

Kofax Communication Server

TC/LINK-MFP Technical Manual

Version: 10.2.0



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1. Introduction

Multifunctional Peripherals (MFPs) like the Canon iR3320i and the Ricoh Aficio 2035e are able to print, scan, fax and copy. Additionally, MFPs can send scanned documents to a network share or an email address.

TC/LINK-MFP makes it possible to receive scanned documents via SMTP. The document, once routed to Kofax Communication Server, can be routed onto a wide range of destinations.

1.1 Features

TC/LINK-MFP enhances Kofax Communication Server and MFP with the following functionality:

- Sending from the MFP to fax, email and KCS users
- Faxing via the centralized Kofax Communication Server – no telephone lines have to be connected to the MFPs
- Automatic detection of recipient type (no pseudo domains like @fax are necessary, provided the MFP accepts addresses without domain)
- Anonymous sending, notifications are routed back to the MFP and printed there
- Anonymous sending with appended user ID, notifications are routed to the mailbox of the user
- Support for all MFP with SMTP enabled (manufacturer independent)
- Virtual Rescan (VRS)

1.2 Usage

Addressing is easy: On the console of the MFP, simply specify the email address, fax number or KCS user. The different message services are recognized automatically and the document is routed to the correct destination.

Additionally, it is possible to specify the originator in the address. This keeps addressing simple and makes it possible for the user to keep track of his messages via his mail system. Addressing like

```
1234567#UserID
```

creates a send-order from the KCS user "UserID" to the fax number "1234567". After successful sending the user receives a sending copy into the mailbox of his mail system.

1.3 Unicode Support

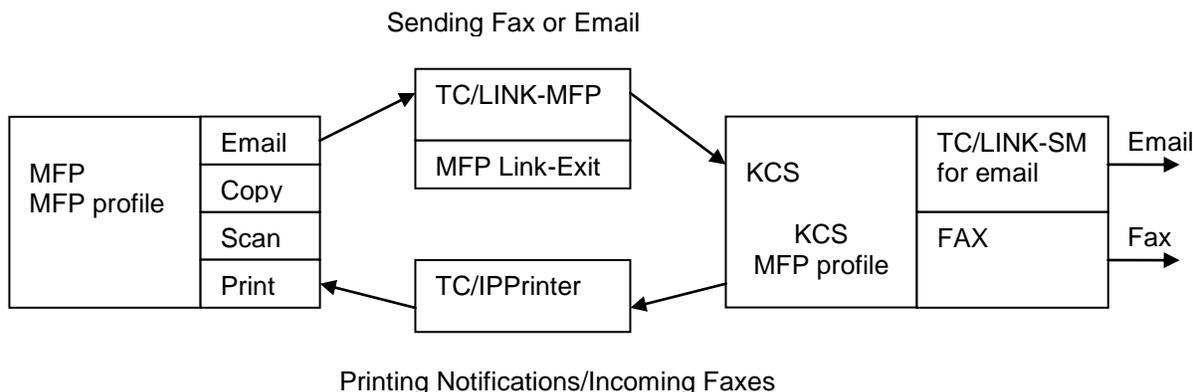
TC/LINK-MFP fully supports Unicode. For more information, see:

- TC/LINK-SM Technical Manual
- Unicode Installation Guide

2. Overview

This manual describes how to configure TC/LINK-MFP and how TC/LINK-MFP collaborates with the MFP and the Kofax Communication Server environment.

The following figure gives an overview of the interaction of the components:



TC/LINK-MFP is used only for communication from the MFP to Kofax Communication Server. Scanned documents are forwarded to Kofax Communication Server and further processed as fax or email. Notifications can be sent either to the user's mailbox, or are returned via TC/LANPRT to the MFP and printed there. Via an internal number assigned to the MFP profile it is also possible to route and print incoming faxes to the MFP.

2.1 Examples for Addressing

The user chooses "Send e-mail" or "Send i-fax" on the console of the MFP, specifies the destination address and scans the document. The MFP sends the scanned document to TC/LINK-MFP.

The following types of addresses are possible: fax, email, KCS User-ID. The type of address is recognized automatically.

Examples of addressing:

```
Fax:          1234567
Email:        user@domain.com
KCS recipient: tcrecip
```

As no specific originator is used, the default "MFP profile" (as configured on the MFP) is the originator of the message. Notifications are sent out and printed on the MFP.

By specifying an additional KCS User-ID after the address, the KCS user profile can be used for sending the document.

Examples of addressing with specifying the originator:

```
Fax:          1234567#tcid
Email:        recipient@domain.com#tcid
KCS recipient: tcrecip#tcid
```

"tcid" is the originator of the message. This ID can either be the KCS User-ID or another configurable unique identification of the originator (see also *MFPConnect Administration Guide – Secure User Identification*). Notifications and sending copies are sent to the mail system of "tcid".

2.2 Supported MFPs

The devices mentioned in this document are examples of supported MFPs. All devices capable of **scanning**, sending as **email** and **printing** can be used as described here. If you do not want to receive faxes or notifications on the MFP, printing is not a necessary feature of the MFP.

For more information see *MFPConnect Administration Guide – Supported MFPs*.

2.2.1 Oki MFP Devices

Oki MFP devices allow scanning and sending to a fax address. In fact, these images are sent to an email address that is configured statically.

The following address syntax is used for the sent emails:

```
/fax=NUMBER/name=NAME/ <EMAIL-ADDRESS>
```

EMAIL-ADDRESS is the preconfigured SMTP address, and NUMBER and NAME is the user input on the MFP device.

TC/LINK-MFP detects this special syntax automatically and creates a send order to service "FAX", number "NUMBER", full name "NAME". The email address is ignored on TC/LINK-MFP – it may however be used for routing to TC/LINK-MFP.

2.2.2 Uniflow Support

TC/LINK-MFP recognizes messages from Uniflow by the text "**NTWSmtpMail**" in the SMTP field "X-Mailer".

In this case the MFP profile name (used to identify the MFP profile on KCS or to automatically create it and for the VRS settings) is set to the fully qualified domain name found in the SMTP field "Message-Id" found after the "@".

Example of SMTP message settings:

```
X-Mailer: NTWSmtpMail V2.5  
Message-Id: <20071017162248.0001.CanonTxNo.0471@mfp3170.tqa-domain.kofax.com>
```

In this case the TC/LINK-MFP sets the MFP profile name to "**mfp3170.tqa-domain.kofax.com**".

3. KCS Prerequisites

3.1 KCS License

TC/LINK-MFP requires its own license that has to be installed on KCS. The license is based on the number of used MFPs. For each MFP you need a license.

3.2 KCS IP Printer

To print faxes and delivery/non-delivery notifications on the MFP, KCS IP Printer must be installed (Kofax Communication Server setup – Server Applications group – IP Printer).

See the *KCS MFPConnect Manual* for details on how to use the IP Printer with TC/LINK-MFP.

For more information see the *KCS IP Printer Manual*.

3.3 Definition of the Fax Header Line

As the MFP sends only binary (PDF) or image (TIFF) attachments, the template ONLYIMG from the TCLINK user's message folder is always used. To specify the header line for faxes sent from the MFP, create a cover (e.g. FIS/ONLYIMGCVR) with the corresponding ++TSI line.

Example:

Then define this cover sheet as default cover in the send options of the ONLYIMG template of the TCLINK user.

Take care that neither ONLYIMG nor the cover contain a form feed (A4)!

3.4 KCS MFP Profile User

On KCS an MFP profile must exist for each MFP. This profile represents the MFP device on the KCS server and is displayed in TCfW as user. The configuration of the host name or IP address of the MFP and has to match with the name of this KCS MFP profile.

The MFP sends email and fax via the MFP profile and receives notifications via this user if no special originator is used. Additionally, this MFP profile defines the VRS settings.

3.4.1 Automatic Creation of MFP Profiles

If enabled, the MFP profile is created automatically when TC/LINK receives the first message from an MFP device (see chapter 3.4.2 – Configuration). Although this happens during address mapping, it works in a way similar to dirsnc. A template profile MFPTEMPL defines settings for MFP profiles. This template profile is created at the link startup if enabled in the registry by setting *HKLM\Software\TOPCALL\TCLINKMFP\Setup\CreateDependenciesTopcall = 1*. It contains placeholders for MFP name, SMTP address, etc. When creating a new MFP profile, the placeholders are replaced by information retrieved from the MFP.

Variables \$Name\$ and \$2\$ are replaced with the fully qualified DNS name of the MFP device. If the fully qualified DNS name cannot be determined, the IP address of the MFP device is used instead.

Variable \$1\$ is replaced with the email address of the MFP.

Note: To guarantee that the email address of the MFP is used as \$1\$, first time creation of the MFP profile must be done un-authenticated – without LDAP. Otherwise, the authenticated user's email address will be used in \$1\$.

Note: Please keep also in mind that VRS does not work at initial creation because no default VRS profile is configured in the template profile.

