

Kofax Communication Server

MFP Integration for Xerox Devices Administration Guide

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The KOFAX logo is displayed in a bold, blue, sans-serif font. The letters are thick and closely spaced, with a clean, modern appearance.

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Chapter 1

Preface

Multifunctional Peripherals (MFPs) are able to print, scan, fax and copy. Additionally, MFPs are able to send scanned documents to a network share or an email address.

MFP Integration enables the user to receive scanned documents via SMTP. The document, once routed to Kofax Communication Server, can be routed onto a wide range of destinations.

This manual is intended to be used by Kofax technicians and MFP administrators at customer sites to get a general overview of installation and configuration tasks of MFP Integration. Chapters 1 through 2 give a general overview of MFP Integration. Chapters 3 through 7 describe the most important task for installation, administration and monitoring of MFP Integration. Chapter 8 shows examples of vendor specific MFP configuration and Chapter 9 describes some hints and troubleshooting topics.

Features

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

- Sending documents from an 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
- Anonymous sending, with notifications routed back to and printed on the MFP
- Anonymous sending with appended user ID and notifications routed to the mailbox of the user
- Printing of incoming faxes.

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 enables users to keep track of their messages via their 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/her mail system.

Related Documentation

To the following documents are referred for more detailed information:

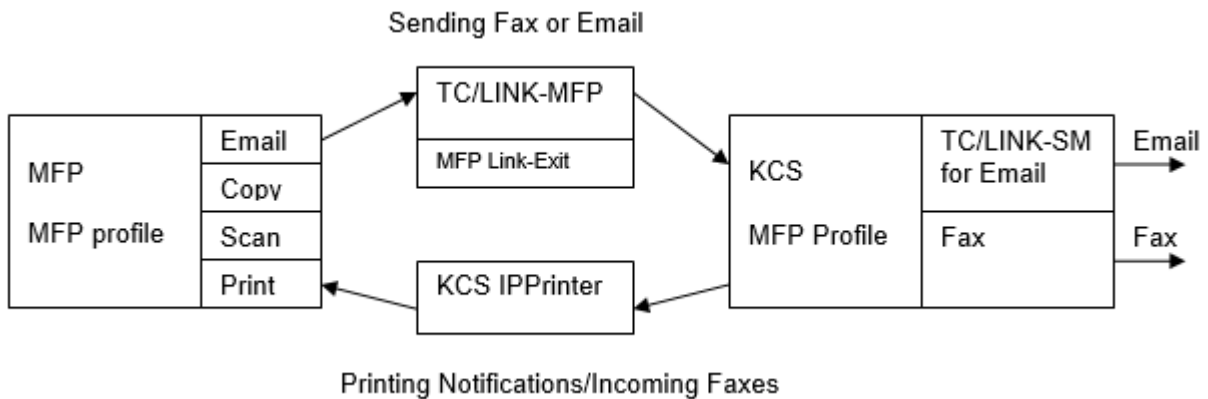
- TC/LINK-MFP – Technical Manual
- TC/LINK-SM – Technical Manual
- TC/LINK-FI – Technical Manual
- TC/LINK – Technical Manual
- TCfW – User Manual
- IP Printer Manual
- Connector for eCopy ShareScan OP – Manual
- Connector for eCopy ShareScan OP – User Guide

Chapter 2

Overview

This manual describes how to administer MFP Integration.

The following figure gives an overview of the interaction between the MFP Integration 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 returned via IP Printer to the MFP, where they are printed. With an internal number assigned to an MFP profile, it is also possible to route incoming faxes to and print them on the MFP.

Examples of 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 then sends the scanned document to TC/LINK-MFP.

The following types of addresses are possible:

- Fax
- Email
- KCS User-ID

The address type is recognized automatically.

Examples of addressing:

```
Fax: 1234567
Email: user@domain.com
```

```
KCS recipient: tcrecip
```

As no specific originator is used, the MFP itself will be 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 a specified originator:

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

“tcid” is the originator of the message, where this ID can either be the KCS User-ID or another configurable unique identification of the originator (see also [Secure User Identification](#)). Notifications and sending copies are sent to the mail system of “tcid”.

Supported MFPs

All devices capable of scanning, sending emails and printing can be used as described here.

The following settings have to be configured on each MFP:

- SMTP server (destination for the emails): IP address or host name of the TC/LINK-MFP computer.
- Email address of the MFP: Unique SMTP address of the MFP used to route messages back to the MFP.

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

- For fax sending without using VRS:
TIFF, black and white, 200dpi
- If using Virtual Rescan (VRS), it is recommended to scan documents with:
Gray scale or color; with black and white images VRS will not be effective.
- If using VRS for OCR, it is recommended to scan documents with:
Gray scale or color, 300dpi and to use TIFF as file format

Additionally, you may want to configure default values like preferred maximum message size, timeouts, log-in behavior and other parameters on the MFP.

List of Verified MFPs

The following Xerox MFP models have been integration-tested with MFP Integration and VRS:

Please note that only one representative of a complete MFP series has been tested!

- WorkCentre 4150 (Only b/w: VRS not recommended)
- WorkCentre Pro C2128/C2636/C3545
- WorkCentre 232/238/245/255
- WorkCentre M123/M128

Chapter 3

KCS Prerequisites

This section describes the KCS prerequisites.

TC/LINK-SM: Sending Outgoing Email

It is assumed that TC/LINK-SM is installed and therefore used for sending outgoing email messages. If TC/LINK-MFP should be used for sending outgoing mail it is necessary to change some configuration settings manually.

For more information, see *TC/LINK-MFP Technical Manual*, chapter “Using TC/LINK-MFP for Outgoing Email”.

TCfW

TCfW Communication Server Client is used for administration of MFP profiles on KCS.

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

Licenses

MFP Integration requires licenses for TC/LINK-MFP installed on the KCS server. An SSL license is also required if sending of encrypted messages between MFP and TC/LINK#MFP is desired.

The TC/LINK-MFP license is based on the number of used MFPs, where for each MFP a license is needed. Whenever an MFP sends a message to KCS, TC/LINK-MFP checks whether a license entry already exists for the host name or IP address of the sending MFP. If there is no license a new license is consumed, except if the maximum number of available licenses is exceeded.

Additionally, MFP Integration allows integration of HP and Xerox MFPs for sending fax messages via TC/LINK#FI. For this kind of integration, an appropriate license for TC/LINK-FM (TC/LINK File-Interface MFP) is required. For the KCS IP Printer also an appropriate license is required.

VRS

TC/LINK setup installs VRS Elite 5.1.

Chapter 4

Performance

The performance numbers in this section were determined on a Windows 2008 R2 VMWare system with 1 processor and 1GB RAM. They cover the processing time in TC/LINK.

Test message	VRS conversion	Messages per hour (using current VRS)
1 page gray-scale PDF attachment (828 KB, 200*200 dpi)	to TCI	6062
1 page colored TIFF attachment	to TIFF	5382
1 page color PDF attachment (902 KB, 200*200 dpi)	to TCI	5635
13 page black & white TIFF attachment (29,3 MB, 600*600 dpi)	to TCI	163

Chapter 5

Installation

KCS MFP Integration is a bundle of several KCS products. All are installed with Kofax Communication Server setup.

The KCS Server (TCOSS) and KCS IP Printer are part of the Server Applications group. TC/LINK-MFP and TC/LINK-FI are part of the Links group.

For more information, see the corresponding manuals of the KCS products.

KCS IP Printer

TC/LINK-MFP will automatically create the queue user IPPrint for the KCS IP Printer during startup if it does not already exist. The default password used for this user is “password”.

The queue user and password must match with TcUserId and TcPassword of the KCS IP Printer Configuration shown below to allow polling the printer queue on KCS.

field name	field value	description	type	default
MessageServerPath *	TCP/IP,10.18.100.133	Path to your TCOSS Server e.g. TCP/IP,MyServer	string	
TcUserId *	IPPrint	This TCOSS user ID defines the queue which is polled by the IP Printer	string	
TcPassword *	Password of user set above	string	

Fault-Tolerant Setup

KCS MFP Integration does not support fault-tolerant installations. This is because most MFP models do not support the configuration of a secondary SMTP server that can be used when sending to a primary SMTP server fails.

