



Whitepaper
Sept. 2009

Fax with Exchange 2010 and OfficeMaster Gate



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2 Introduction

With the Unified Messaging role of Exchange Server 2007 Microsoft introduced the possibility to receive fax documents without the need for using third party fax server software. This function is tightly coupled with Voicemail – before fax reception can be started, the call must reach the user's voice mailbox. Afterwards the connection has to be switched from voice to T.38 Fax which must be supported by the VoIP gateway or SIP provider.

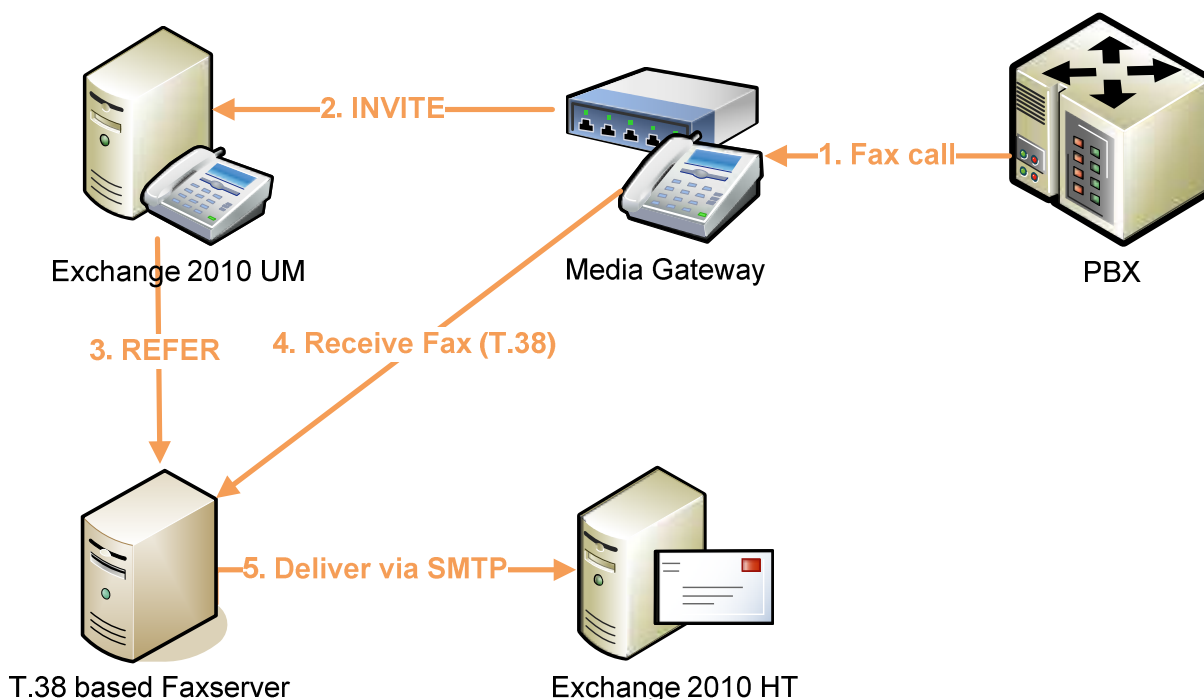
There is no outbound faxing and some advanced features, like error correction mode (ECM), are missing. Despite those restrictions the solution is still suitable for many customers.

3 Receiving Faxes with Exchange 2010 UM

With Exchange 2010 Microsoft decided to delegate faxing to third party solutions – just like with Exchange versions before 2007. To give users a similar experience as provided by Exchange 2007 there is still a way to switch over from voice mailbox connection to fax reception. This is done by referring fax calls to a separate partner fax solution which takes the call, receives the fax via T.38 and forwards it as a TIFF attachment to the recipient's inbox who will get it the same way as it was supported by Exchange 2007 UM.