Template profile (MFPTEMPL):

User Profile - MFPTEMPL (\$Name\$)

Queue Length/Age/Pages logging | TC/Broadcast | FaxPlus | TC/WEB | TC/WEB Identity Rights

General | Address | Event | Rights | Manual Fax | Distributor | Authorize/Sign | Queue Length/Age/Pages alerting

Service: **TOPCALL** | Addr. no.: 1 | Active

User ID: |

Node: |

Active	No	Service	Number:
X	1	TOPCALL	\$Name\$.
	2	SMTP	\$1\$.

User Profile - MFPTEMPL (\$Name\$)

Queue Length/Age/Pages alerting | Queue Length/Age/Pages logging | TC/WEB | TC/WEB Identity Rights

General | Address | Event | Rights | Manual Fax | Distributor | Authorize/Sign

Event: **In** | Service: **MFPIN**

Free address: | Active

Auto termination | Registered

Filter: **all** | Archive entry

Used for: | Sender service: **(All)** |

Recipient number: **(All)** | Delivery type: **(All)** |

Active	Event:	Service	Number:	Archive	Auto	Registe	Deliver	Sender
X	In	MFPIN	duplex=1&transport=tcp&printer=\$2\$.	Always	X		(All)	(All)
X	DelNotif	MFPDEL	pages=1&duplex=1&transport=tcp&printer=\$	Always	X		(All)	(All)
X	Non-delNotif	MFPNDEL	pages=1&duplex=1&transport=tcp&printer=\$	Always	X		(All)	(All)

Thus, a newly created MFP profile has a KCS address matching the MFP name and events that forward notifications and incoming messages to the MFP device (via the IP Printer).

Example of resulting MFP profile:

User Profile - at011018.emea.kofax.com (at011018.emea.kofax.com)

Queue Length/Age/Pages alerting | Queue Length/Age/Pages logging | TC/WEB | TC/WEB Identity Rights

General | Address | Event | Rights | Manual Fax | Distributor | Authorize/Sign

Service: **TOPCALL** | Addr. no.: 1 | Active

User ID: |

Node: |

Active	No	Service	Number:
X	1	TOPCALL	at011018.emea.kofax.com,
	2	SMTP	at011018@kofax.com,

| |

User Profile - at011018.emea.kofax.com (at011018.emea.kofax.com)

Queue Length/Age/Pages alerting | Queue Length/Age/Pages logging | TC/WEB | TC/WEB Identity Rights

General | Address | Event | Rights | Manual Fax | Distributor | Authorize/Sign

Event: **In** | Service: **MFPIN**

Free address: | Active

Auto termination | Registered

Filter: **all** | | Archive entry: **Always**

Used for: | Sender service: **(All)** | |

Recipient number: **(All)** | Delivery type: **(All)** | |

Active	Event:	Service	Number:	Archive	Auto	Registe	Deliver	Sender	Filter
X	In	MFPIN	duplex=1&transport=	Always	X		(All)	(All)	all
X	DelNotif	MFPDEL	pages=1&duplex=1&	Always	X		(All)	(All)	all
X	Non-delNotif	MFPNDEL	pages=1&duplex=1&	Always	X		(All)	(All)	all

| |

License check:

TC/LINK-MFP consumes an MFP license for every MFP profile it creates. If no license is available, the profile cannot be created and the message from the MFP is not accepted.

Messages to the operator:

After the successful creation of a new MFP profile, TC/LINK-MFP sends a success message to the postmaster user on KCS. The default success message contains the profile name, creation date and time and the number of remaining MFP licenses:

```
Note:
A new MFP profile mfp1234.kofax.com has been created at 2006-11-21 10:29:30.
There are 6 unused licenses left.
Please configure a fax extension and a VRS profile for the MFP device.
The device URL is http://mfp1234.kofax.com/
```

If the profile creation fails, an error message is sent to the postmaster user. By default, this error message looks like the following:

```
Note:
Error 621 occurred while trying to create MFP profile mfp1234.kofax.com 2006-11-21
10:29:30.
There may be a license problem.
The device URL is http://mfp1234.kofax.com/
```

The content and the recipient of these messages are configurable via TCfW. TC/LINK-MFP installs two template messages in the message folder of the TCLINK user: MFPOK is a template for the success message. MFPErr is a template for the error message.

The complete template message (including sender, recipients, sending options, content) is used as a basis for the real message that is sent.

In the message subject and text blocks, the following variables are substituted:

<code>\$Name\$</code>	name of the created MFP profile
<code>\$TimeUtc\$</code>	current date and time in GMT time (YYYY-MM-DD hh:mm:ss)
<code>\$TimeLocal\$</code>	current date and time in local time (YYYY-MM-DD hh:mm:ss)
<code>\$LicensesLeft\$</code>	number of remaining licenses
<code>\$Error\$</code>	internal error number (e.g. 621 for licensing error)
<code>\$LicenseOwner\$</code>	name used for registration (RegisteredObject)

If the messages are to be sent to another user or address, just change the recipient of the template message. TC/LINK-MFP does not have to be restarted after modifying the template message.

3.4.2 Configuration

The string registry value

```
HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCLINKMFP\MFP\ProfileAutoCreate
```

is used to turn the automatic creation of MFP profiles on ("1") or off ("0"). By default automatic creation of MFP profiles is disabled.

4. MFP Configuration

The MFPs have to be configured to send email or i-fax to TC/LINK-MFP.

Typically, you can configure this on the device itself, or via a web administrative interface. The SMTP server address has to be set to the TC/LINK-MFP IP address/name. The email address has to be set to the address of an existing KCS MFP profile user, further on called the "MFP profile".

The MFP profile becomes the originator of the messages that are sent anonymously (without specifying an originator). Sent documents can be found in the user's outbox. The user address is used as the originator. Events are used to route notifications back to the MFP. Each MFP has to have its own MFP profile.

4.1 General

The following things have to be configured on each MFP:

- SMTP server (destination for the emails): IP address or name of the TC/LINK-MFP computer.
- Originator (also called Reply-To) email address of the MFP: The SMTP address of the MFP profile on KCS.

Note: It is recommended to choose an email address for the MFP which is similar to the host name of the MFP to guarantee that replies work properly!

For example:

```
MFP host name:      mfp1234.mydomain.com
MFP email address: mfp1234@mydomain.com
```

It is recommended to set the following default values on the MFP if possible:

- Typically, disable any automatic message text if possible. If you want to use message text on faxes, create appropriate fax cover sheets. However, the described configuration in this manual assumes that there is no message text.
- If the MFP supports iFax, it can be used. Otherwise, the recommended image format settings for sending fax are TIFF, black and white, 200dpi; that is optimized for sending fax.
- If Virtual Rescan (VRS) is used, it is recommended to scan documents with grey scale or color. With black and white images VRS does not have much effect.
- If using VRS for OCR, it is recommended to scan documents with grey scale or color, 300dpi and to use TIFF as file format.

Additionally, you might want to configure default values like preferred maximum message size, timeouts, login behavior, and other parameters on the MFP.

Generally, the behavior of the devices of different vendors is quite similar. Of course, the configuration screens are different, and some default settings might require modification.

4.2 MFP Example Configurations

Please see the following MFPCoconnect manuals for specific MFP vendors:

- MFPCoconnect Administration Guide for Canon MFP Devices
- MFPCoconnect Administration Guide for Ricoh MFP Devices
- MFPCoconnect Administration Guide for Lexmark MFP Devices
- MFPCoconnect Administration Guide for Hewlett Packard MFP Devices
(This manual shows also detailed examples for configuration of authentication and address books that might also help for other types of MFPs.)
- MFPCoconnect Administration Guide for KonicaMinolta MFP Devices
- MFPCoconnect Administration Guide for Xerox MFP Devices

For details on how to configure a device see the MFP documentation of your MFP vendor.

4.3 Kofax GlobalScan Integration

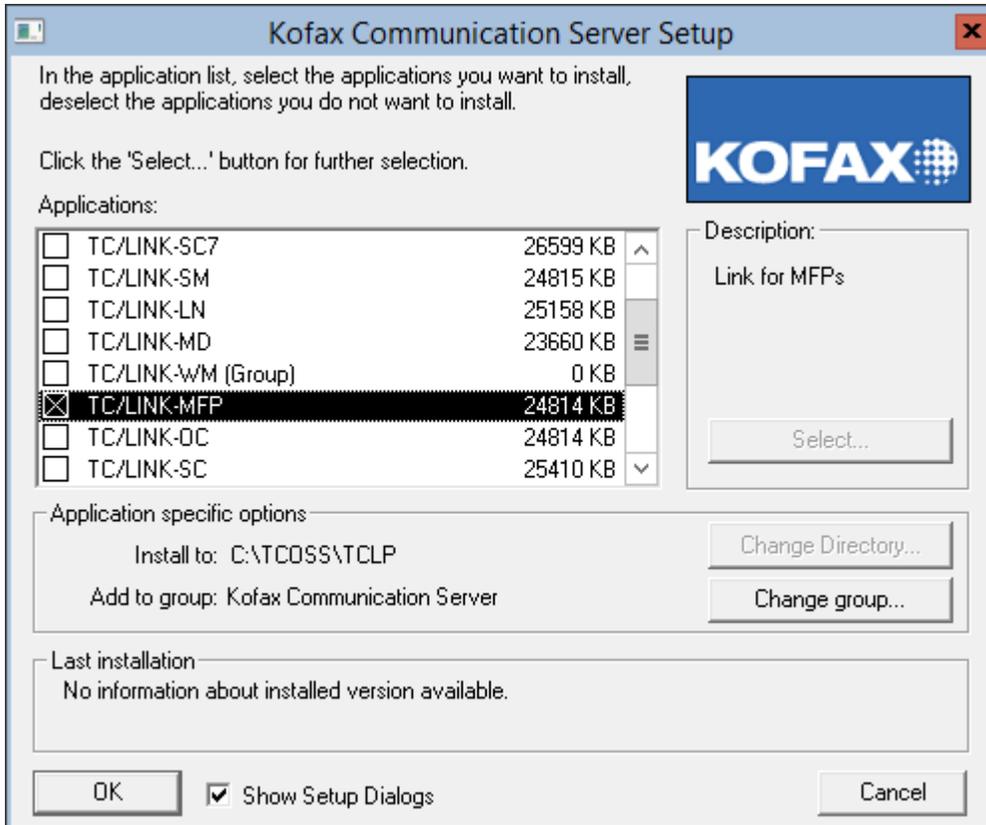
Kofax provides a plug-in for the Ricoh GlobalScan server. Please contact Kofax staff for more information.

