

**BNS GROUP**

# **msXfax**<sup>®</sup>

ENTERPRISE FAX SERVER

---

## VERSION 8

---

### Product Information & planning Guide (21 August 2013)

- Product positioning
- End of life for msXfax 7.6
- Customer upgrade planning
- Deployment planning

Copyright: BNS Group Australia  
[www.bnsgroup.com.au](http://www.bnsgroup.com.au)

# CONTENTS

---

SECTION 1	Overview	3
1.1	End of life - msXfax version 7.6	3
1.2	Transitioning from msXfax 7.6 to version 8	4
1.3	Version 8 Product Positioning	4
1.4	msXfax Enterprise version 8 at a glance:	6
1.5	Product Releases	7
SECTION 2	Architecture and security options	11
2.1	Physical Fax Servers	11
2.2	Design of msXfax version 8	11
2.3	Corporate customer simple configuration	12
2.1	DMZ Edition only Physical or Virtual	13
2.2	Corporate or Government customer with base level network separation	15
2.3	Government – no accreditation on internal network	17
2.4	Government – highest security implementation	18
SECTION 3	Migration planning for existing customers	19
3.1	Decide on which option you will implement	19
3.2	Building a test environment	22
3.3	Migration from 7.6 to version 8	22
3.4	Inbound routing recommendations	22

# FIGURES

---

Figure 1	Corporate customer simple configuration (Virtual machine implementation)	12
Figure 2:	DMZ ONLY edition physical fax server	13
Figure 3	DMZ ONLY edition on a Virtual Machine in the DMZ	14
Figure 4	Network separation using a BNS certified SIP gateway (Virtual machine implementation)	15
Figure 5:	Government no accreditation on internal network (inbound and outbound faxing to PSTN)	17
Figure 6:	Government 3 separate networks (inbound and outbound faxing to PSTN)	18
Figure 7	Corporate customer simple configuration 1 Virtual machine with a T.38 certified gateway	19
Figure 8	Small customer with 1 VM for msXfax and SQL Express	20
Figure 9	Government customer – network separation with hygiene controls / Defence approved gateway	21

# TABLES

---

Table 1	Release summary roadmap for version 8	7
Table 2	DMZ high security edition physical server with Dialogic fax card	7
Table 3	DMZ high security edition - virtual machine (inbound faxing)	9
Table 4	Full edition on physical or virtual machines	10

# SECTION 1 Overview

## 1.1 End of life - msXfax version 7.6

**msXfax version 7.6 end of life support from BNS Group will be 30 March 2015.** Customers will be provided a FREE software license upgrade from version 7.6 to version 8 as part of their subscription license/maintenance.

msXfax software was first released in the late 80's on Brooktrout fax card technology and Windows Server operating systems. A long standing Microsoft Partner, BNS focused on providing Microsoft® Exchange integration with an email centric fax messaging platform.

2003 - msXfax was re-engineered for the Windows 2003 Server operating system and Exchange 2003 using Dialogic Diva fax card technologies.

msXfax version 7.6 operates on Windows 2003 server providing support for all versions of Exchange from 2003 to Exchange 2013. msXfax can operate with any SMTP infrastructure but provides best integration with Microsoft Exchange Server.

2013 - Rapid shifts in technology both in terms of software development tools, security and cyber threats, security standards, operating systems, cloud strategies and IP based telephony have driven the need to once again re-architect the msXfax platform.

msXfax version 8 key features and focus is documented in this product information guide.

## 1.2 Transitioning from msXfax 7.6 to version 8

To help our customers make a smooth transition:

- BNS will provide transition licences to run msXfax 8 along side msXfax 7.6 during the migration period. msXfax version 8 will be on another server (a virtual machine either Windows 2008R2 or Windows 2012).
- BNS will provide web/email/phone/remote access technical support to make a smooth transition for its customers.
- Discounts will also be provided for customers wishing to virtualize their msXfax servers software. Discounts will apply to BNS provided and certified SIP media gateway hardware and Dialogic SR140 fax over IP drivers.

## 1.3 Version 8 Product Positioning

BNS Group manufactures commercial FAX and SMS messaging software for Corporate and Government customers. msXfax and msXsms Enterprise SMS software focused on meeting the Australian Government Information Security Manual (ISM) requirements published at <http://www.dsd.gov.au/infosec/ism/>.

msXfax version 7.6 software complies with the Australian Government email protective marking (EPM) standards 2005.6 to 2012.3. msXfax Enterprise Version 8 will check for 2012.3 compliance of the protective marking on email to fax transmissions. Dissemination Limiting Markers (DLMs) are also checked in both 7.6 and version 8.

EPM standards defines the format of protective markings for Internet email message headers used for messages exchanged within and between Australian Government agencies. A protective marking conveys the protection requirements for information in a message, as defined within the *Australian Government Protective Security Policy Framework*. The protective marking may also contain additional information about the message that tells systems and system users how to appropriately disseminate the information contained in the message.

Many fax products today utilise email as a transport mechanism to send and receive faxes between the fax server and users of the system.

Any Government Department or agency using internal email systems to send faxes via a fax server which communicates to the public switched telephone network, must ensure that gateways and fax servers comply with ISM by implementing Email Protective Marking

checking and other security requirements such as network separation, data export controls and audit.

msXfax inspects and checks the SMTP message headers and/or the subject for a compliant marking or DLMs introduced in the ISM 2012.

## 1.4 msXfax Enterprise version 8 at a glance:

- Support for Windows 2008R2 and Windows Server 2012
- Virtualisation of the fax server software
- Designed for compliance with ISM for: network separation, audit, data export controls and protective markings/DLMs.
- Support for Fax over IP to compliant equipment and service providers.
- Removing the need for Office or Acrobat on the fax server
- Robust Microsoft SQL Server support
- Scalable from 2 to 60 channels per fax server
- Scalable across data centers using load balancers
- High availability and redundancy achieved using load balancers, DNS, SMTP Connectors, master slave SIP gateways (T.38/G.711).
- Report Generators for SQL Server offering comprehensive reporting, graphs and dashboards.

## 1.5 Product Releases

Various editions will be released in 2013/2014 commencing with the high security inbound DMZ edition June 2013.