3.1 Concept of Exchange 2010 Partner Fax Solution

The following diagram shows how inbound faxes are handled by Exchange 2010 in combination with a partner fax solution (T.38 based fax server):



Details can be found in a posting by Katarzyna Puchala on the Exchange Team Blog.¹

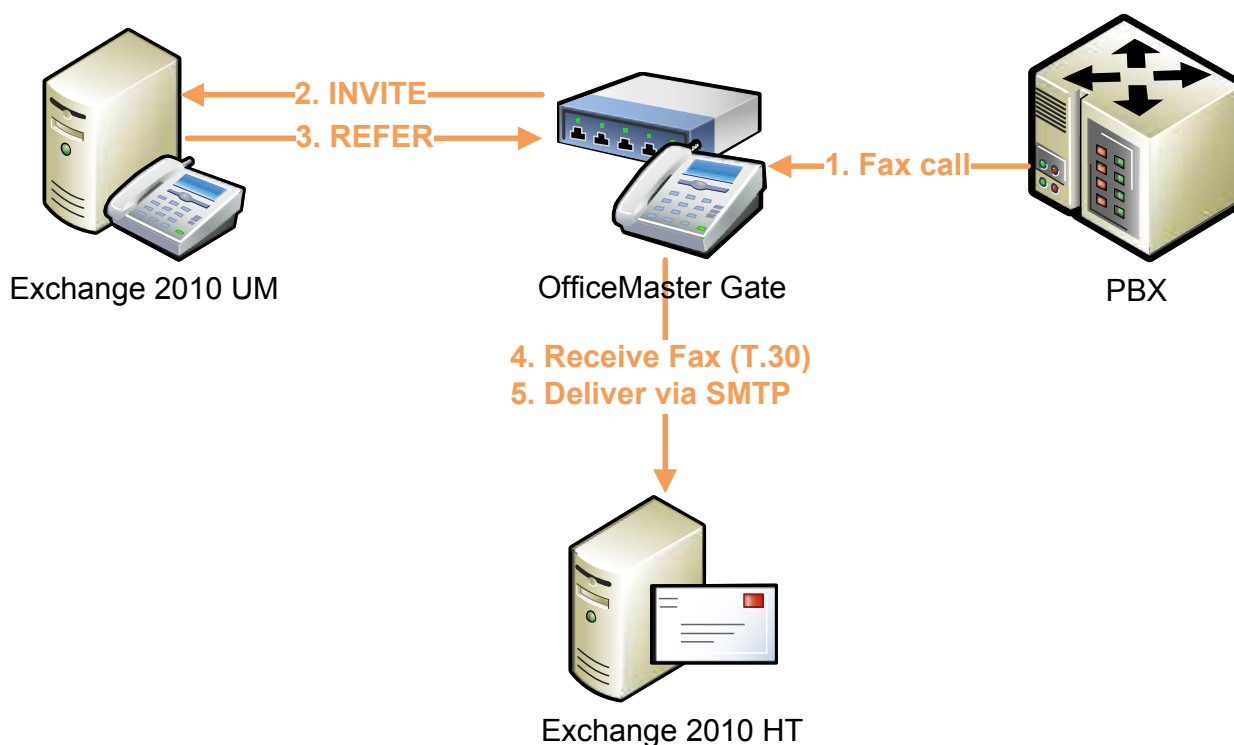
3.2 On-Premises Fax vs. Provider based Solution

Partner fax solutions can be installed on-premises or be offered as a service by external providers. On-premises fax servers are typically installed when full fax features including outbound faxing are required. Customers have to check for compatibility between UM gateway and fax solution – otherwise separate fax hardware and PSTN would be needed.

Using a service based partner fax solution supports inbound faxing which may be sufficient for many users. Since in that case T.38 fax traffic is typically routed through a standard internet connection there may be degradations on service quality (=fax success rate) caused by timing issues; some fax senders are sensitive to such influences.

3.3 OfficeMaster Gate – UM Gateway with integrated Partner Fax Solution

OfficeMaster Gate – the Ferrari electronic UM/UC gateways for Exchange UM and OCS 2007 (R2) – offer a very unique solution: they combine both media gateway and partner fax solution in a single device! Fax calls arriving at Exchange UM mailbox are referred back to the gateway which is still holding the PSTN connection. The gateway receives the fax using standard T.30 fax protocol (without the need for conversion to T.38) and forwards it to the user's inbox after successful reception.