4.4 Kofax Fax Connector for eCopy ShareScan OP

Kofax provides a Connector for eCopy ShareScan OP. Please contact Kofax staff for more information.

5. TC/LINK-MFP Installation

TC/LINK-MFP is used for receiving messages from the MFP. The standard TC/LINK-SM functionality is enhanced by the TC/LINK-MFP Link Exit module.



Start Kofax Communication Server setup and select TC/LINK-MFP from the Links group.

First, you have to go through the standard TC/LINK-SM setup screens. See the TC/LINK-SM manual for details.

5.1 Recommended General TC/LINK Settings

You can enable VRS processing to improve image quality.

The dialog box is titled "TC/LINK-MFP - ADVANCED link specific parameters" and contains the following settings:

- Link Queue (without format character): TCMFPQ
- Default Graphic Format: I,TCI
- Image formats polled by TC/LINK-MFP: I01234PBDGMNFC
- Poll Cycle (seconds): 30
- Set Entry AT NEXT NODE: NO
- Enable Document Converter (TCDC): YES
- Support MetaMail:
- Enable VRS:
- Create dependencies on TCOSS server:
- Create dependencies on mail server (if supported):

Buttons: OK, Cancel

Force the creation of delivery and non-delivery notifications ("Advanced Setup" only) in order to get notifications printed on the MFP:

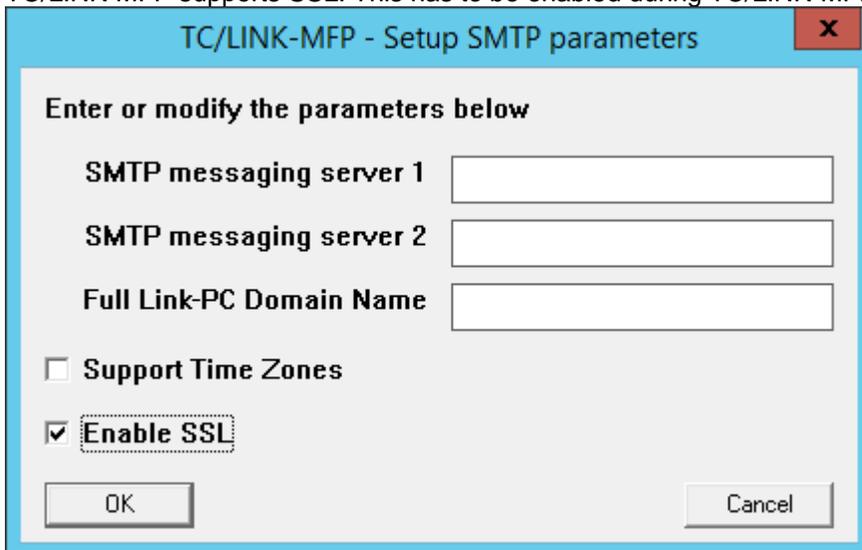
The dialog box is titled "TC/LINK-MFP - ADVANCED - Sendoptions to KCS" and contains the following settings:

- Status for messages not sent: Cancelled (recommended)
- Language for error messages: English (tc01.err)
- Force Delivery Notifications to mail:
- Force NonDelivery Notifications to mail:

Buttons: OK, Cancel

5.2 Enabling SSL

TC/LINK-MFP supports SSL. This has to be enabled during TC/LINK-MFP setup on the following screen:



TC/LINK-MFP - Setup SMTP parameters

Enter or modify the parameters below

SMTP messaging server 1

SMTP messaging server 2

Full Link-PC Domain Name

Support Time Zones

Enable SSL

OK Cancel

Enabling SSL means that the necessary additional libraries including the TC/LINK-MFP own SSL certificate are copied and the following registry keys are set:

```
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMSDDMode = 1
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMRcvSecure = 3
```

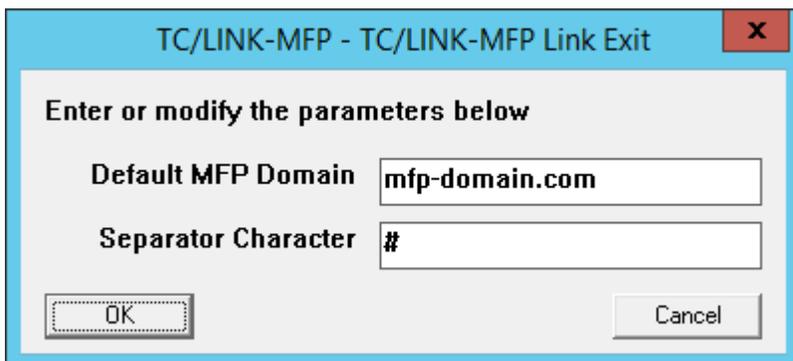
SMSDDMode enables/disables SSL sending. SMRcvSecure = 3 means that SSL and non-SSL messages are accepted. For details on SSL settings see the TC/LINK-SDD manual.

The MFP devices have to support SSL (RFC standard: TLS) and have to be configured to use it. Although TC/LINK-MFP provides its own self-signed SSL certificate, the customer should use his own one; to use the self-signed certificate delivered with TC/LINK-SDD, rename the files PRIVATE_SELF_SIGNED.PEM and CERTIFICATE_SELF_SIGNED.PEM in the TOPCALL\SHARED folder to PRIVATE.PEM and CERTIFICATE.PEM. See the TC/LINK-SDD manual for details.

Hint: Using SSL with TC/LINK-MFP means that the SMTP protocol command "STARTTLS" is used. When both sides agree on using it, the data stream between the SMTP client (the MFP device) and TC/LINK-MFP is encrypted. TC/LINK-MFP decrypts the content again and processes the message to the KCS server.

5.3 TC/LINK-MFP Specific Settings

The following setup screen is specific for TC/LINK-MFP:



TC/LINK-MFP - TC/LINK-MFP Link Exit

Enter or modify the parameters below

Default MFP Domain

Separator Character

OK Cancel

Default MFP Domain: This value is appended to recipient addresses without a domain part (except when the recipient is a fax number or an existing KCS user.) Specify the mail domain of your customer here (e.g. "kofax.com").

Separator Character: This setting defines the separator between address and originator.

5.4 VRS Settings

If you have chosen to use VRS, Kofax VRS Components are installed. Also, a set of predefined VRS profiles is installed in the message folder of the MFPTEMPL user. By convention, these messages start with the string *VRS*.

Note:

1) These VRS profiles are actually created in the course of the TC/LINK-MFP process. Therefore, the very first step to establish VRS profiles on KCS is starting TC/LINK-MFP.

2) In case of a later update of TC/LINK-MFP without VRS, the VRS components will remain on the computer and KCS will keep the VRS profiles. (Reason: it is possible that other TC/LINK-MFP instances that may be installed even on another computer are still using VRS.) Nevertheless, all VRS-related registry settings will be removed from the updated TC/LINK-MFP.

5.5 Using TC/LINK-MFP for Outgoing Email

If you want to use TC/LINK-MFP for sending emails from KCS as well (you have no TC/LINK-SM installed) it is necessary to set the SMTP service to the own service which is TCMFP by default:

```
HKLM\Software\TOPCALL\TCLINKMFP\MFP\ServiceSmtplib = "TCMFP"
```

Additionally, the following TC/LINK-SM specific settings are recommended:

```
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMLinkDomain = "company.com"
```

SMLinkDomain should be set to the default domain. It is only used if the originator has no domain specified.

Normally, TC/LINK-MFP is using a customer's mail server as mail relay. Therefore, the host name of that server has to be entered during the setup or afterwards in the registry:

```
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMFixedRecipient = "mailserver.company.com"
```

To deliver mails to the mail router of the customer, set

```
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\UseDNS = 0
```

If the customer does not use a mail relay server, set the following:

```
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMFixedRecipient = ""  
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\UseDNS = 2
```

Either leave "SMFixedRecipient" empty, or specify the used mail relay.