However, Network Load Balancing can be used. See the TC/LINK-SM Technical Manual for details, section “Installation” - “Multiple TC/LINK-SM installations” - “Windows NLB Cluster Installation – with TCSRVR NLB Support”.

For monitoring purposes we recommend to use a third party product. For more information see the integration manual for “MFP Integration Monitoring with IPCheck Server Monitor”.

Chapter 6

Administration

This section describes about MFP administration.

MFP Device Management

The MFPs have to be configured to send emails or i-faxes to TC/LINK-MFP.

Configuration can be done 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 or host name. The email address has to be set to the SMTP address used in the MFP profile, where the name of the MFP profile must either be the host name or IP address of the MFP device.

The MFP's email address becomes the originator of the messages that are sent anonymously (without specifying an originator). Sent documents can be found in the Outbox of the MFP profile on KCS. The email 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.

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: User ID or SMTP address of the KCS user representing the MFP (the "MFP profile").

Note It is recommended to choose an email address for the MFP which is similar to the hostname of the MFP to guarantee that replies work properly.

For example:

```
MFP hostname:      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, 200 dpi; that is optimized for sending FAX.
- If using Virtual Rescan (VRS), it is recommended to scan documents with gray 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 gray scale or color, 300 dpi and to use TIFF as file format.

Additionally, you might want to configure default values like preferred maximum message size, timeouts, log-in behavior and other parameters.

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.

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 [Configuration](#)). Although this happens during address mapping, it is done in a way similar to DirSync. 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\$, the first 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):

General settings:

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

User ID: MFPTEMPL Password: [XXXXXXXXXX]

Group: MFPTEMPL Retype password: [XXXXXXXXXX]

Location: [] Change own password

Representative: MFPTEMPL Password never expires
Password will never expire

Company: [] Change password at next login

Department: [] Lock account
Account is not locked

Full name: \$Name\$ Cost center: []

Salutation: []

Free Text: []

Default template: Built-in default template used! Dirsync allowed

User belongs to: MFPCconnect Reject all messages

VRS Profile: [] Logging of all send attempts

Language: English (01) Number locking

Visible in outbox

OK Save Cancel

Addresses:

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: \$Name\$ |

Node: |

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

Thus, a newly created MFP profile has a TOPCALL address matching the MFP host name and an SMTP address matching the email address configured on the MFP.

Events:

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: `duplex=1&transport=tcp&printer=2`

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

Used for: Sender service: **(All)** Delete Addr Save Addr

Recipient number: **(All)** Delivery type: **(All)** Move Up Move Down

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)

OK Save Cancel

It contains also events which forward notifications and incoming messages to the MFP device (via the IP Printer). Note that the events for print delivery and non-delivery notifications are configured to print only the first page of the document.

Example of Resulting MFP Profile

General settings:

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

User ID: at011018.emea.kofax.com Password: [REDACTED]

Group: MFPTEMPL Retype password: [REDACTED]

Location: [REDACTED] Change own password

Representative: MFPTEMPL Password never expires
Password will never expire

Company: [REDACTED] Change password at next login

Department: [REDACTED] Lock account
Account is not locked

Full name: at011018.emea.kofax.com Cost center: [REDACTED]

Salutation: [REDACTED]

Free Text: [REDACTED]

Default template: TCLINK/DEFTEMP Dirsync allowed

User belongs to: MFPCconnect Reject all messages

VRS Profile: [REDACTED] Logging of all send attempts

Language: English (01) Number locking

Visible in outbox

OK Save Cancel

Addresses:

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: at011018.emea.kofax.com |

Node: |

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

| |

Events:

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: `transport=tcp&printer=at011018.emea.kofax.com`

Filter: **all**

Active
 Auto termination
 Registered

Archive entry: **Always**

Used for: Sender service: **(All)** Delete Addr Save Addr

Recipient number: **(All)** Delivery type: **(All)** Move Up Move Down

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

OK Save Cancel

License Check

TC/LINK-MFP consumes an MFP license for every MFP profile it creates. If there is no license left, 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/
```

Content and recipient of these messages are configurable. 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.

For more information, see *TC/LINK-MFP Technical Manual*.