¹ <http://msexchangeteam.com/archive/2009/08/19/452034.aspx>

For inbound faxing customers get several benefits from this approach:

- There is no need for a separate partner fax solution or service subscription, receiving faxes is included with the media gateway
- Success rate is very high since faxes are directly received using T.30 fax protocol on the TDM interface without reconversion to T.38
- This feature is included at no extra charge in all current versions of OfficeMaster Gate which support fax.²

4 Configuring Fax with Exchange 2010 Fax and OfficeMaster Gate

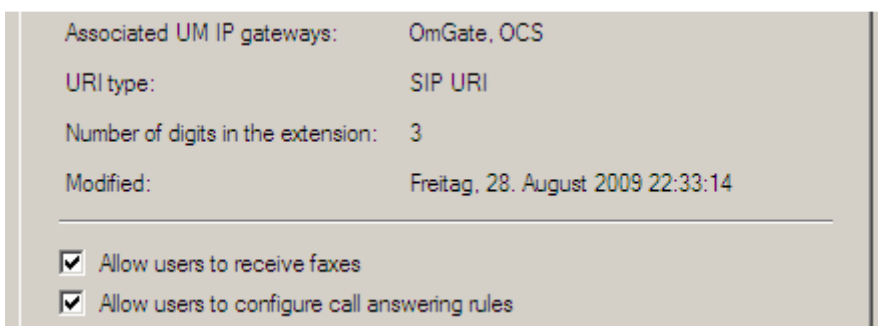
To implement inbound faxing via Exchange 2010 and OfficeMaster Gate only a few simple configuration settings must be applied:

- On Exchange 2010 faxing must be enabled on dial plan, mailbox policy and mailboxes; in addition the partner fax URI must be specified in mailbox policy
- Incoming rule on OfficeMaster Gate used to connect to Exchange UM must support fax detection and hub transport server address and port number of receive connector must be specified

4.1 Exchange 2010 Configuration Steps

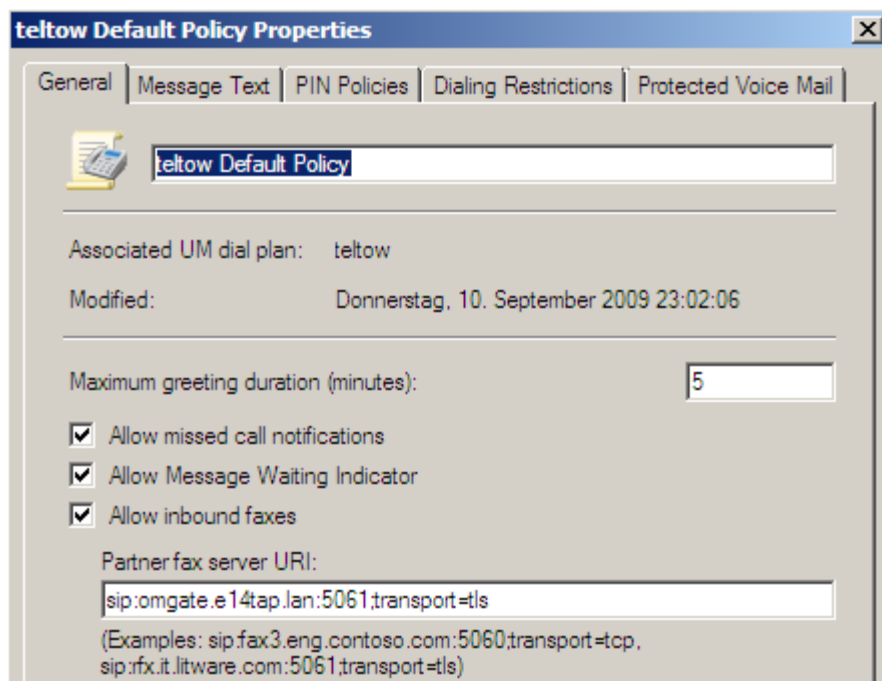
Settings can be done either through Exchange Management Shell or Exchange Management Console. Experienced administrators will probably know how to use Management Shell; therefore we describe how to do the necessary settings using Exchange Management Console.