### 1.5.1 Version 8 release roadmap

**Table 1 Release summary roadmap for version 8**

Version 8 Edition	Estimated date
Inbound DMZ Edition Physical server with Diva card	Released on 20 June 2013
Inbound DMZ Edition virtual machine	10 September 2013
Inbound Full edition with DMZ & Internal roles Physical or VM	February 2014
Outbound/Inbound Full edition with DMZ & Internal roles Physical or VM	June 2014

### 1.5.2 DMZ high security edition physical server (inbound faxing only)

**Table 2 DMZ high security edition physical server with Dialogic fax card**

Released date:	20 June 2013
Edition release	physical fax server in the DMZ with a Dialogic fax card
Telephone interface	ISDN Primary rate E1 or fractional E1/T1 using a Dialogic Diva media card.
Type of customer	customer with high security networks such as PROTECTED or RESTRICTED where communications via facsimile from the public telephone network is a requirement
Implementation	within a secure facility located in telecommunications DMZ
Driver security	ONLY CAPI interface allowed. No operating system level modem or remote access services. Only msXfax software can answer calls via the CAPI interface.
Operating System	Windows 2008R2 SP1.

Dialogic Diva fax card

Selected models supported. Contact BNS for further information.



### 1.5.3 DMZ high security edition Virtual Machine edition server (inbound faxing only)

**Table 3 DMZ high security edition - virtual machine (inbound faxing)**

Release date:	10 September 2013
Edition release	Virtual machine server in the DMZ with Brooktrout SR140 fax over IP drivers
Telephone interface	T.38/G711 to a compliant SIP gateway or SIP based service. SIP gateways/networks can provide ISDN Primary rate E1 or fractional E1/T1.
Type of customer	customer with high security networks such as PROTECTED or RESTRICTED where communications via facsimile from the public network is a requirement
Implementation	within a secure facility located in telecommunications DMZ
Operating System	Windows 2008R2 SP1 or Windows Server 2012.

## 1.5.4 Full edition physical or Virtual Machine edition (outbound & inbound faxing)

**Table 4 Full edition on physical or virtual machines**

Release date:	Target 2014
Edition release	Full edition
Telephone interface	ISDN Primary rate E1 or fractional E1/T1 using a Dialogic Diva media card. <b>OR</b>  Virtual Machine(s) with a T.38 compliant certified media gateway or service
Type of customer	Corporate customers and Government
Implementation	Full edition comes in 2 parts: Internal role and DMZ role. These roles can exist on 1 virtual or physical machine or separated physical/virtual machines.
Driver security	If the DMZ role is installed on a physical server with a Dialogic Diva fax card, only CAPI interfaces are configured. No operating system level modem or remote access services should be configured. Only msXfax software can answer incoming calls via the CAPI interface.
Operating System	Windows 2008R2 SP1 (Physical or Virtual) Windows Server 2012 (Virtual) .

## SECTION 2 Architecture and security options

### 2.1 Physical Fax Servers

msXfax version 7.6 is only supported on physical fax servers with Dialogic Diva fax cards.

msXfax version 8 can be deployed on physical fax servers using Dialogic Diva fax cards in suitable server hardware running Windows 2008R2 SP1 or Windows Server 2012.

Dialogic Fax Cards: PCIe full height half length cards will fit most new servers such as DELL R310/R410 etc.

msXfax version 8 will support Virtual Machine (VM) based fax server roles.

### 2.2 Design of msXfax version 8

msXfax version 8 has been completely re-developed to focus on security for customers of all sizes including sensitive large enterprise customers such as: Banks, financial institutions, insurance companies and Government.

msXfax version 8 implements role based Windows Services allowing systems integrators, network administrators and IT Security Advisors to design an implementation which suits their specific security needs.

msXfax Internal and DMZ roles are a set of Windows Services which can be installed on either physical or virtual machines.

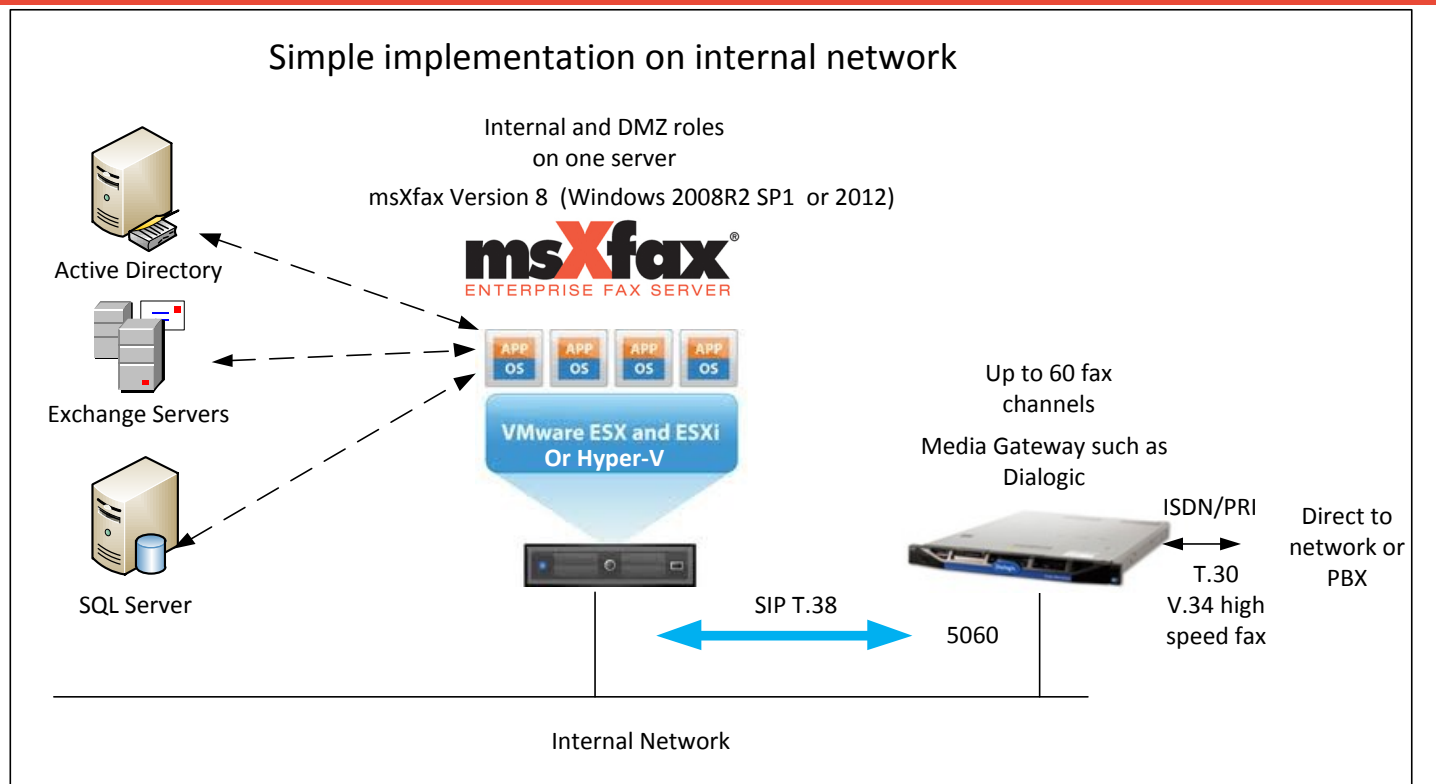
Architectural design of msXfax version 8 therefore allows Installation setups to install specific Transmit or Receive functions offering a further degree of control in a customer's design.