Configuration

The string registry value

```
HKKEY_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.

Directory Synchronization (DirSync)

KCS MFP Integration allows MFP profiles to be imported from remote mail systems via TC/LINK Directory Synchronization (DirSync). Since MFP profiles are created with their hostname as User ID on the KCS server, this information has to be configured also on the remote mail system.

Note Due to the configurable periodic update of DirSync, configuration changes of MFP profiles done with TCfW may be overwritten. To make changes permanent, modify either the corresponding DirSync templates or the MFP data directly on the remote mail system.

For more information, see *TC/LINK Technical Manual* (Product Description - Directory Synchronization).

Configuration of MFP Profiles

The KCS part of the configuration has to be done with TCfW.

Manual Creation of an MFP Profile

On KCS an MFP Profile is technically a User Profile, which has to be created for each MFP. The configuration of the host name or IP address of the MFP has to match with the name of this KCS profile.

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

In TCfW, choose Admin\User profiles... from the menu. Here the KCS profiles can be administered. Choose New... to create a new MFP profile.

User Profile - mfpir2270.kofax.com (mfpir2270.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

User ID: mfpir2270.kofax.com | **Password:** [masked]

Group: [empty] | **Retype password:** [masked]

Location: [empty]

Representative: mfpir2270.kofax.com | Change own password

Company: KOFAX Austria | Password never expires
Password will never expire

Department: Development - 2. Stock | Change password at next login

Full name: mfpir2270.kofax.com | Lock account
Account is not locked

Salutation: [empty] | **Cost center:** [empty]

Free Text: Canon ir2270i

Default template: Built-in default template used! | Dirsync allowed

User belongs to: MFPCconnect | Reject all messages

VRS Profile: [empty] | Logging of all send attempts

Language: English (01) | Number locking

Visible in outbox

OK | Save | Cancel

Please keep in mind that KCS User-IDs shorter than eight characters are case-sensitive.

The MFP profile must have an active TOPCALL address with the same value as the User ID:

User Profile - mfpir2270.kofax.com (mfpir2270.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: mfpir2270.kofax.com | Delete Addr

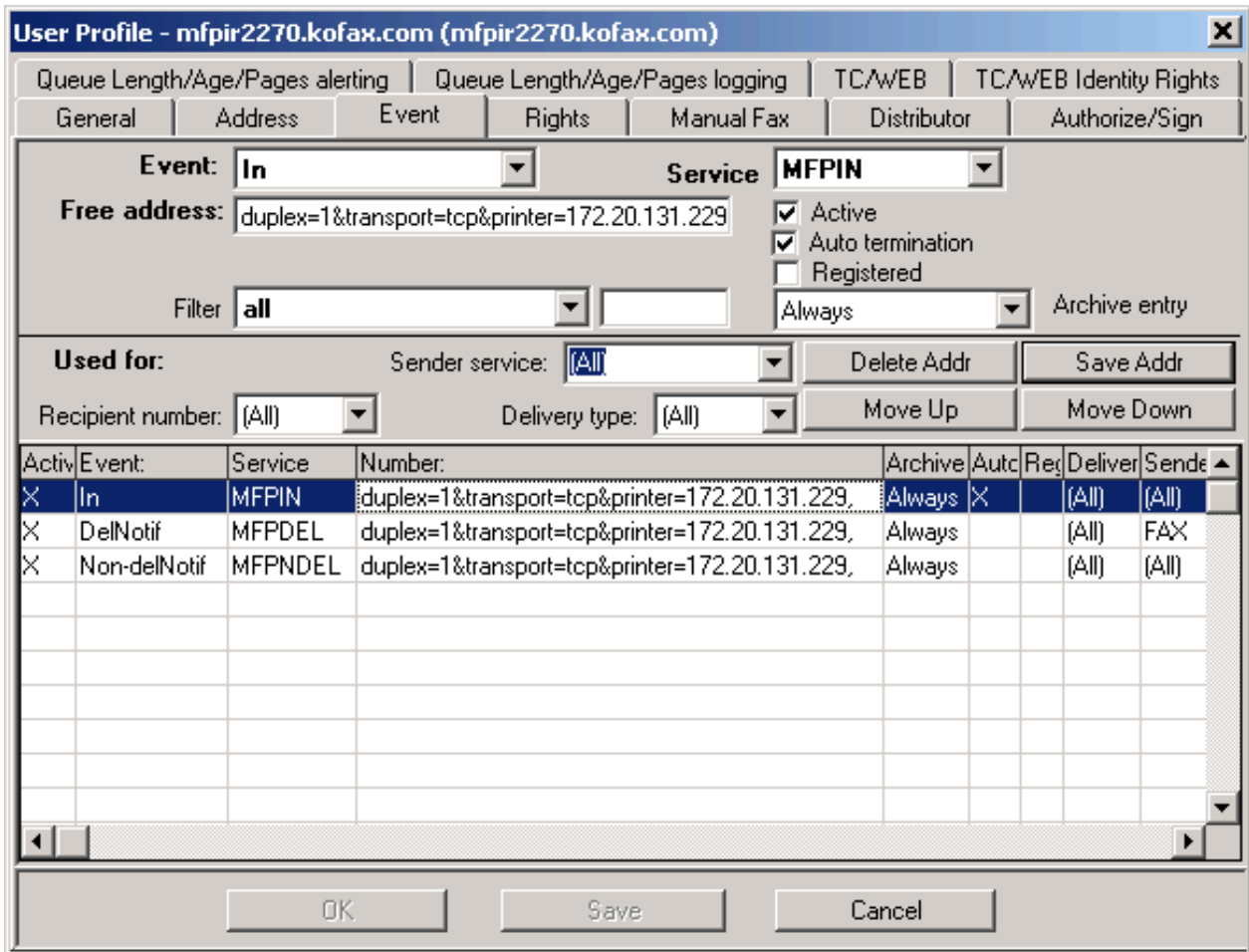
Node: | Save Addr

Active	No	Service	Number:
X	1	TOPCALL	mfpir2270.kofax.com,
	2	SMTP	mfpir2270@kofax.com,

OK | Save | Cancel

An FXI address is necessary if you want to route incoming faxes to the MFP. The SMTP address is typically needed to identify the MFP profile for incoming email messages. TC/LINK-MFP is able to find the correct originator using the TOPCALL address.

The following event entries are needed for printing incoming faxes and for sending notifications back via KCS IP Printer. The FREE address defines the MFP printer parameters.



- The In event is used for routing incoming faxes to the MFP. Moreover, it is also used if e.g. the document conversion fails or if the originator is not found on KCS and TC/LINK-MFP sends a delivery failure notification to the MFP. These messages are handled by KCS like normal messages and therefore, an In-event has to be processed.
- The DelNotif and Non-delNotif events are used for processing notifications returned from fax or SMTP. If you do not want to receive these notifications, you have to disable this in the registry – see section Recommended Additional Settings for TC/LINK-MFP.

Please note that the following three services are used for the events: MFPIN, MFPDEL and MFPNDEL. If these services do not exist, they are automatically created by TC/LINK-MFP at startup if enabled in the registry by setting HKLM\Software\TOPCALL\TCLINKMFP\Setup\CreateDependenciesTopcall = 1.

It is not necessary to specify any user rights for the KCS MFP users.

Removing MFP Devices

To remove an MFP, no special steps are necessary. However, you might want to do the following:

To reuse the license, delete the IP address in TcFw (menu Admin – Server – Registration):

The screenshot shows a window titled "Registrations" with two tables. The top table lists license types, current and maximum registrations, CPU numbers, and expiration dates. The bottom table lists workstation names, products, user IDs, and last login times.

Licence type	Curr.Reg.	Max.Reg.	CPU Nr.	Expire
TC/LINK-MX	0	0	0151376652	09.12.2007 11:00
TC/LINK-LN	0	0	0151376652	09.12.2007 11:00
TC/LINK-MFP	2	100	0151376652	never
VRS	0	100	0151376652	never
TCPDF2TIFMFP	0	0	0151376652	09.12.2007 11:00
TC/LINK-MX7	1	500	0151376652	never
Fax Channel	4	100	0151376652	never

Workstation	Product	User ID	Last Login
VM-MS-LINK	TCfW	TCVMAIL	24.06.2009 14:33
AT01L018	TCfW	ms	06.07.2009 18:41
VM-MS-LINK	TC/LINK-MFP	at01l018.emea.kofax.com	24.06.2009 17:58
VM-MS-LINK	TC/LINK-MFP	vmmslink	12.06.2009 11:33
VM-MS-LINK2	TC/LINK-MX7	ms@fsdom.local	15.06.2009 19:57
10.20.255.221	TC/LINK-wM	TCLINK	24.06.2009 14:33
MS-LINK-2008	TC/LINK-FI	TCLINK	26.06.2009 19:27
MS-LINK	TC/LINK-FI	TCLINK	09.06.2009 15:14
VM-MS-LINK	TC/LINK-FI	TCLINK	06.07.2009 15:21

Optionally, delete the MFP profile.

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 event entries of the MFP profile.
- If the own email address setting of the device changes, you have to update the SMTP address in the MFP profile.

Changing the FXI Number of MFP Devices

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

Resolving 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 will 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 above restriction). 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 on how the correlation works, see [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.

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.

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 values 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 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.

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

VRS Profiles

VRS profiles are stored on the KCS Server as messages in the message folder of the MFP template user MFPTEMPL. By convention, these messages start with the string VRS. The subject of the messages describes for which MFP model(s) the profile is optimized.

Example installation with various VRS profiles:

User ID	Message Name	Subject	Create...	File Size	Messa...
MFPTEMPL	VRSCA3170	Canon 3170C	04.10....	00000...	01518...
MFPTEMPL	VRSCANON	CANON general	04.10....	00000...	01518...
MFPTEMPL	VRSGENERAL	Generic MFP	04.10....	00000...	01518...
MFPTEMPL	VRSHHP	HP general	04.10....	00000...	01518...
MFPTEMPL	VRSHHP4345	HP 4345	04.10....	00000...	01518...
MFPTEMPL	VRSHHP4730	HP 4730	04.10....	00000...	01518...
MFPTEMPL	VRSHHP9050	HP 9050	04.10....	00000...	01518...
MFPTEMPL	VRSHHP9500	HP 9500	04.10....	00000...	01518...
MFPTEMPL	VRSKMC250	Konica Minolta Bizhub C250	04.10....	00000...	01518...
MFPTEMPL	VRSKONICA	Konica Minolta general	04.10....	00000...	01518...
MFPTEMPL	VRSLXMARK	Lexmark general	04.10....	00000...	01518...
MFPTEMPL	VRSLX422	Lexmark X422	04.10....	00000...	01518...

The VRS profile effectively used by a certain MFP is defined in its MFP profile on the KCS server.

Therefore TCfW provides the ability to configure this setting as shown in the following screenshot:

The field “VRS Profile” may contain a string made up of a folder name and a file name separated by a slash. The folder name has to be name of the MFP template user, which is MFPTEMPL by default. The file name is the message name of the VRS profile, e.g., MFPTEMPL/VRSGENERAL.

The system does not check whether this VRS profile really exists.

Backup of VRS Profiles

TCfW allows to back up user profiles (Menu Admin – Server – Backup/Restore). However, this backup does not include the messages in the Message Folder, which means that the VRS profiles are not included if you back up the MFPTEMPL user profile.

Therefore, we recommend to use TC/Backup for general backup purpose, which is available from the KCS Technical Knowledge Base.

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
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.
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.

Notes/restrictions regarding secure user identification:

- 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 in 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 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 can therefore not be regarded as secure.

IP Printer Default Covers

During start-up TC/LINK-MFP checks whether the following default covers for KCS IP Printer already exist on KCS:

- MFPIN.RTF – default cover for incoming messages
- MFPDEL.RTF – default cover for delivery notifications
- MFPNDEL.RTF – default cover for non-delivery notifications

If not, TC/LINK-MFP automatically creates these covers.

Backup and Recovery

TCfW provides in the Admin – Server menu section a Backup / Restore functionality which allows to backup and to restore UserProfile (SET_ENTRY_US) and Addressbook (SET_ENTRY_RS) entries.

It is not possible to perform a selective backup, i.e., always all existing entries are backed up.

It is recommended to use the ASCII format for backup, because this allows manual editing of the backup data at a later time. The user entries are stored in the user backup file USER.ASC and the address book entries are stored in the address book backup file ADDRESS.ASC.

Each MFP profile has an entry in the address book backup file and a corresponding entry in the user backup file. All MFP profiles are identified by the "User belongs to" field set to

“MFPCoconnect” (INT_OWNERTYPE = 25) in the address book entry. So if only the MFP profiles should be backed up, all other entries have to be removed manually from the backup files.

Example of corresponding entries for MFP profile mfp123.kofax.com:

Entry in ADDRESS.ASC:

```
set_entry_rs (
  cl_textstring/ts_section = "+TCTECH",
  cl_textstring/ts_rec_id = "mfp123.kofax.com",
  cl_integer/int_owertype = 25,
  [lots of other entries]
)
```

Entry in USER.ASC:

```
set_entry_us (
  [lots of other entries]
  cl_textstring/ts_user_id = "mfp123.kofax.com"
  [lots of other entries]
)
```

For more information, see the KCS Administrator's Manual.

Chapter 7

Monitoring

This section describes various KCS monitoring applications.

TC/Monitor

TC/Monitor is a lightweight maintenance application for the KCS system. It displays the status of services and some additional module dependent information of a KCS system.

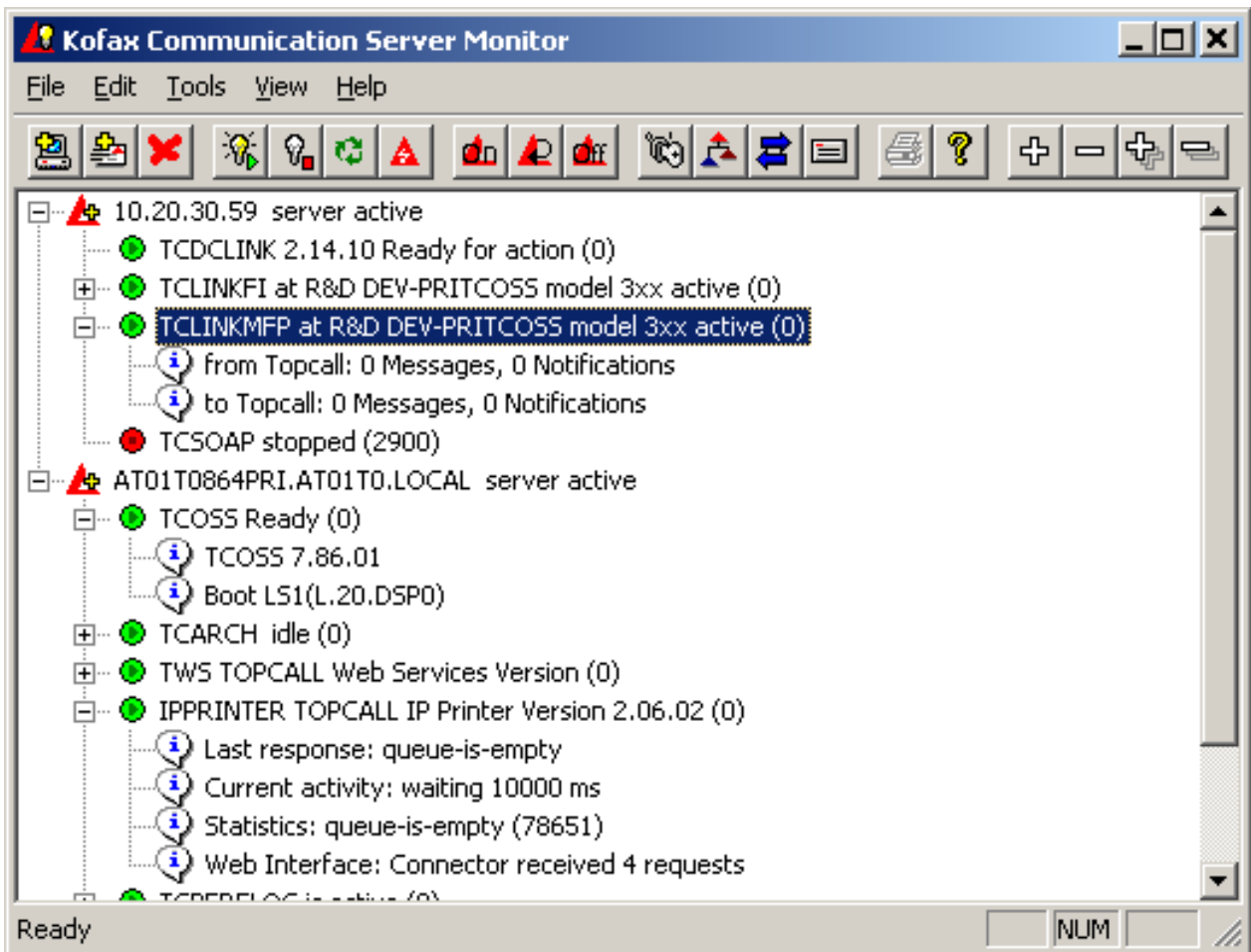
Additionally it allows starting and stopping the supervisor service of a KCS server, to start and stop every single process of a KCS server and even to restart an entire PC.

The following servers and processes are of particular importance for MFP Integration:

- TCOSS server
- TC/LINK-MFP process
- IP Printer process.

There are several ways how to start or stop a server or process:

- Right-click the server/process and select the proper action from the context menu.
- Select the server/process and use the proper button from the toolbar.
- Select the server/process and choose the proper action via the Tools menu.



(See the *KCS Monitor User Manual* for complete information on this application.)

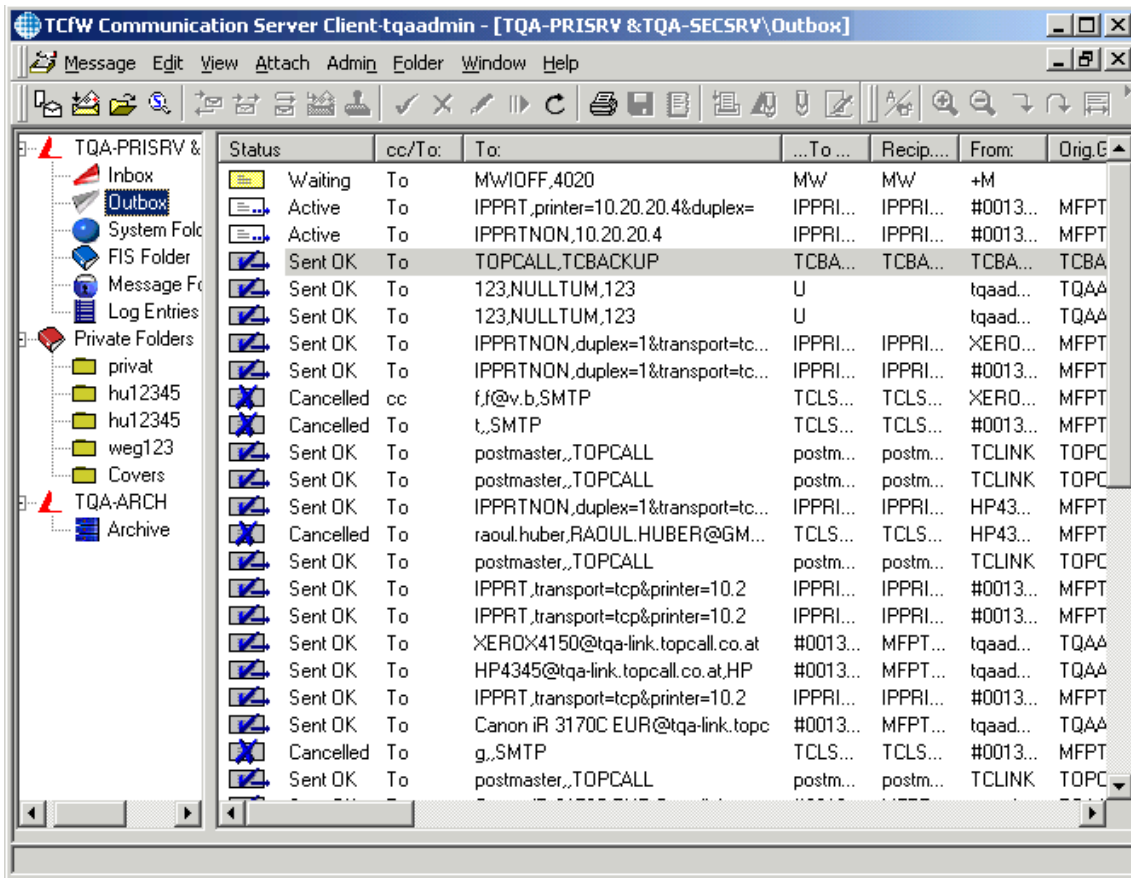
TCfW Communication Server Client

This section describes monitoring features in TCfW.

Monitoring Message States

TCfW can be used for monitoring because it allows you to check whether your messages were successfully sent or not.