Note: The registry key "SMFixedRecipient" must not be set to the TC/LINK-MFP computer name! In combination with "UseDNS" set to 0 this will lead to messages sent in a loop again to TC/LINK-MFP. A message loop however is avoided by the TC/LINK-MFP default setting of the key "General\NfLoopDetection" to 2.

6. Windows NLB Load Balancing / Fault-Tolerant Installation

6.1 Overview

The TCSRVLB port control feature enables to install TC/LINK-MFP on Windows NLB (Network Load Balancing) cluster in fault tolerant, highly available way. The TCSRVLB supervising directs the SMTP traffic always only to the operating NLB nodes, excludes the not operating nodes (on port level) from the traffic and so prohibits failed SMTP connection attempts.

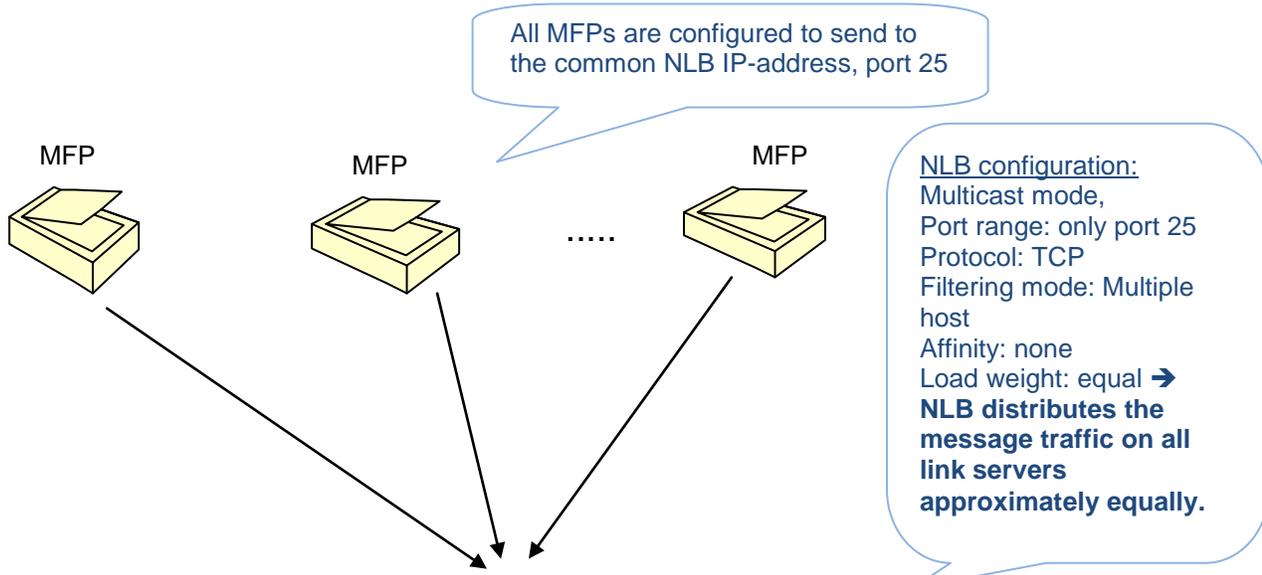
For the detailed description of the TC/LINK-MFP NLB cluster installation please refer to *TC/LINK-SM manual / chapter "Windows NLB Cluster Installation – with TCSRVLB Support"*. (This description applies to all TC/LINK-SM-derived links including TC/LINK-MFP.)

Details about the TCSRVLB supervising you find in the *TCSRVLB User Manual / chapter "Windows NLB Port Control for TC/LINK-SM"*.

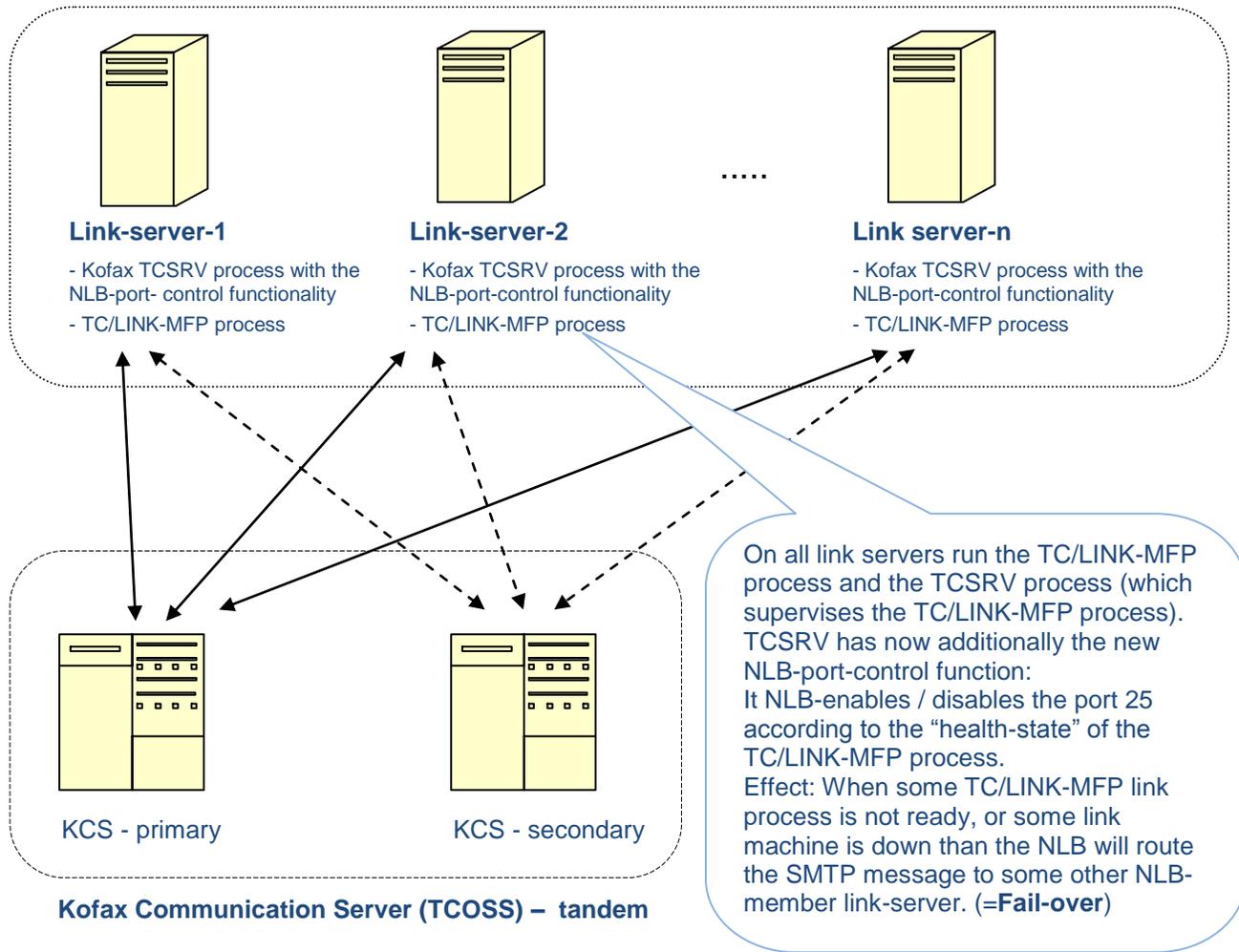
6.2 High Scalability

Increasing the number of NLB nodes (=number of link servers) in the NLB cluster elevates the throughput. Up to 32 (=max. NLB node count) parallel link-servers can be installed – this provides scalability in wide range. The traffic will be equally balanced on the NLB nodes.

6.3 TC/LINK-MFP NLB-Cluster Installation Schema



Windows Network Load Balancing (NLB) cluster (common IP-address)



7. TC/LINK-MFP Configuration

For TC/LINK-SM specific registry keys and configuration please see the TC/LINK-SM manual. For general TC/LINK parameters, see the general TC/LINK manual.