This provides ultimate design flexibility for: systems integrators, network administrators and IT Security Advisors to implement the best design for their environment.

## 2.3 Corporate customer simple configuration

Some corporate customers will not have the level of network separation requirements as highly secure Government networks.

Figure 1 Corporate customer simple configuration (Virtual machine implementation)



This implementation combines msXfax Internal and DMZ roles on a single Virtual machine (VM). There is no firewall between the VM and the SIP gateway. However, a firewall can be placed between the VM and the SIP gateway if required.

The SIP gateway receives incoming fax calls and routes them to msXfax DMZ role services on the VM.

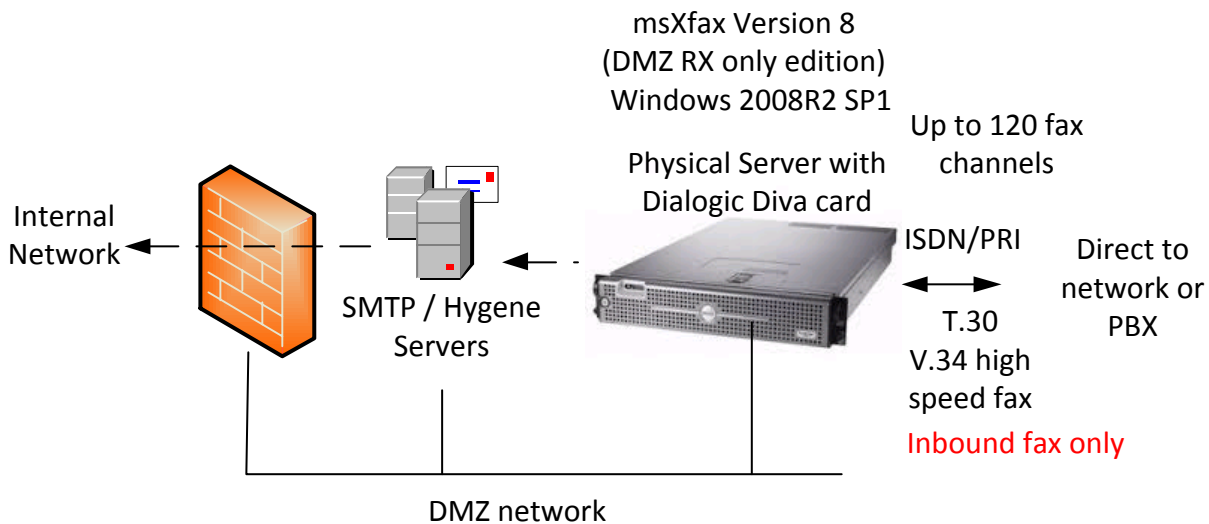
msXfax DMZ role will only accept fax calls. It does not support binary file transfer or any other type of protocol which could be a potential risk.