TCfW allows you to see the status of all your outgoing messages in the Outbox. You can search for messages with a specific status (e.g., Inactive – Problems) by setting a filter. Correct, cancel or reactivate the message if necessary by clicking the corresponding icon in the toolbar or selecting the corresponding command in the Message menu.



Monitoring Licenses

TCfW can also be used to display the active licenses required for MFP Integration. From the menu select Admin – Server – Registration to display a list of all registered KCS products.

The following licenses are required for MFP Integration:

- TC/LINK-MFP license (for TC/LINK-MFP) or ...
- TC/LINK-FM license (for MFP integration via TC/LINK-FI)

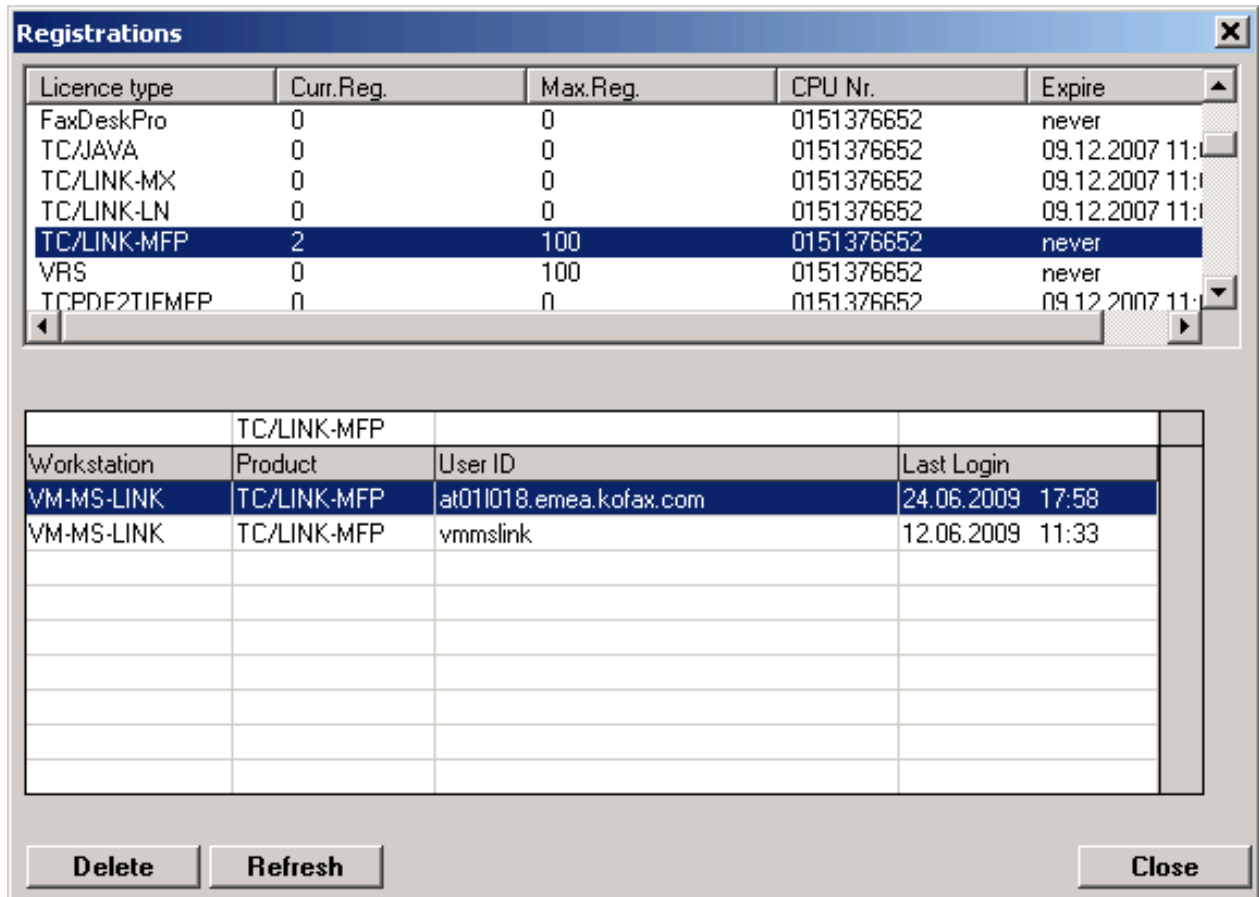
The Registrations window displays:

- Current registrations is use
- Maximum number of registrations (depends on the license)
- Expiration date
- Workstation ID
- Product
- IP address or domain address
- Date and time of last login

You can look into the registration list and remove workstations manually by clicking the Delete button. This is only necessary if the number of registered workstations exceeds the number of purchased licenses.

Note that you can filter as usually to display only the specified licenses.

The following screenshot shows in the upper list that 2 of 100 TC/LINK#MFP licenses are in use. In the lower list the MFP devices consuming the licenses are shown, and the User ID column shows either the IP address or the host name of the MFP.

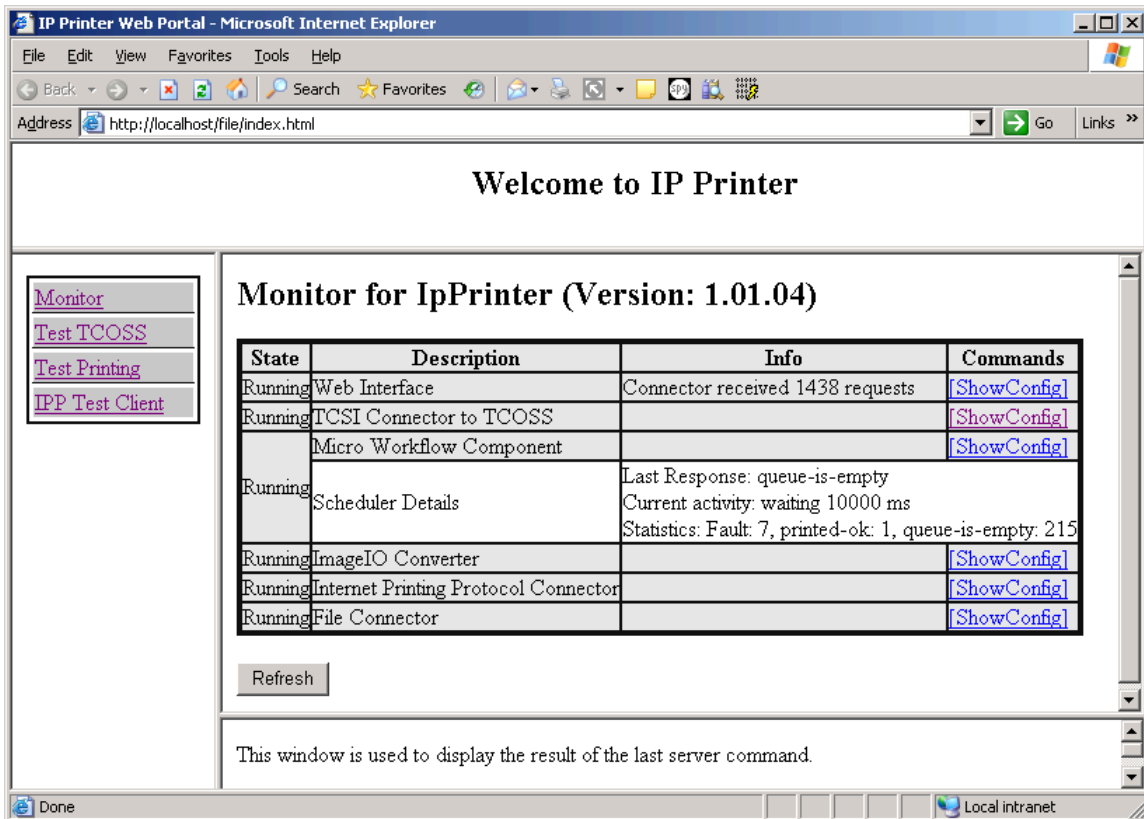


(See the *TCfW User Manual* for complete information on this application.)

KCS IP Printer

Make sure that the administrative web server of the IP Printer application is active.

Start your favorite web browser and connect to e.g. <http://localhost/file/index.html> to get this start page:



The links in the left frame – “Monitor”, “Test TCOSS”, “Test Printing”, and “IPP Test Client” – display one of four sub-pages in the right frame. “Monitor” is selected by default.

The “Monitor” view shown above should display all six components as “Running”.

The “Last Response” in the “Scheduler Details” displays one of these three results of the last attempt to print a message:

- “printed-ok” – everything ok.
- “queue-is-empty” – indicates that the IP Printer is idle because there are no messages in its queue.
- “Fault” – indicates that the IP Printer cannot log in to TCOSS because of a wrong path, user ID or password in its configuration, a missing license in TCOSS or because the TCOSS server is down.

For more information on troubleshooting, see the *KCS IP Printer Manual*.

Chapter 8

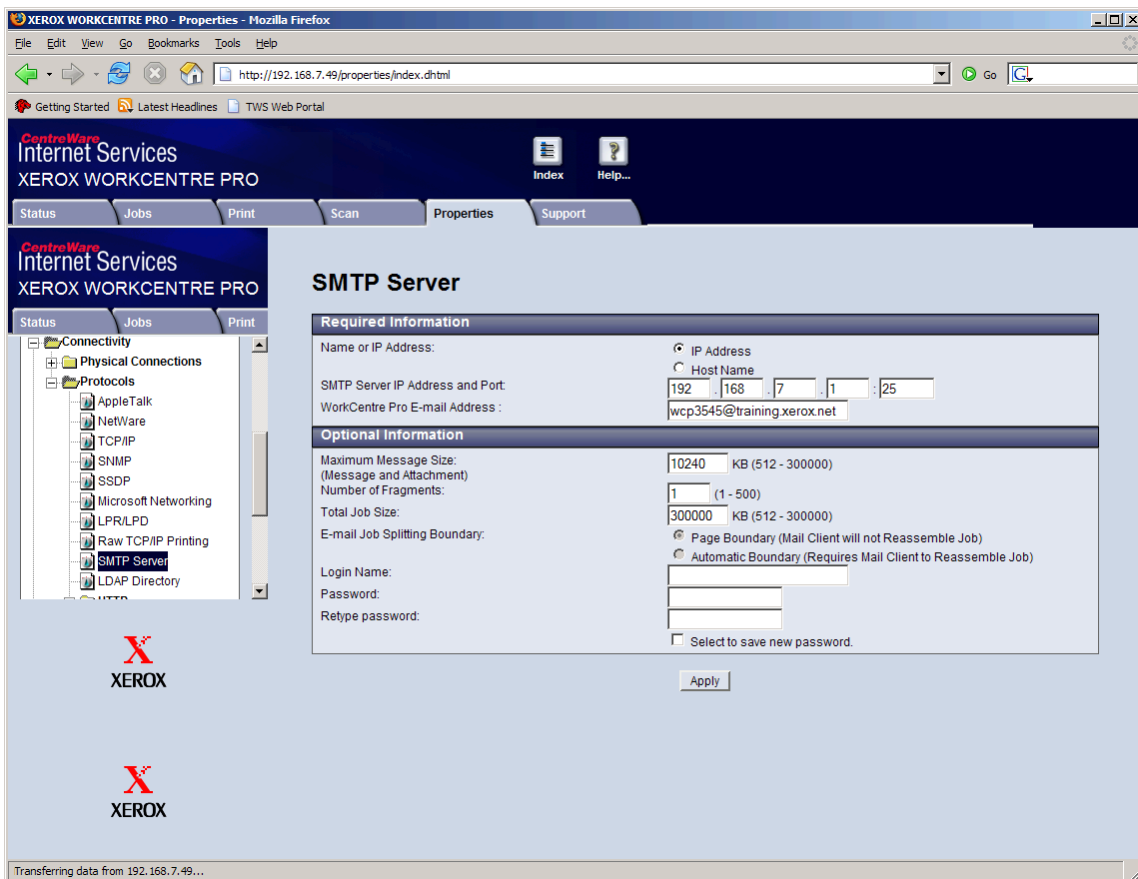
MFP Integration for Xerox

This section describes integration for Xerox MFP.

Integration via Mail (SMTP)

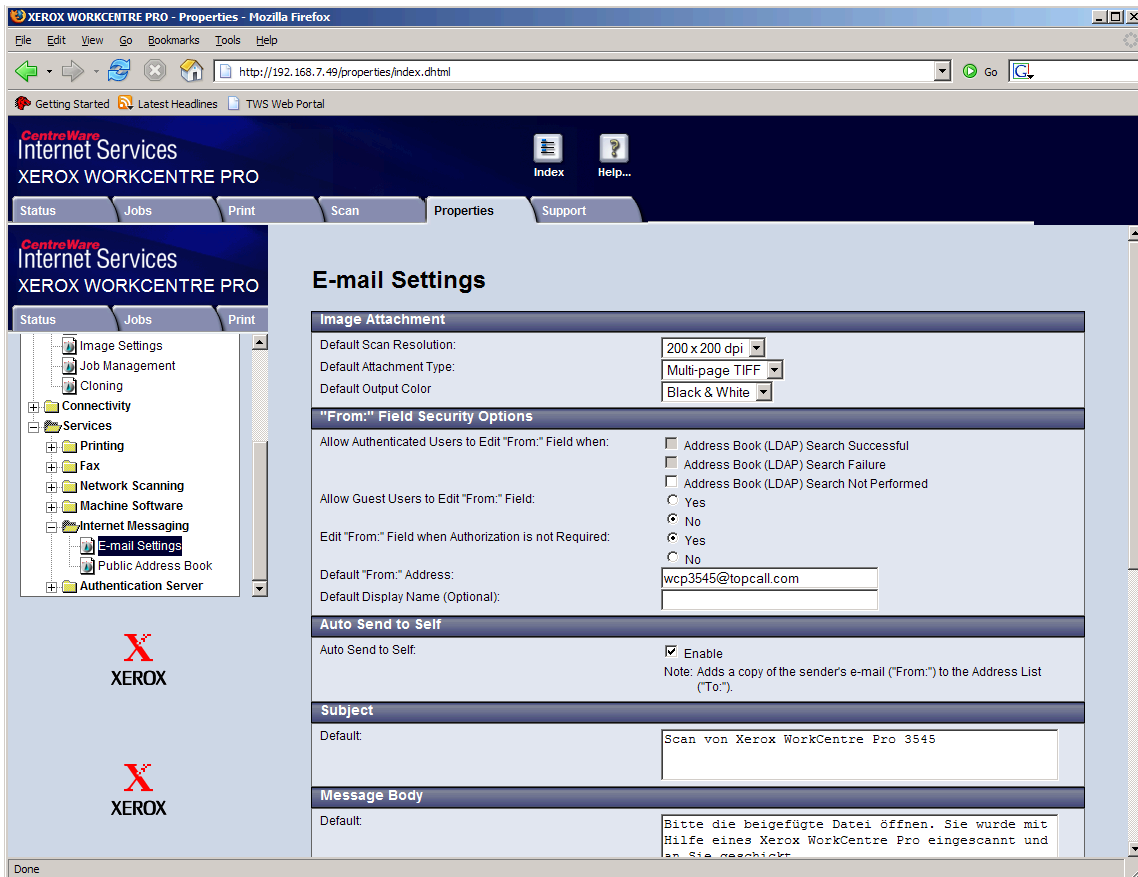
The following screenshots show the administrative interface of a Xerox WorkCentre Pro C3545.

By choosing Properties – Connectivity – Protocols – SMTP Server, the following screen appears:



SMTP Server IP Address and Port has to be set to the IP address of TC/LINK-MFP and port 25. The WorkCentre Pro E-Mail Address has to be set to the SMTP address used in the MFP profile.

By choosing Properties – Services – Internet Messaging – E-mail Settings, the following screen appears:



Here you can predefine text for subject and message body of the messages to be sent.

On the WorkCentre Pro C3545 (similar to WorkCentre M128 and Workcentre Pro 255) it is necessary for the user to enter a full email address. In that case it is possible to address to the pseudo-domains “@FAX” or “@TOPCALL” when sending to KCS, e.g.:

```
123456@FAX
userid@TOPCALL
```

Thus, it is possible to send to a KCS fax address or to a KCS user when a full email address is required by the device.

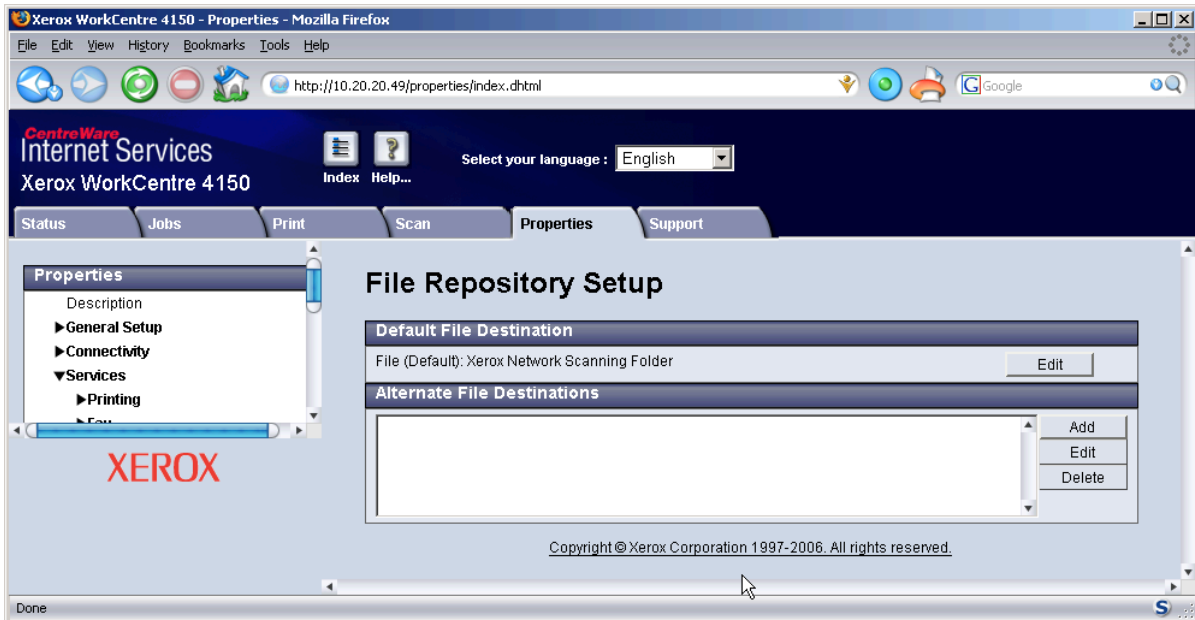
Integration via Network Scanning for FAX

The following screenshots show the administrative interface of a Xerox WorkCentre 4150.

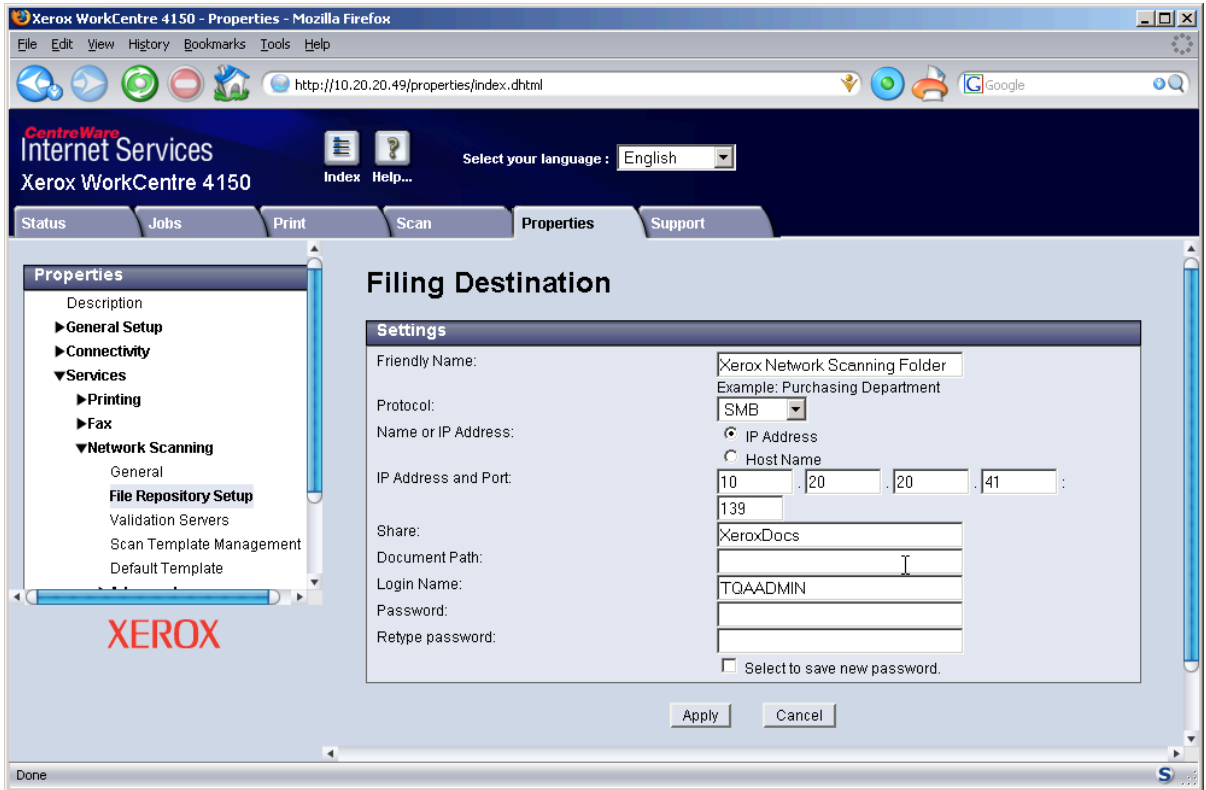
In addition to the email integration, KCS MFP Integration also supports sending fax messages via Network Scanning from Xerox MFPs with TC/LINK-FI. Therefore, the provided file repository must be configured as input directory for TC/LINK-FI.

For more information see *TC/LINK-FI – Technical Manual – Chapter: Xerox XST Format Support*.

By choosing Properties – Services – Network Scanning – File Repository Setup the following screen appears:

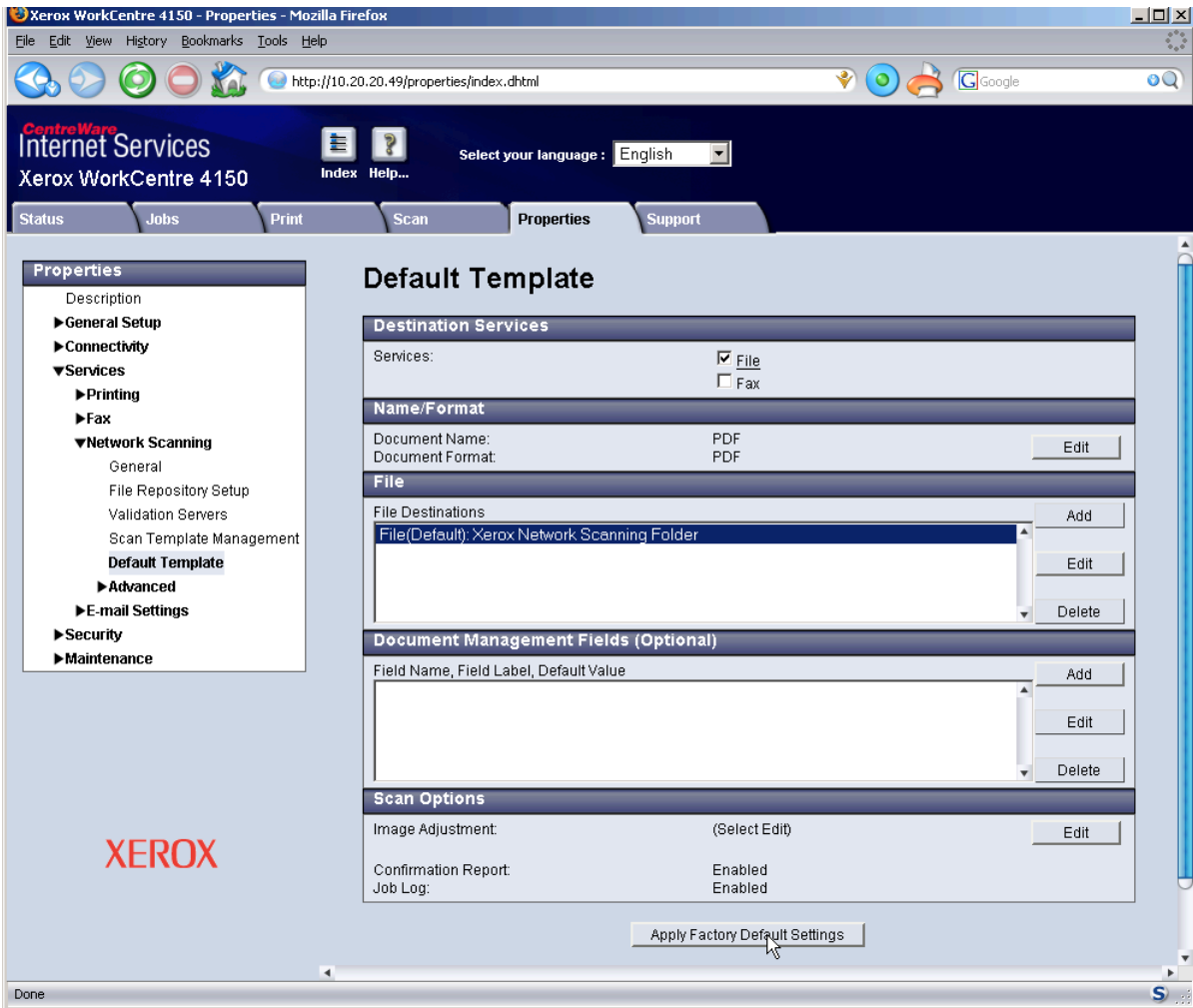


By pressing the Edit button for Default File Destination you can configure in the following screen how the Xerox MFP should store the scanned documents in a file repository.

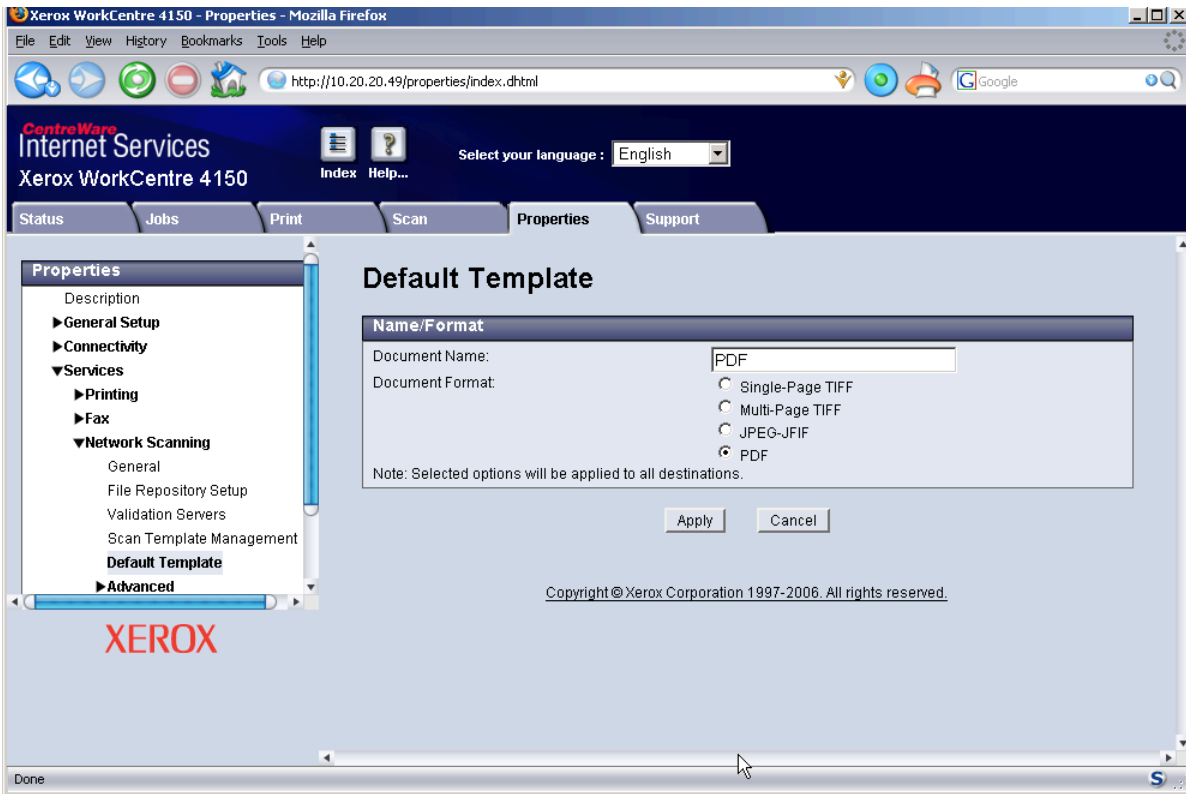


It is recommended to choose SMB from the Protocol selection list. Next you have to specify the IP address or host name of the computer and the used Share name where to store the scanned documents. With Login Name and Password you specify how the MFP authorizes itself on the computer providing the share.

By choosing Default Template from the Network Scanning menu entry you can define in the following screen the file format used for all scanned documents:



Select File in the Services section. By pressing the Edit button in the Name/Format section, the following screen enables you to specify the used file format in detail:



For each scan a separate folder is created in the specified share directory. These folders are polled by TC/LINK-FI and appropriate messages on the KCS server are created.

To send a document from the MFP via Network Scanning, press the FAX button, enter the destination number and press the Start button.

Chapter 9

Hints and Troubleshooting