The following registry values are used by the TC/LINK-MFP Link-Exit:

HKEY_LOCAL_MACHINE\ SOFTWARE \TOPCALL\TCLINKMFP\MFP

Registry Key	Type	Default	Description
DefaultMfpDomain	STRING	"mfp-domain.com"	The default domain is used if an address without domain is neither a KCS user nor a fax address. In this case the message is sent as email to "address@mfp-domain.com".
MFPUserTemplate	STRING	"MFPTEMPL"	Name of the MFP template user for automatic creation of MFP profiles. The value is created (if not existing) at link startup.
NotifUserNotFound1	STRING	"Non-Delivery Notification:"	These three settings are used to generate a non-delivery notification which is printed on the MFP, if a specified originator cannot be found on KCS. The token \$USER\$ is replaced by the non-existing originator. This non-delivery will only be generated if UseOrigMfp=0; otherwise the MFP profile is used as originator. See also UseOrigMfp.
NotifUserNotFound2	STRING	"User >\$USER\$< not found."	
NotifUserNotFound3	STRING	"Message was not processed."	
NumberCharRemove	STRING	" -_, ;:*~\()=\$#<>"	The characters of that string are regarded as fillers to make a fax number more readable and will be removed from the recipient number. If additional characters are found in the fax number beside those defined in NumberCharSet, the message is interpreted as an SMTP address.
NumberCharSet	STRING	"+0123456789"	Characters that are accepted in a fax number. If additional characters are found beside those defined in NumberCharRemove, the message is interpreted as an SMTP address.
ProfileAutoCreate	STRING	"0"	Defines if TC/LINK-MFP automatically creates MFP profiles on KCS. "0" – Automatic creation is disabled "1" – Automatic creation is enabled
ProfileResolveIp	DWORD	1	When enabled (1) DNS services are used to get the fully qualified domain name from the received IP address to identify the sending MFP device. See also section <i>Hints – Resolving MFP Profiles</i> .
ProfileResolveName	DWORD	1	When enabled (1) DNS services are used to get the fully qualified domain name from the received host name to identify the sending MFP device. See also section <i>Hints – Resolving MFP Profiles</i> .
RemoveRoutingAddresses	DWORD	0	This setting makes it possible to remove routing information. Routing information might be necessary to access TC/LINK-MFP from remote locations via SMTP backbones (e.g. addressing works like 234566#userid@company.com from the MFP; at TC/LINK-MFP, @company.com is removed). "0" – Not used. "1" – Last @ and everything after that is removed.
SepOriginator	STRING	"#"	This setting defines the separator between address and originator. If you change the default setting, take care not to use a character that occurs in email addresses.

Registry Key	Type	Default	Description
ServiceSecureId	STRING	""	This service defines the address type where the secure identifications of the users are stored on KCS. If this service is not set (blank) all address types including the KCS User-ID are valid identifications.
ServiceFax	STRING	"FAX"	These settings define the services as used on the KCS server. ServiceFax and ServiceSmtp can also be used as pseudo domains when sending from the MFP: This is only possible when specifying an email like address (e.g. user@TOPCALL or 123456@FAX).
ServiceSmtp	STRING	"SMTP"	
ServiceTOPCALL	STRING	"TOPCALL"	
TextBodyRemove	DWORD	1	Defines if the text body of an MFP message is removed. This is useful for MFPs that always send unnecessary preconfigured information in the text body of the message. "0" – No text body is removed. "1" – The text body is removed for fax, SMTP, KCS messages
UseOrigMfp	DWORD	1	Defines if messages from invalid users should be processed or not: "0" – Messages from an invalid user lead to a non-delivery to MFP profile; as originator the MFP profile is set as well. "1" – Instead of the invalid user, MFP profile is used.

7.1 Tracing

The following general TC/LINK configuration is used for tracing:

```
HKEY_LOCAL_MACHINE\ SOFTWARE \TOPCALL\TCLINKMFP
```

Registry Key	Type	Default	Description
General\Tracelevel	DWORD	10	10 (dec) Standard 255 (dec) Debugging
TCIMG32\TraceLevel	DWORD	0	0 (dec) Standard 255 (dec) Debugging of the image i/o module and VRS
TCLSMTPCPDebug	DWORD	0	0 (dec) Off 1 (dec) On – This shows the SMTP protocol data in the trace file; that way you can check e.g. if SSL is used, in this case you will find the command STARTTLS in the trace file

7.2 Recommended Additional Settings

The settings below are recommended optional settings; they have to be set manually with the registry editor and improve TC/LINK-MFPs security. For detailed information please refer to the TC/LINK-SM manual.

7.2.1 IP Addresses for Access Control

```
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMIPList = "MfpDomains"  
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMIPMasking = 0
```

Since the SMRouteEnable value has to be set to 1, it is recommended to configure the "SMIPList" value. You have to define the MFP's domains that are allowed to send to TC/LINK-MFP. Additionally, you have to set the value SMIPMasking to 0. These settings force TC/LINK-MFP to only accept emails from the MFPs.

7.2.2 Printing of Non-Delivery and Delivery Notifications

If you want to receive delivery notifications for scanned and sent documents, you have to configure the following setting for TC/LINK-MFP (if you have not already specified during setup):

```
HKLM\Software\TOPCALL\TCLINKMFP\TOPCALL\SOForceDelNotif = 1
HKLM\Software\TOPCALL\TCLINKMFP\TOPCALL\SOForceNonDelNotif = 1
```

7.2.3 Maximum Concurrent SMTP Connections

By default TC/LINK-SM allows only one concurrent connection for incoming SMTP mails. This is defined by the registry key:

```
HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\SMMaxConn
```

By setting this value to a higher value it is possible to allow up to 20 simultaneous connections.

7.2.4 Alternative Content

TC/LINK generally submits all message alternatives to KCS (to original and the converted part of the message). With the registry key

```
HKLM\Software\TOPCALL\TCLINKMFP\General\AltExtSuppressBinary
```

you can define a list of file types (extensions) that are transmitted without a binary representation (the original). That way it is possible to reduce the message size that is transferred from the TC/LINK-MFP computer to KCS.

7.3 Document Conversion

The MFPs create emails with the scanned document as attachment. There are three different attachment types possible: TIFF (black & white, grey or color), PDF and JPEG. It depends on the capabilities and settings of the MFP which of the attachment types is used.

To fax the scanned document it is necessary to convert the attachments. Make sure that these conversions are supported by TC/LINK. There are two possibilities to do the necessary document conversion:

- VRS (Virtual Rescan): If you are using VRS, the necessary conversion is done by the VRS modules; see the section "VRS Configuration" for details – in this case you do not need the TC/LINK Document Converter.
- TC/LINK Document Converter: If you are not using VRS, you have to use this method; see the section "TC/LINK Document Converter".

7.4 VRS Configuration

7.4.1 Background on VRS Conversion

Kofax VRS (Virtual Rescan) technology is used to get a better quality of scanned images. Additionally, TCIMGIO with VRS converts images from the formats TIF, PDF, and JPG to FAX images – i.e., the classic KCS document conversion via the printer driver is no longer necessary for these attachment formats.

VRS conversion is part of the general TC/LINK message conversion process. TC/LINK calls the module TCIMGIO, and TCIMGIO calls the VRS modules.

TC/LINK calls TCIMGIO if for the attachment type the following registry entries exist (XXX stands for a file format, the relevant ones for this example are TIF, PDF, JPG):

```
HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCLINKMFP\General\FmtXXX
```

Name	Type	Description
InputExtensions	SZ	Comma separated list, case-insensitive. e.g.: TIF, TIFF All files with these extensions are recognized correctly. If the value is empty, TCLINK does not use TCIMGIO for this file format.
OutputExtension	SZ	1 extension for output (message to mail system). E.g.: TIF Maximum length: 4 characters Image files created by TCLINK will have this extension.

The registry keys for TIF, PDF and JPG have to have the following values:

Key	InputExtensions	OutputExtension
FmtJPG	JPG, JPEG	JPG
FmtPDF	PDF	PDF
FmtTIF	TIF, TIFF	TIF

To see how TC/LINK-MFP supports TIF conversion, see TC/LINK Technical Manual – Chapter: Image Format Conversion.

The following TCIMGIO configuration is necessary for VRS: (Normally, you do not have set it manually. The installation procedure sets it if VRS option is selected.)

HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCLINKMFP\TCIMG32\VRS

Registry Key	Type	Default	Description
Enable	DWORD	0	0 – VRS disabled 1 – VRS enabled
SettingsFile	STRING	""	VRS parameter file with full path, e.g.: "C:\TOPCALL\ SHARED\VRS_SETTINGS_HP4345.TXT"
MfpDevice	STRING	""	Name of the MFP device; only used by setup.

TCIMGIO calls the VRS conversion modules, if the following conditions are met:

- TCLINKMFP/TCIMG32/VRS/Enable = 1
- The image format is TIF, PDF or JPG (the file extension is tif, tiff, pdf, jpg or jpeg)

The VRS-output image is stored in the Windows temporary directory and it is deleted after further conversion to the TC FAX image format (TCI).

7.4.2 VRS Parameters

Normally, the VRS parameters are stored on KCS in the message folder of the generic MFP template user (User ID: "MFPTEMPL"). Each MFP has its own VRS profile in this message folder. The VRS profile used by a certain MFP is defined in its MFP profile.

The VRS parameters are simple text messages containing one single line with the following syntax:

```
"ParName1=ParValue1, ParName2=ParValue2, ..."
```

See the table below for the allowed parameter names and values. If a parameter is missing, the default value is assumed.

Typically, only the parameters *AutoBrightness*, *BWContrast*, *ColorGamma*, *EdgeAggr* are changed and mentioned in the parameter file.