## 2.1 DMZ Edition only Physical or Virtual

Figure 2: DMZ ONLY edition physical fax server

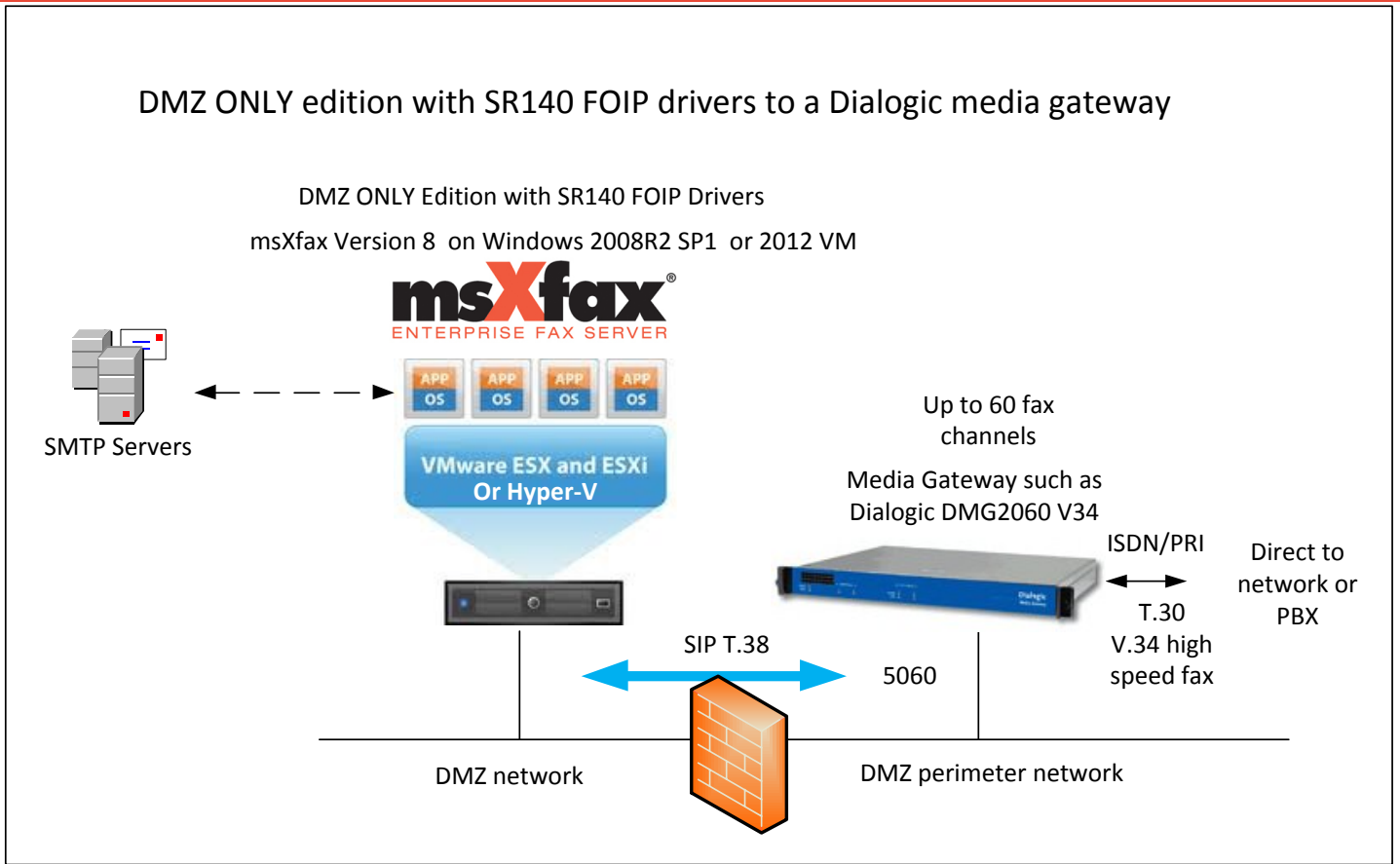
### version 8 physical server in DMZ inbound only

No SQL Database, No Office or other software, Simple workgroup server. Windows 2008R2 SP1. TIFF images split to get through firewall, extensive logging of SMTP communications, optional retention of fax images



This implementation has a Dialogic Diva card installed in a physical server connected to a PSTN/PBX.

**Figure 3 DMZ ONLY edition on a Virtual Machine in the DMZ**

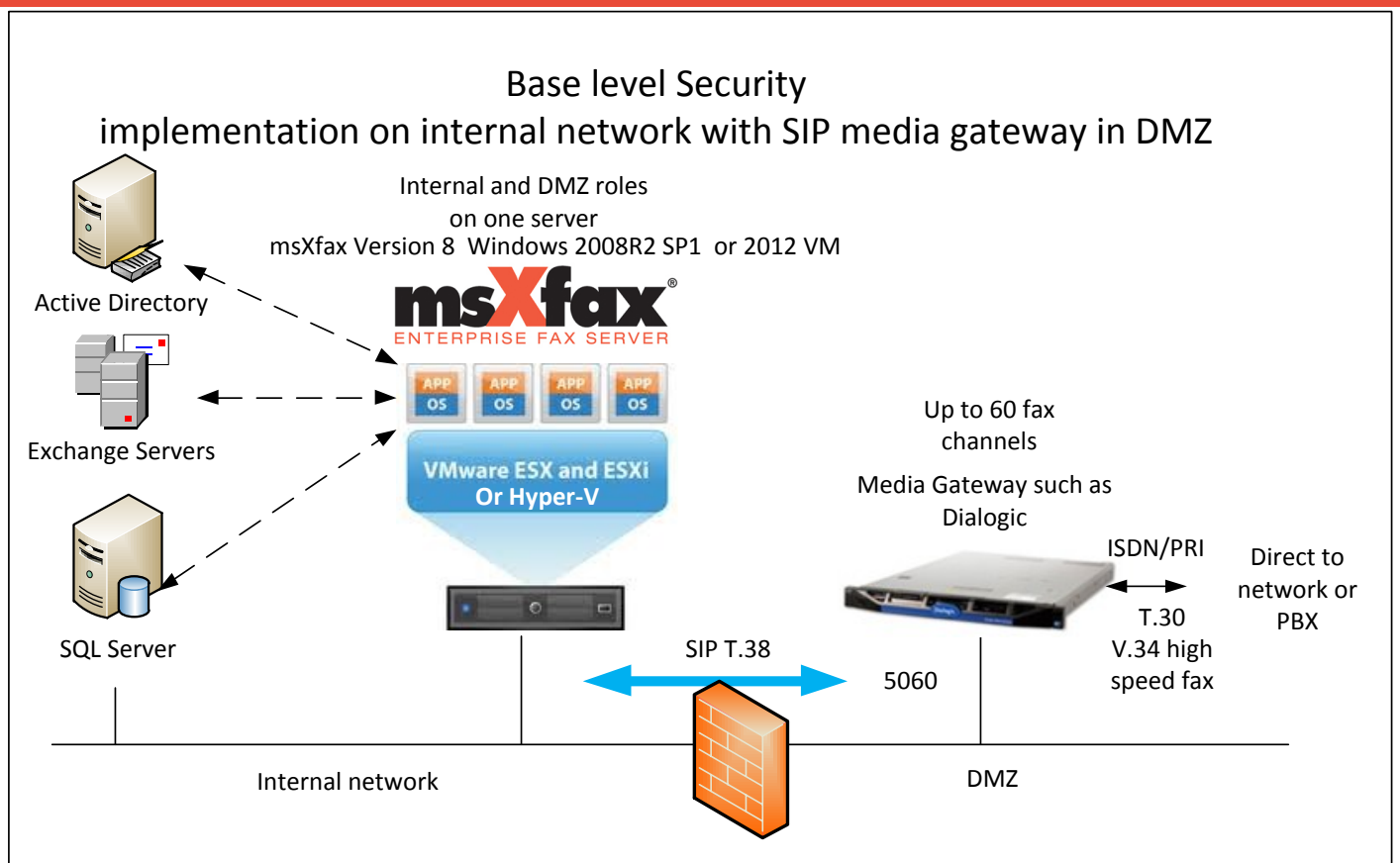


This implementation uses SR140 FOIP drivers with a certified SIP gateway which has been certified and configured by BNS Group.