To enable fax on a dial plan a checkbox on “General” tab must be activated:



² OfficeMaster Gate UC is the only product which does not support fax until licensed separately. Existing OfficeMaster Gate products with firmware 3.x can get that feature through a firmware update.

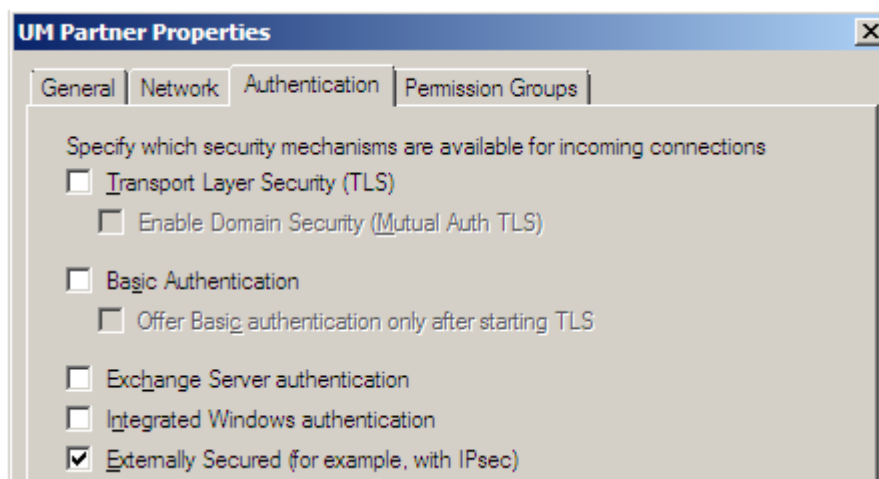
On the associated mailbox policy “Allow inbound faxes” must be activated and the SIP URI of OfficeMaster Gate has to be specified:

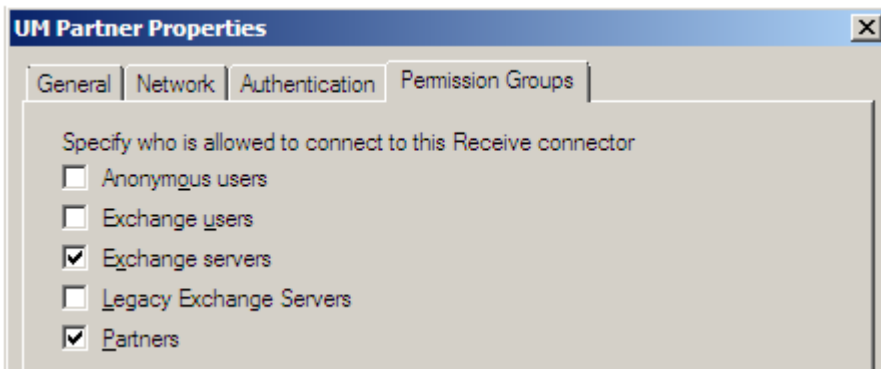


If using a secured dial plan (like in this example, because the same dial plan and policy is used for OCS 2007 as well), the destination settings must end with “:5061;transport=tls”, on unsecured dial plans it has to end with “:5060;transport=tcp”.

In addition a separate receive connector typically will be used to accept received faxes via SMTP from the partner fax solution (in our case from OfficeMaster Gate). This connector should allow receiving mails from the IP address of OfficeMaster Gate using a free port number like 2525 (example.)