Example:

```
"DetectOrientation=1, AutoBrightness=1, BWContrast=207, ColorGamma=120, EdgeAggr=140"
```

VRS parameters:

Name	Values	Default
BRIGHTNESS:		
AutoBrightness	0=off, 1=on	0=off
BWBrightness	[0, 255]	128
CONTRAST:		
BWContrast	[0, 255]	128
GAMMA CORRECTION:		
ColorGamma	[0, 255]	128
EDGE AGGREGATION:		
EdgeAggr	Typical values: 88, 92, 128, 160, 163, 168, 192.	128
DESPECKLE:		
DespeckleEnable	0=off, 1=on	0=off
DespeckleHeight	Max height in pixels of speckles to be removed.	0
DespeckleWidth	Max width in pixels of speckles to be removed.	0
CROP / DESKEW / ROTATE:		
AutoDeskew	0=off, 1=on	0=off
AutoCrop	0=off, 1=on	0=off
AutoOrientation DectectOrientation (old name)	0=off, 1=on	0=off
OTHER:		
AdvancedClarity	0=off, 1=on	0=off
BlnkPgDeletion	0=off, 1=on	0=off

Brightness: The balance of light and dark shades in a scanned image; sometimes called “density”.

Contrast: The range between the lightest tones and the darkest tones in an image. With no image enhancement, 50% is the normal contrast.

Gamma correction: Gamma is the value that identifies the degree of contrast in a photograph or electronic image according to a gradation curve. Gamma correction is the adjustment of contrast in an image.

Edge aggregation: character thinning/thickening

Despeckle: An image cleanup feature that removes unwanted dots or speckles from an image. This provides a cleaner image and can improve the readability of the image (for example, for OCR processing).

Deskew: Process of straightening a crooked image. Deskewing can improve the readability of the image (for example, for OCR processing).

Crop: Cropping pages to its original size if scanner produces black or white borders. Auto Crop is important for a precise registration of each image in order to perform accurate optical character recognition (OCR).

AutoOrientation (old: “**DectectOrientation**”): auto orientation feature (also called "content-based rotation") to enable automatic rotation of 90, 180, or 270 degrees, based on the detected orientation of the text in the scanned image. For example, if a document scanned in accidentally upside-down, VRS recognizes this by text recognition and rotates the image 180 degree. (The spelling of this parameter is in fact “DectectOrientation” instead of “DetectOrientation”. This is a “spelling bug” in the old VrsCmd2.dll interface DLL.)

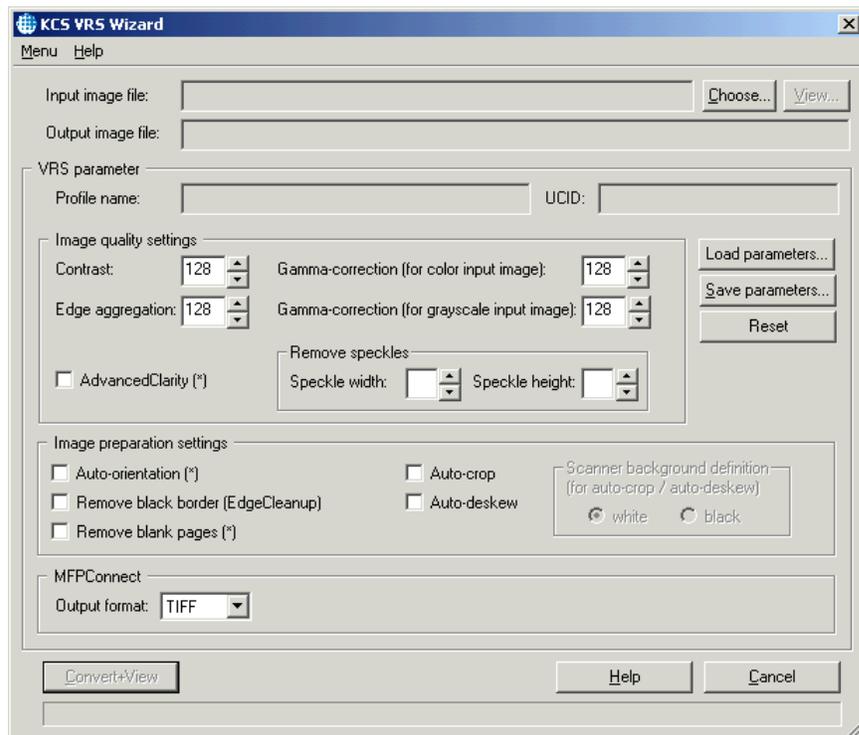
AdvancedClarity: advanced thresholding techniques for suppressing densely pattern document backgrounds

BlnkPgDeletion: automatically removes any page that it can confidently determine to be blank

7.4.3 VRS Wizard Utility

The KCS VRS Wizard utility is a supplement to KCS MFPCoconnect product. It is a simple configuration and test tool that assists you to maintain the MFPCoconnect service-dependent VRS configuration on KCS and also, helps you to find the optimal Kofax VirtualReScan (VRS) parameters for a certain multifunctional peripheral (MFP) device.

VRS Wizard (VrsTest.exe) is always included in TC/LINK-MFP installations. You can find a shortcut to it on the desktop and in the start menu. (It is installed actually in C:\TOPCALL\Shared\VrsWizard.)



With this tool you can:

- Maintain VRS use-case IDs on KCS.
- Maintain VRS profiles stored on KCS (or in a VRS parameter file, which is an old method that applies to MFPCoconnect V2.0 or lower)
- Maintain MFP shadow user => VRS profile assignment on KCS.
- Perform VRS conversion for test purposes on a given (unprocessed) image file and display the output image on a TIFF viewer of your choice. This output image will be saved automatically in the same folder as the input file. Its file name will contain the main applied VRS settings (contrast/gamma correction/edge aggregation), which makes the subsequent identification of the output images easier.

Note: This tool only helps to perform VRS conversion comfortably on a given image file with different VRS parameters. Choosing the optimal VRS parameters still has to be done by the tester.

For more information see *VRS Wizard Technical Manual*.

7.4.4 Used VRS Version

TC/LINK setup installs Kofax VRS Elite 5.1.

7.4.5 TIFF Format Restrictions

7.4.5.1 Compression Mode

The following TIFF files compression modes are supported (input image) by TCIMGIO with VRS:

Compression mode (TIFF-Tag=259)	Description	Supported
1	no compression	Yes
2	CCITT modified Huffman RLE	Yes (only b/w compression format!)
3	CCITT Group 3 fax encoding (CCITT T.4)	Yes (only b/w compression format!)
4	CCITT Group 4 fax encoding (CCITT T.6)	Yes (only b/w compression format!)
5	LZW (Lempel-Ziv & Welch)	Yes
6	JPEG	Yes
7	JPEG NEW	Not supported
32773	Packbits Macintosh RLE	Yes
3xxxx	Other	Not supported

7.4.5.2 Color Mode

The following TIFF color modes are supported (input image) by TCIMGIO with VRS:

BitsPerSample (TIFF-Tag=258)	Description	Supported
1	b/w	Yes
8	grayscale	Yes
8,8,8	color	Yes
4	grayscale	Not supported
4,4,4	color	Not supported
8,8,8,8	color	Not supported
Other		Not supported

Note: When VRS parameter ColorMode is set to 2 or 1 in settings file for a link, sending a fax with attachment may not work.

7.5 TC/LINK Document Converter

To fax the scanned document it is necessary to convert the image documents as they arrive from the MFP. If you are not using VRS, you have to make sure that these conversions are supported by the TC/LINK Document Converter.

7.5.1 PDF

To convert PDF attachments you need the KCS - PDF to TCI converter (price list item TC-05980).

7.5.2 TIFF

Pure black & white TIFF files are converted directly by TCIMGIO without external application. But if the MFP sends grey scale or color TIFF files an external application has to be used for conversion, e.g. the standard Windows TIFF viewer "Imaging for Windows".

If the Microsoft Office is installed, you can use Word to convert the TIFF files. Copy the conversion script DOC.TXT (located in C:\TCOSS\TCLP\SCRIPT) to TIF.TXT and TIFF.TXT. That way Microsoft Word will be

used to convert files with the extension “tif” and “tiff”. **Note:** When using Microsoft Word, only the first page of multi-page TIFF is printed!

Instead of using MS Word, any other image viewer like e.g. “IrfanView” can be used. Please take care that the application you want to use for conversion is the default application for printing TIFF files (most image viewers offer the possibility to register themselves automatically as default application for specific image types).

To test if the application works properly, open the Windows File Explorer and use the right mouse key on a colored TIFF File. The context menu should now offer the possibility to print the graphic file. Using the print option should launch the image viewer and print the file automatically (without user intervention) to the default printer. After the printout the application has to close.

7.5.3 JPEG

If Microsoft Office is installed, you can use Word to convert the JPEG files. Just copy the conversion script DOC.TXT (located in C:\TCOSS\TCLP\SCRIPT) to JPG.TXT and JPEG.TXT. Thus Microsoft Word will be used to convert files with the extension “jpg” and “jpeg”.

You can also use the Windows Internet Explorer version 6 to convert JPEG files. For this you have to use the HTML conversion script HTML.TXT and the module TCSLEEP.DLL from Bernhard Schütz (both can be found in the Notes „Errors, Enhancements and Hints” Database, #5257).