## 2.2 Corporate or Government customer with base level network separation

Some corporate customers will not have the level of complete network separation as required by highly secure Government networks. However, some customers may want to protect their internal network from potential attack from a SIP gateway which may be compromised from the PSTN.

Figure 4 Network separation using a BNS certified SIP gateway (Virtual machine implementation)



This implementation has msXfax Internal and DMZ roles combined on the one Virtual machine (VM). There is a firewall between the VM and the SIP gateway to allow only SIP UDP traffic on port 5060.

The SIP gateway receives incoming fax calls and routes them to msXfax DMZ role services on the VM.

msXfax DMZ role will only accept fax calls. It does not support binary file transfer or any other type of protocol which could be a potential risk.

msXfax Internal role implements Email Protective Marking checks for allowable protective markings/DLMs for release of fax messages to the public fax network.

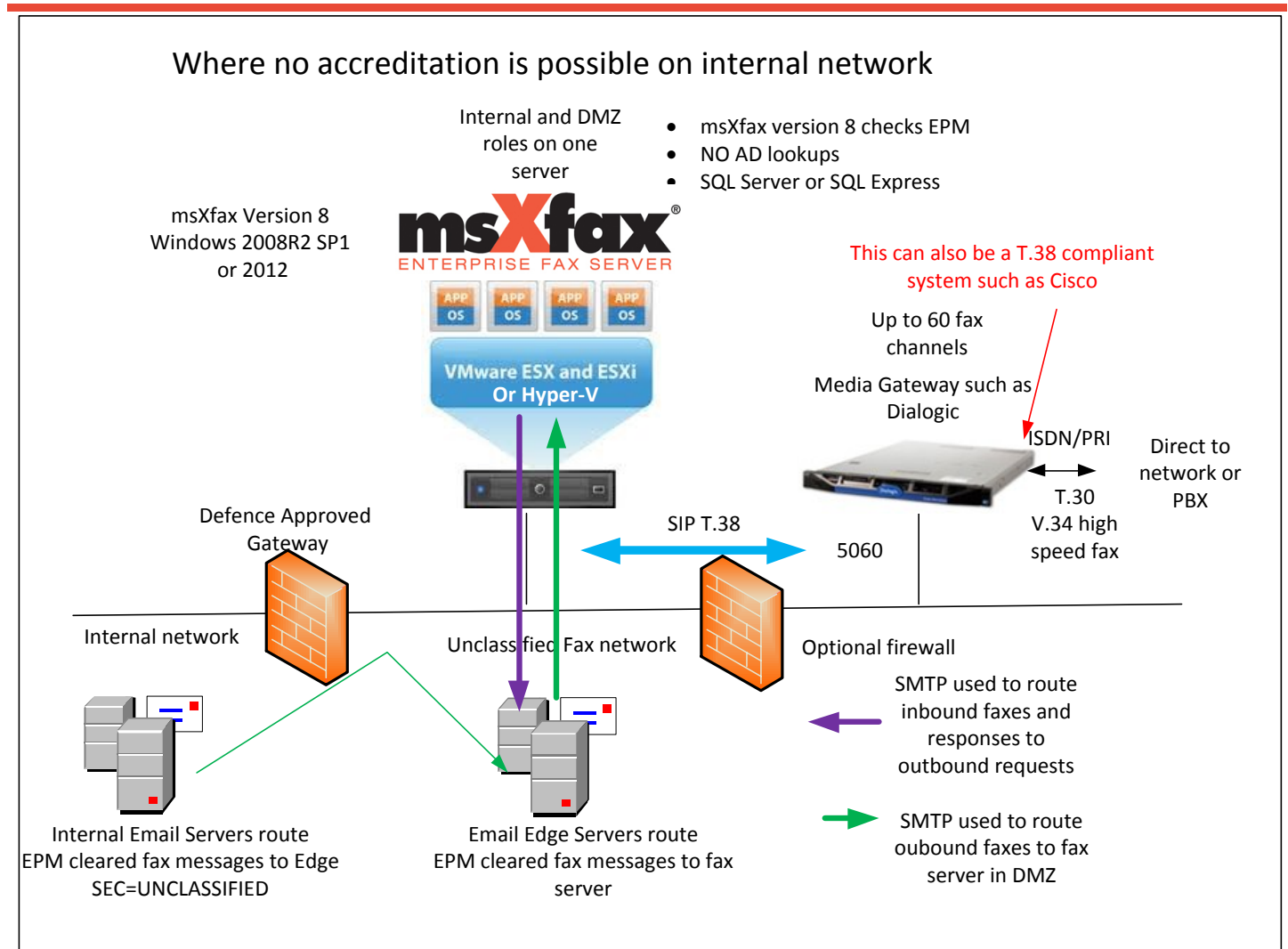
msXfax DMZ role service makes outgoing calls via the SIP gateway using T.38 SIP UDP traffic on port 5060.



## 2.3 Government – no accreditation on internal network

Some Government customers may have long periods for accrediting software on their internal networks. This solution offers network separation in conjunction with existing security infrastructure.

