General | Address | Account | Profile | Telephones |
| | | | | Organization |

Microsoft BPOS

First name: Initials:

Last name:

Display name:

Description:

Office:

Telephone number: Other...

E-mail:

Web page: Other...

OK Cancel Apply Help

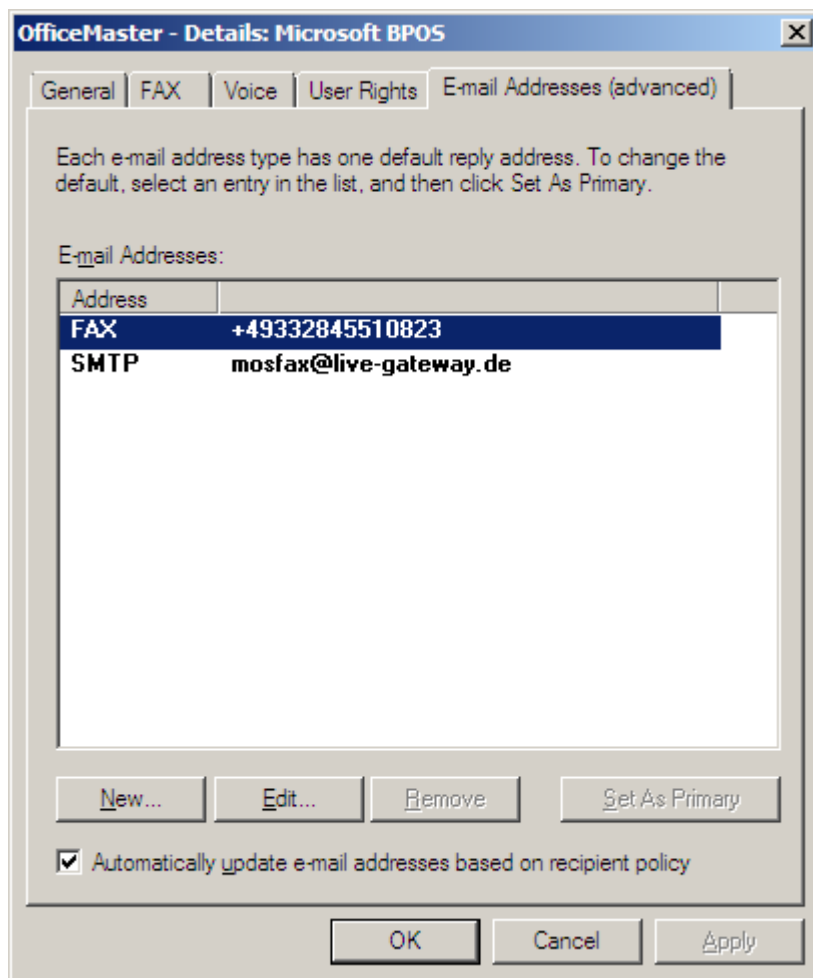
General user settings.

The screenshot shows the 'Microsoft Online Demo User Properties' dialog box with the 'OfficeMaster' tab selected. The dialog has three main tabs: 'General', 'User Information', and 'Address and Phone'. Below these are sub-tabs: 'Member Of', 'E-Mail Addresses', and 'OfficeMaster'. The 'OfficeMaster' sub-tab contains the following fields:

- Defaults:** A dropdown menu set to '<Z: OfficeMaster Default>' with a browse button (...).
- Fax:**
 - CSID:** A dropdown menu set to '<empty>'.
 - Headline:** A dropdown menu set to '<empty>'.
 - Cover Page:** A dropdown menu set to 'cloudcover1_dt1.rtf'.
 - Signature:** A dropdown menu set to '<empty>'.
 - Billing Code:** A dropdown menu set to '<empty>'.
 - PBX-[d]:** A dropdown menu set to '<empty>'.
- SMS:**
 - Number:** A dropdown menu set to '<empty>'.
- Voice:**
 - Record Mode:** A dropdown menu set to 'all calls'.
 - Script:** A dropdown menu set to 'ProjectVOX'.
 - PIN:** A text field containing ten dots (••••••••••).

At the bottom left, it says 'Version 4.0.0.1'. At the bottom right, there is a 'Details...' button. The bottom of the dialog features four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

OfficeMaster property page.



Email address dialog provided by OfficeMaster administration program.

To get in contact with the authors:

Johann Deutinger
Chief Technology Officer
SMTP/SIP: deutinger@ferrari-electronic.de

Dr. Hartmut Fetzer
Sales /Marketing
SMTP/SIP: fetzer@ferrari-electronic.de