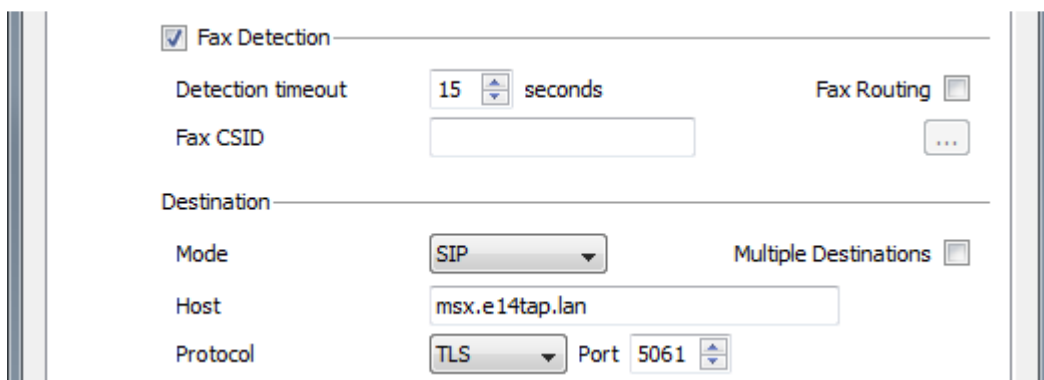
In addition it should have the following properties:





4.2 OfficeMaster Gate Settings

Incoming calls on OfficeMaster Gate are handled by one or more rules. For inbound voice mail and switchover to fax a rule must have “Fax Detection” activated:



Depending on type of dial plan either TLS/5061 (secured) or TCP/5060 (unsecured) must be selected.

In “Edit → VoIP Parameters...” the receive connector FQDN and port must be specified in the edit field labeled “Exchange 2010 Fax Mailhost”:

| | | | |
|--------------------------------|-------------------------------------|----------------------------|--|
| SRTP | supported ▾ | RingBack Tone to ISDN | <input checked="" type="checkbox"/> |
| 'phone-context' in INVITE FROM | <input type="text"/> | RingBack Tone to RTP | <input checked="" type="checkbox"/> |
| 'phone-context' in INVITE TO | <input type="text"/> | Ignore PI On Ringing | <input type="checkbox"/> |
| Send 'user=phone' in FROM | <input type="checkbox"/> | Ignore PI On Progress | <input type="checkbox"/> |
| Send 'user=phone' in TO | <input type="checkbox"/> | Exchange 2010 Fax Mailhost | <input type="text" value="msx.e14tap.lan:2525"/> |
| Do not send Alert | <input type="checkbox"/> | Additional Parameters | <input type="text"/> |
| Send only one Alert | <input checked="" type="checkbox"/> | | |
| Do not send ISDN progress | <input type="checkbox"/> | | |

Restore Defaults OK Cancel

If a secured dial plan is used, OfficeMaster Gate must be prepared for TLS by requesting and installing a certificate and importing the root certificate of the CA used by Exchange UM role. To achieve that the Menu "Edit → Certificate..." must be used:

Certificates

Settings

Infrastructure

State: ●

Request: No pending request

Certificate: Installed

Root CA: Installed

Certificate Request

The first step needed to get a server certificate is creating a request. Submit this request to a Certificate Authority.

Create ... Display... Cancel...

Install Certificate

The Certificate Authority will generate a certificate response file, which contains your public key and is digitally signed.

Import ...

Root CA Certificate

To complete the certificate installation you need to install a trusted root certification authority (CA) certificate.

Import...

5 Full featured Fax with OfficeMaster for Exchange

The above solution supports inbound faxing. For many customers – especially in European countries – outbound faxing is still a very important part of business communications.

Ferrari electronic started providing such solutions in 1990, supporting fax with MS-DOS, Windows (starting with version 2.11), MS-Mail and Microsoft Exchange since the first version 4.0.

“OfficeMaster for Exchange” is a leading product which supports Exchange 2000, 2003, 2007 and 2010³. It includes a long list of features and can be integrated with all major applications (CRM, EAP, DMS, ...) – more information can be found on <http://www.officemaster.de/en/products/officemaster-for/exchange.html>

³ Available in Q4/2009