Figure 5: Government no accreditation on internal network (inbound and outbound faxing to PSTN)

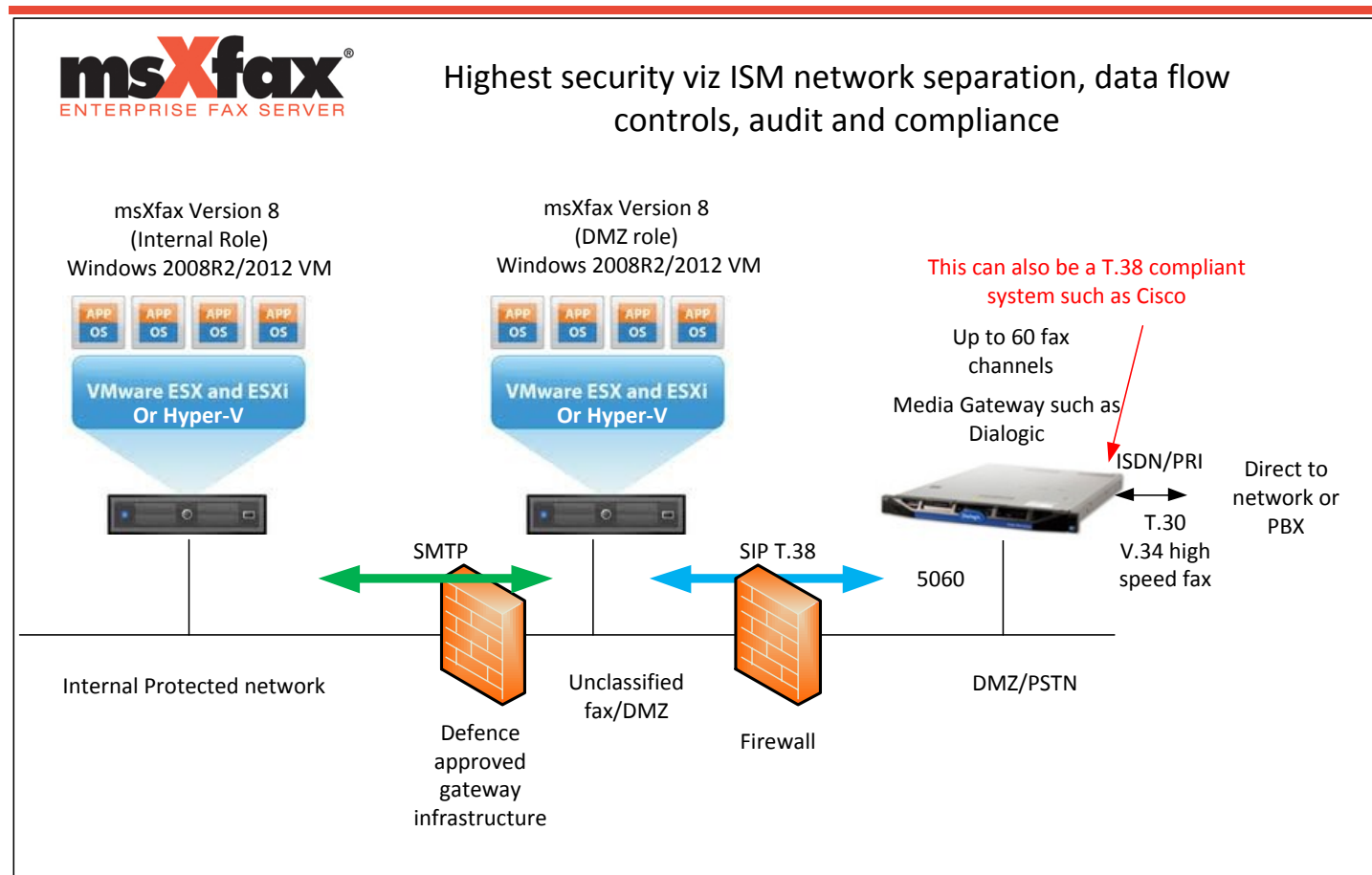


Email protective markings are checked by msXfax version 8 in the DMZ before the fax is sent to the public fax network. This implementation also has protective markings checked by the Defence approved gateway providing 2 levels of checking (1 by the Defence approved gateway and by msXfax itself). msXfax version 8 will implement checks for 2012.3 Email Protective Marking standards.

## 2.4 Government – highest security implementation

Some Government customers may have stricter compliance with IP based Telephony such as T.38. Some Government customers may implement voice and other IP based telephony on completely separate networks (or VLANs for same level security classification domain). Complete network separation is required from the internal network to an UNCLASSIFIED fax server.

Figure 6: Government 3 separate networks (inbound and outbound faxing to PSTN)



This design provides the highest level of security with each role in the respective networks. SMTP is used to transfer received faxes as TIF files from the DMZ into the protected network via existing Defence Approved gateways and hygiene systems.

SMTP is used to transfer outgoing faxes as TIF files from the protected network via existing Defence Approved gateways to the DMZ/Unclassified fax network.

msXfax Internal role services check the protective marking/DLMs for release to the DMZ msXfax server role services for transmission to the PSTN.

The customer's existing Defence approved gateway also checks the protective markings providing two levels of checking for protective markings/DLMs.

## SECTION 3 Migration planning for existing customers

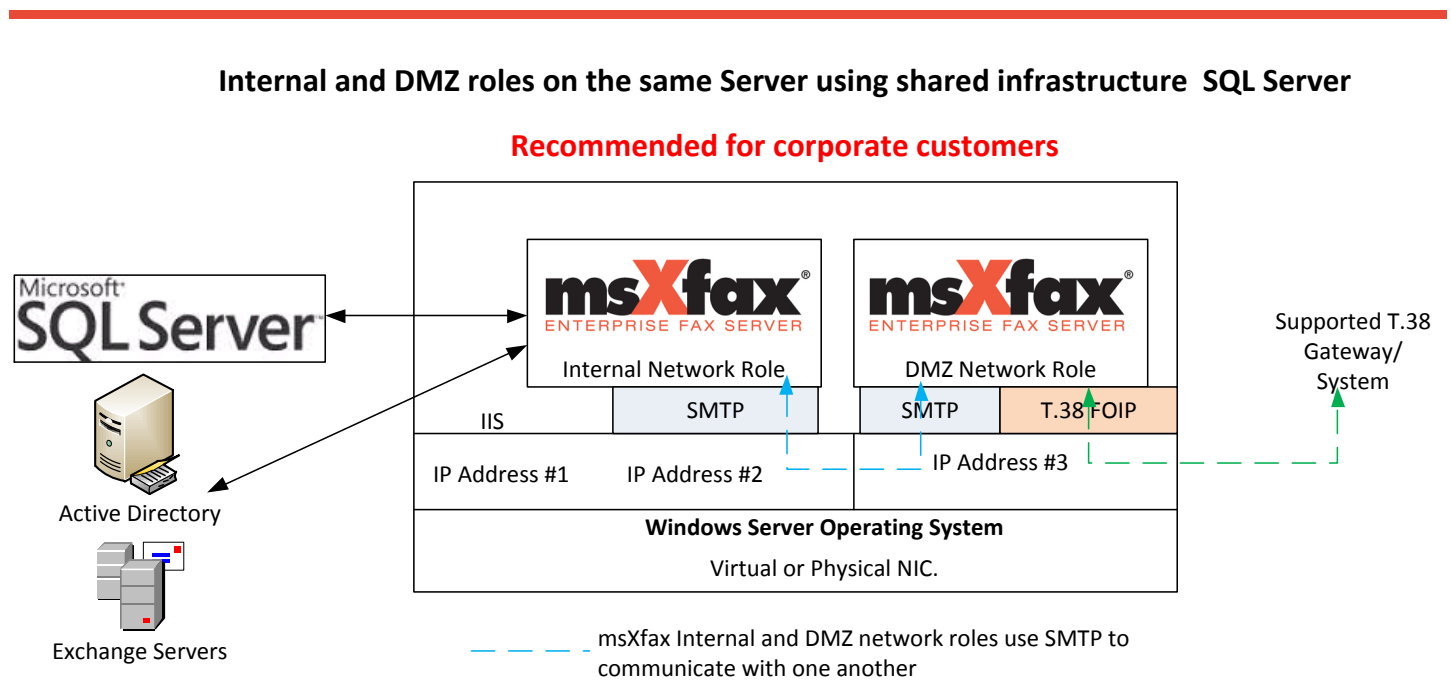
### 3.1 Decide on which option you will implement