Copy TCSLEEP.DLL to C:\TOPCALL\Shared and register it with REGSVR32. Copy HTML.TXT as JPG.TXT to the scripts directory and comment out the following line:

```
'SaveAsText WebBrowser, FileName
```

7.6 Secure User Identification

TC/LINK-MFP allows identifying the sending user within the recipient number with the following syntax:

```
number#user-id
```

The token “number” is the fax recipient address and “user-id” is the string or number identifying the KCS user. The following registry keys allow configuring this feature:

HKEY_LOCAL_MACHINE\ SOFTWARE \TOPCALL\TCLINKMFP\MFP

Registry Key	Type	Default	Description
ServiceSecureId	STRING	""	This service defines the address type where the secure identifications of the users are stored on KCS. If this service is not set (blank) all address types including the KCS User-ID are valid identifications.
SepOriginator	STRING	"#"	This setting defines the separator between address and originator. If you change the default setting, take care not to use a character that occurs in email addresses. To disable this feature set the key to empty.

Notes/restrictions regarding secure user identification:

- No blanks are allowed in the secure ID.
- The Secure ID is case sensitive.
- The IDs have to be unique and have to be kept private to the owning user similar as a password.
- The user IDs have to be maintained on TCfW or on a Directory that is synchronized (using “Dirsync”) to KCS.

- The Secure User ID is attached as plain text to the recipient number on the MFP, the transfer and the maintenance in TCfW is also plain text. Therefore, this method cannot be regarded as strong security. For strong security the user authentication feature of the MFP devices (typically using an LDAP or Active Directory) has to be used.
- If the registry key "ServiceSecureId" is blank or set to a service type containing a publicly known attribute of the user (like FAX, FXI for the fax extension or KCS for the User-ID) this can of course lead to misuse (recipients sending under a false user account) and therefore cannot be regarded as secure.

7.6.1 Background

The registry key "TCLINKMFP\Mfp\ServiceSecureId" defines the service for the secure user identification.

If the registry key is set and the separator ("#") exists in the recipient address, TC/LINK-MFP searches for a user with this address on KCS. If the user exists, the user ID is used as the "from" address.

If the registry key is empty and the separator ("#") exists in the recipient address, TC/LINK-MFP searches for a user with that user ID or any address on KCS (as it was done until now). If the user exists, the user ID is used as the "from" address.

Example 1:

```
ServiceSecureId =MFPSEC
Recipient=1234#abcd
User xy with address MFPSEC,abcd exists -> from-address = xy
```

Example 2:

```
ServiceSecureId = MFPSEC
Recipient=1234#abcd
No user xy with address MFPSEC,abcd found -> from-address unchanged.
```

Example 3:

```
ServiceSecureId = ""
Recipient=1234#abcd
```

Map-file is used to check for user with any address type with value "abcd" (as with previous versions)

7.7 Obsolete Registry Values

The following registry values are obsolete.

```
HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCLINKMFP\TCMIME\
```

Registry Key	Description
EnableEmbeddedMIME	This registry value was used to configure a product (Open Clients in TCOSS TCDC) that is no longer supported. If this value still exists, it must be set to 0.

8. Hints

8.1 Address Conversion Examples

Assuming the default configuration is used, the following addressing from the MFP leads to the specified KCS send orders:

Addressing from MFP	KCS Send Order (User -> Service,Number)
Using the MFP default user:	
TCRecipient	MFP profile -> TOPCALL,TCRecipient
Smtprcip@domain.com	MFP profile -> SMTP,Smtprcip@domain.com
1234567	MFP profile -> FAX,1234567
Specifying the user or Secureid of a user:	
TCRecipient#TCID	TCUser -> TOPCALL,TCRecipient
Smtprcip@domain.com#TCID	TCUser -> SMTP,Smtprcip@domain.com
1234567#TCID	TCUser -> FAX,1234567
Using pseudo domains:	
TCRecipient@TOPCALL#TCUser	TCUser -> TOPCALL,TCRecipient
1234567@FAX	MFP profile -> FAX,1234567
Invalid address handling:	
InvalidTCRecip	MFP profile -> SMTP,InvalidTCRecip@mfp-domain.com
InvalidTCRecip#TCUser	TCUser -> SMTP,InvalidTCRecip@mfp-domain.com
(+43)-1-86353_1234#TCUser	TCUser -> FAX,+431863531234
Invalid user handling (UseOrigMfp=1):	
TCRecipient#InvalidTCUser	MFP profile -> TOPCALL,TCRecipient
Smtprcip@domain.com# InvalidTCUser	MFP profile -> SMTP,Smtprcip@domain.com
1234567#InvalidTCUser	MFP profile -> FAX,1234567
Invalid user handling (UseOrigMfp=0):	A notification is sent to the MFP profile, who has an In event defined to print on the MFP
TCRecipient#InvalidTCUser	MFP profile -> TOPCALL,MFP profile
Smtprcip@domain.com# InvalidTCUser	MFP profile -> TOPCALL,MFP profile
1234567#InvalidTCUser	MFP profile -> TOPCALL,MFP profile

8.2 MFP Restrictions Regarding Addresses

Restrictions might apply regarding what the MFP accepts as email/i-fax addresses. Some MFPs only allow sending to addresses like "address@domain". In that case it is necessary to use pseudo domains like 123456@FAX or tcuser@TOPCALL.

8.3 Recommended Scan and Send Settings for Fax

Typically, the MFP lets you choose some settings of how to scan and to send the documents – the administrator can set default values, and the user can override these settings.

When using the KCS fax functionality, it is recommended to use the following settings:

- Format: TIFF, black and white

- Resolution: 200 dpi

Format TIFF and black and white do not require image conversion by the KCS Document Converter and leads to a higher performance. A resolution of 200 dpi is ideal for FAX sending, a lower resolution can lead to an unreadable image, a higher resolution does not provide a better quality as it is reduced again for faxing.

If the MFP device allows sending i-fax, it is recommended using this instead of email, as the settings are already optimized for faxing.

8.4 Adding MFP Devices

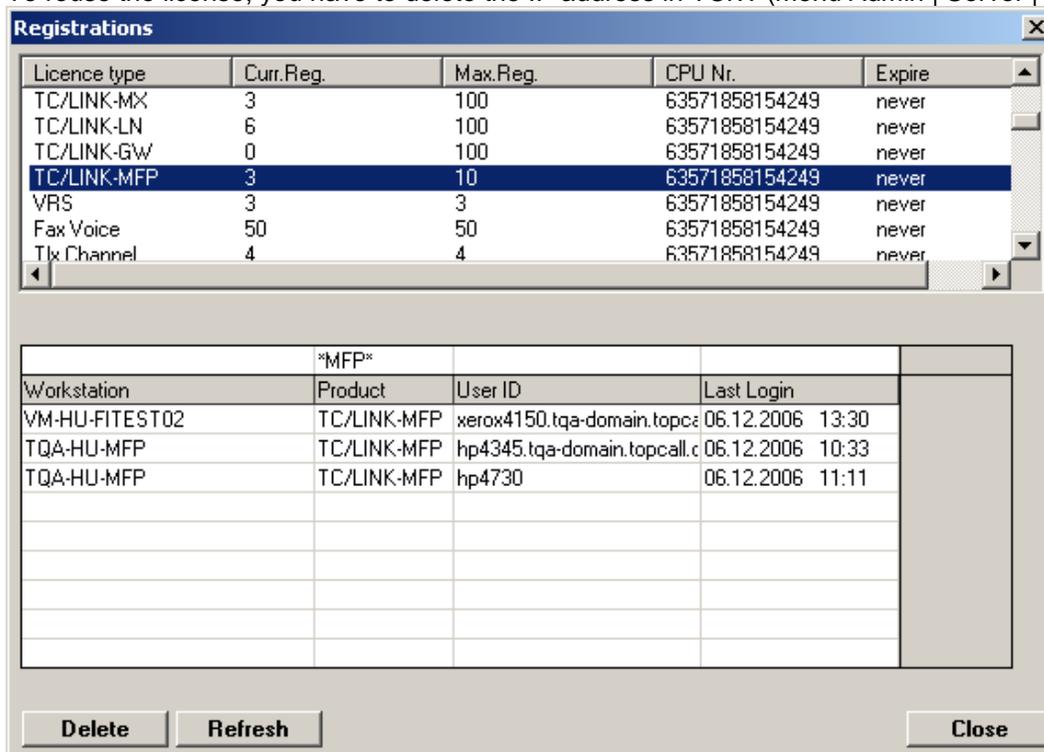
The following steps have to be done to add a MFP device:

- Check if there are enough TC/LINK-MFP licenses! Note: The licensing is based on the number of used MFPs; you can check the number of already used licenses in TCfW; there you can also remove the IP addresses if MFPs are no longer used or if the IP address has changed for some reason.
- Create a new MFP profile for the new device (see section KCS MFP Profile User)
- Configure the MFP device (see section MFP Configuration)

8.5 Removing MFP Devices

No special steps have to be done to remove an MFP. However, you might want to do the following:

- To reuse the license, you have to delete the IP address in TCfW (menu Admin | Server | Registration):



- Optionally, delete the MFP profile.