Shared SQL infrastructure offers the best solution and flexibility for msXfax version 8.

Discuss your requirements with BNS as soon as possible.

#### 3.1.1 Shared SQL infrastructure for larger customers

Figure 7 Corporate customer simple configuration 1 Virtual machine with a T.38 certified gateway



This implementation combines msXfax Internal and DMZ roles on the one Virtual machine (VM). You can place a firewall if you wish between the DMZ role and the T.38 compliant gateway or service.

At least 2 IP addresses will be required possibly 3.

Windows Server 2008R2 with SP1 or Windows Server 2012.

Memory of the VM is subject to the number of fax channels to be supported.

The MAC address of the VM will need to be fixed as a manual MAC address.

**msXfax customers with a current license will be able to transfer their msXfax license for no additional cost to version 8.**

There is a license fee for Dialogic (Brooktrout) SR140 fax over IP licences. This is a perpetual license. 1 year’s maintenance is mandatory to enable support direct with Dialogic.

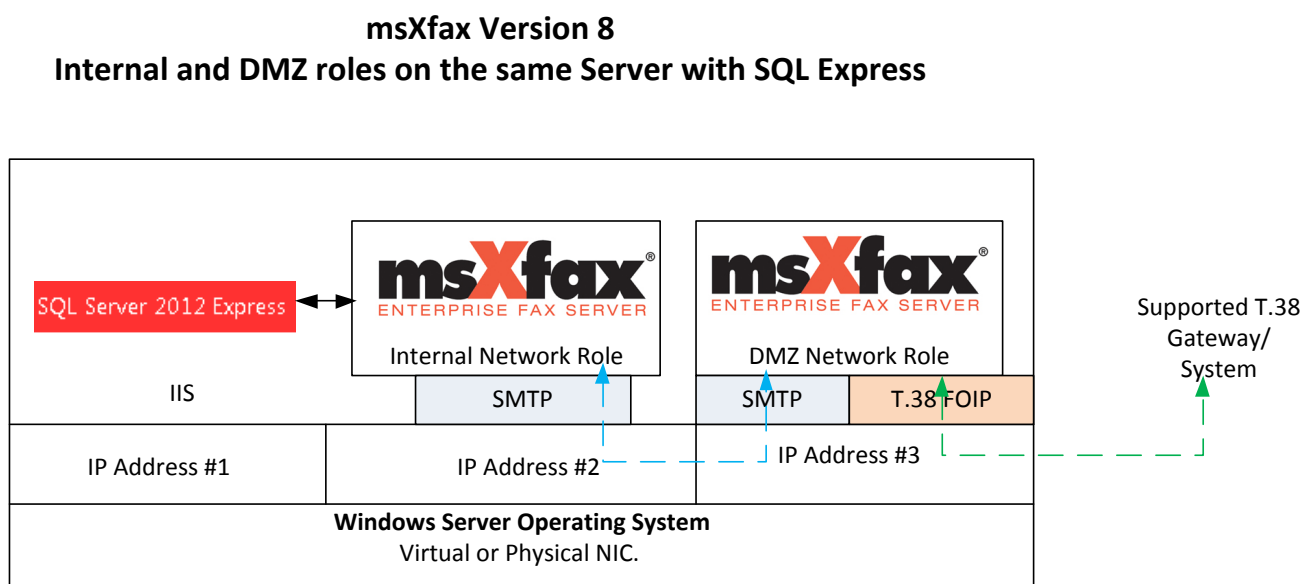
A BNS T.38 certified gateway must be purchased from BNS with the correct software builds to ensure quality assurance of the solution.

Selected SIP Fax service providers will be tested.

Customers electing to attempt to integrate with other vendors such as Cisco will be at their own systems integration risk.

### 3.1.2 SQL Express 2012 for small customers

Figure 8 Small customer with 1 VM for msXfax and SQL Express



--- msXfax Internal and DMZ network roles use SMTP to communicate with one another

This implementation combines msXfax Internal and DMZ roles on the one VM together with SQL Server 2012 Express.

3 IP addresses are required.

Windows Server 2008R2 with SP1 and Windows Server 2012.

Memory of the VM is subject to the number of fax channels to be supported with adequate performance from SQL Express.

The MAC address of the VM will need to be fixed as a manual MAC address.

**msXfax customers with a current license will be able to transfer their msXfax license for no additional cost to version 8.**

There will be a license fee for Dialogic (Brooktrout) SR140 fax over IP licences. This is a perpetual license. 1 year's maintenance is mandatory to enable support direct with Dialogic.

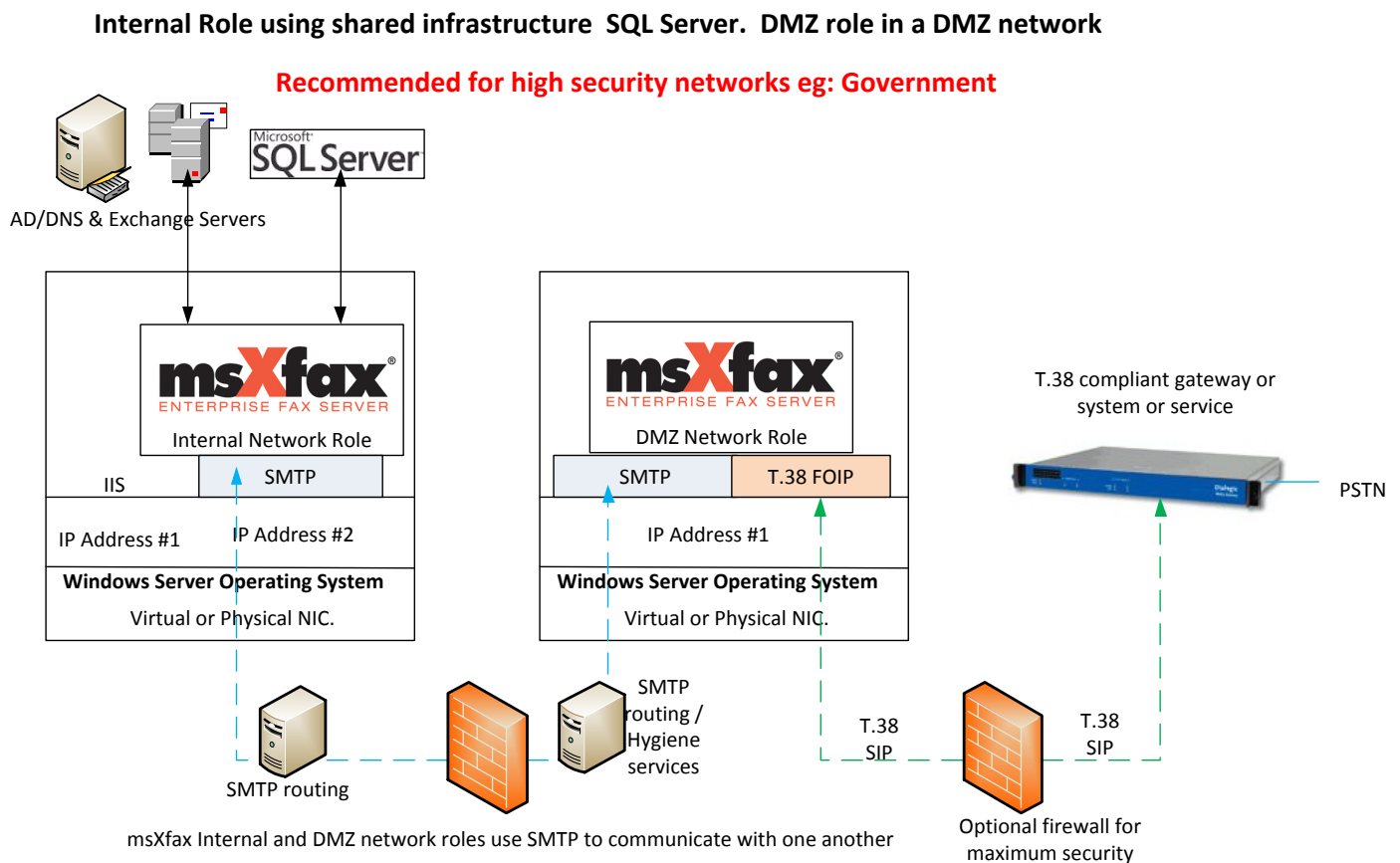
A BNS T.38 certified gateway must be purchased from BNS with the correct software builds to ensure quality assurance of the solution.

Selected SIP Fax service providers will be tested.

Customers attempting to integrate with other vendors such as Cisco will be at their own systems integration risk.

### 3.1.3 Government high security customer

Figure 9 Government customer – network separation with hygiene controls / Defence approved gateway



This implementation has msXfax Internal and DMZ roles separated for maximum security.

Windows Server 2008R2 with SP1 or Windows Server 2012.

Memory of the VM is subject to the number of fax channels to be supported.

The MAC address of the VM in the DMZ will need to be fixed as a manual MAC address.

**msXfax customers with a current license will be able to transfer their msXfax license for no additional cost to version 8.**

There will be a license fee for Dialogic (Brooktrout) SR140 fax over IP licences. This is a perpetual license. 1 year's maintenance is mandatory to enable support direct with Dialogic.

A BNS T.38 certified gateway must be purchased from BNS with the correct software builds to ensure quality assurance of the solution.

Selected SIP Fax service providers will be tested.

Customers electing to attempt to integrate with other vendors such as Cisco will be at their own systems integration risk.

## **3.2 Building a test environment**

Test SR140 licences with 2 channels can be provided for customers to evaluate msXfax version 8.

No SIP gateway is required for testing the functionality of msXfax version 8. A simple software configuration allows T.38 fax sessions to be routed to the second channel. Channel 1 is transmit and channel 2 is receive.

## **3.3 Migration from 7.6 to version 8**

BNS will provide all customers a transition license during the migration phase.

This allows customers to build and test their new platform in test and production then scheduling a cutover from the physical 7.6 fax server to msXfax version 8.

This strategy allows the customer to simply plug in their physical fax server should something not work correctly after cutover.

## **3.4 Inbound routing recommendations**

msXfax version 8 supports a variety of routing methods. Dynamic routing to Exchange distribution groups offers ultimate flexibility and management from within their Internal Exchange network. No routing tables in msXfax are required with this feature.

**Dynamic routing to Exchange distribution groups is the preferred method of routing.**

Customer using Active Directory (AD) to search the notes field or fax number field should consider dynamic routing as it is more efficient, manageable and removes reliance on AD for routing decisions.

Creation of distribution groups is performed using powershell script tools provided with msXfax version 8.