8.6 Changing MFP Devices

Changing the settings of MFPs:

- If the IP address of the MFP changes, you have to delete the licensing registration of the old IP (see the screenshot above).

- If the location of the MFP's printer driver changes, you have to update the TC/LANPRT settings of the MFP profile (see section *KCS MFP Profile User*).
- If the own email address setting of the device changes, you have to update the name and address of the MFP profile (see section *KCS MFP Profile User*).

8.7 Changing the FXI Number of MFP Devices

To change the number for incoming faxes of a MFP device, go to the MFP profile of the corresponding MFP profile user in TCfW and change the FXI number.

8.8 Sending Internal Faxes

TC/LINK-MFP can distinguish between an internal fax number (fax extension of a local KCS user profile) and an external fax number.

Thus, messages to internal fax numbers can be delivered directly to the KCS user, without using fax lines.

Configuration:

The fax extensions of the KCS users are stored as inactive addresses of a defined service, e.g. FXI.

Create a registry value *HKLM\Software\TOPCALL\TCLINKMFP\TCLSM\RecipientLookupService* (REG_SZ) for the TC/LINK-MFP instance, and write the service name (e.g. FXI) to this value.

Sending:

On the MFP device, specify the recipient address in one of the following formats:

- address@domain
- address
- address@domain#originator
- address#originator

TC/LINK-MFP now searches for a user with an inactive address matching the configured service and the address.

Example:

User1 has an inactive address with the service FXI and the number 1234.

```
TCLSM\RecipientLookupService = FXI
Recipient address = 1234
```

TC/LINK-MFP looks for a user with an inactive FXI address with the number 1234 and finds the user User1. The message is delivered directly to User1.

8.9 Resolving MFP Profiles

In order to find the MFP profiles on KCS the MFPs have to provide their host name and a unique originator ("From") address. Both things have to be configured on the MFP device and have to exist accordingly on KCS as MFP profile – these profiles can be created automatically – see also the section "KCS MFP Profile User".

The host name or IP address is used for reverse DNS lookup to get the fully qualified domain name (FQDN), depending on configuration – it is also possible to use the IP or host name as received (see configuration of the registry keys *ProfileResolveIp* and *ProfileResolveName*). The FQDN is used as MFP profile ID on KCS.

The originator address is used to create an SMTP address. The SMTP address is used to find the MFP profile and to distinguish between a profile and user that has logged on to an MFP. Additionally, it can be used to route messages back to the MFP.

TC/LINK-MFP receives the host-name typically via the SMTP “Received” header field. This assumes that the sending MFP device sends correct information to the SMTP gateway and that the receiving SMTP gateway creates a correct “Received” entry (e.g. “from mfp-device.company.com by mfp-link...”). If the MFP sends directly to the TC/LINK-MFP, the receiving SMTP gateway is TC/LINK-MFP. In this case the address received by “HELO” or “ELOH” is used to create the SMTP “Received” header line.

Notes:

- Xerox MFPs send wrong information with the “EHLO”. However they set an additional SMTP header (“X-Xerox-DeviceName:”) that is used to determine the host name.
- When using the KCS eCopy Connector the SMTP header “X-TcMfpDeviceId:” is used to hand over the host name of the MFP device.
- If no information is received via above mentioned SMTP header fields, the IP address of the incoming SMTP connection is used.

In order to always get the FQDN, an MFP IP address or host name has to be resolved using DNS services. This requires a correctly configured and available DNS service. You can check this by using the command line tool “nslookup” on the TC/LINK-MFP computer. The commands

```
nslookup mfp-host-name
nslookup mfp-ip-address
```

should provide the correct FQDN (without having to specify an DNS server as additional parameter).

With setting the registry keys

```
HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCLINKMFP\MFP\ProfileResolveIp
HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCLINKMFP\MFP\ProfileResolveName
```

you can deactivate resolving via DNS.

Attention: By changing these keys you may have to delete or change all existing MFP profiles, as the parameter for the ID is changed!

8.10 Changing the SMTP or Fax Service

If you want to use TC/LINK-MFP to send to another service instead of SMTP or fax, you must change the following registry keys:

```
HKLM\Software\TOPCALL\TCLINKMFP\MFP\ServiceSmtP
HKLM\Software\TOPCALL\TCLINKMFP\MFP\ServiceFax
```

For example, if you want to use the service TCFI instead of SMTP, configure:

```
HKLM\Software\TOPCALL\TCLINKMFP\MFP\ServiceSmtP = "TCFI"
```

Note that used services must have the same type as the originally intended service – the “ServiceSmtP” has to be of type “Free Format”, and the “ServiceFax” has to be of type “Fax” (you configure that in TCfW Admin/Services).

Additionally, you have to consider that the rules for the address type recognition also remain the same. The fax address has to be numerical; the SMTP address has to contain the “@” or the “DefaultMfpDomain” will be attached.

8.11 Sending to Additional KCS Services

It is also possible to send to additional KCS services by using the classic hash syntax:

```
SERVICE#NUMBER
```

In order to use that you have to deactivate (or change) the TC/LINK-MFP specific “#userid” syntax:

```
HKLM\Software\TOPCALL\TCLINKMFP\MFP\SepOriginator = ""
```

By setting “SepOriginator” to empty string no originator can be specified. But now you can specify any KCS service like “SERVICE#NUMBER”, e.g. a Notes address, directly on the MFP:

```
NOTES#John Smith/TC/Kofax
```

Instead of deactivating the “#userid” syntax you can also specify another separator, e.g. “%”:

```
HKLM\Software\TOPCALL\TCLINKMFP\MFP\SepOriginator = “%”
```

Now you can specify the originator:

```
address%userid
```

Note: The registry keys MFP/SepOriginator and TCLSM/Separator are both set to “#” by default. If the SERVICE#NUMBER syntax is used, this conflicts with the MAP file syntax and the recipient part is removed. Therefore, change any of the two registry keys as they may not be set to the same value.

Note: All configuration changes of TC/LINK-MFP require a restart.

9. Restrictions

9.1 VRS and Kofax Capture

It is not possible to install TC/LINK-MFP with VRS and Kofax Capture on the same computer.

9.2 VRS and Registry Setting “CompatibilityImageRes”

The registry key “HKLM\Software\TOPCALL\TCLINKMFP\General\CompatibilityImageRes” has to have the default value “0”. If this value is changed, VRS conversion is not called.

9.3 KCS MFP Profiles

The host name of the MFPs or the method to resolve their ID (registry keys ProfileResolveIp and ProfileResolveName) must not be changed. If this is changed the MFP profiles can no longer be found on KCS. New MFP profiles may be created automatically and additional licenses are consumed. You have to update the MFP profiles or to delete them and create them manually or automatically again.

MFP profile IDs may also change when some configuration is changed with the DNS services used on the TC/LINK-MFP computer (resolution works/does not work or resolves correct/not correct). This may also lead to creation of new MFP profiles and additional licenses consumed.

When using automatic creation of MFP profiles it has to be ensured that creation is always done with the “from” address of the MFP device (and not with a logged on user). Alternatively, you can change the SMTP address of the MFP profile manually (despite the restriction above). If users always have to log on to the device the SMTP address of the MFP profile will never be used.

The correct correlation of MFP devices to KCS MFP profiles can only work if for each device a unique ID (IP, host-name or FQDN) is received and never changed. For information how the correlation works, see the section Hints – Resolving MFP Profiles.

With the default configuration of the keys “ProfileResolveIp” and “ProfileResolveName” it is necessary that DNS services are available and configured correctly on the TC/LINK-MFP computer. If this is not the case, MFP profiles are created and searched for with unpredictable names. If the DNS services change to correct operation, the wrongly created MFP profiles have to be deleted or the names corrected.

9.4 VRS Profile for Multiple Recipients

TC/LINK tries to find a match between the recipients and the VRS use-cases defined in the use-case file. This search starts with the first active address of the first active recipient, and stops as soon as a match is found. This means that only the first found VRS profile is used for message processing, even if the message has more than one recipient.

9.5 Unicode Support

The email-address can contain only a restricted set of characters. Therefore the additional addressing parameters (@FAX, @SMTP, #User-Id) are not allowed to contain Unicode characters. This is a restriction of the SMTP protocol.

Allowed however are Unicode characters in the display name of the email address and in the registry keys defining the text of the non-delivery notification (registry TCLINKMPF\MFP\NotifUserNotFound<X>).

10. Performance

The following performance was measured on TC Model 301 hardware (1 GByte RAM, 2.8 GHz CPU) with TC/LINK-MFP (no other software running, default configuration):

10.1 Black-White Document

Document: 1 page black-white TIF-File (96 Kbyte), 200dpi, from MFP to fax number
Using the KCS Image I/O: 3100 messages per hour

10.2 Grey-Scale Document

Document: 1 page grey-scale PDF-File (205 Kbyte), 200dpi, from MFP to fax number
Using Virtual Rescan (VRS): 2000 messages per hour

10.3 Color Document

Document: 1 page color PDF-File (1016 Kbyte), 200dpi, from MFP to fax number
Using the KCS Document Converter: 328 messages per hour
Using Virtual Rescan (VRS): 500 messages per hour