This section describes various hints and troubleshooting.

Upgrading Existing Installations

This section describes upgrading existing installations.

Unique Identification of MFP Profiles

To be distinguishable from other profiles, the “User belongs to” field of MFP profiles must be set to “MFPCConnect” on the KCS server. For individual profiles this can be done with TCfW Communication Server Client. To change this setting for a large number of MFP profiles at once, use the TCUserTool (part of Kofax Communication Server).

Examples:

```
TCUserTool login:myserver;myid;mypassword filter:ts_group;MFP* set:int_ownertype;25
```

Starting TCUserTool with this command line will set the “User belongs to” field to 25 (=“MFPCConnect”) for all users that belong to a group starting with MFP.

```
TCUserTool login:myserver;myid;mypassword filter:ts_user_id;MFP* set:int_ownertype;25
```

Starting TCUserTool with this command line will set the “User belongs to” field to 25 (=“MFPCConnect”) for all users that have a user ID starting with MFP.

Learn more about TCUserTool from the *TC/UserTool Technical Manual*.

Send Internal Fax to MFP without Fax Lines

TC/LINK-MFP can now distinguish between an internal fax number (i.e. 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 the fax line.

Configuration: The fax extensions of KCS users are stored as inactive addresses of a defined service, e.g. FXI. Create a registry value TCLSM\RecipientLookupService (REG_SZ) for the TC/LINK-MFP instance, and add 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 then 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 User1. The message is delivered directly to User1.

Recommended Scan and Send Settings for Fax

Typically the MFP lets you choose some settings of how to scan and 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 result in 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 will be reduced again for faxing.

If the MFP device allows sending I-Fax, it is recommended to use this instead of email, as the settings is already optimized for faxing.

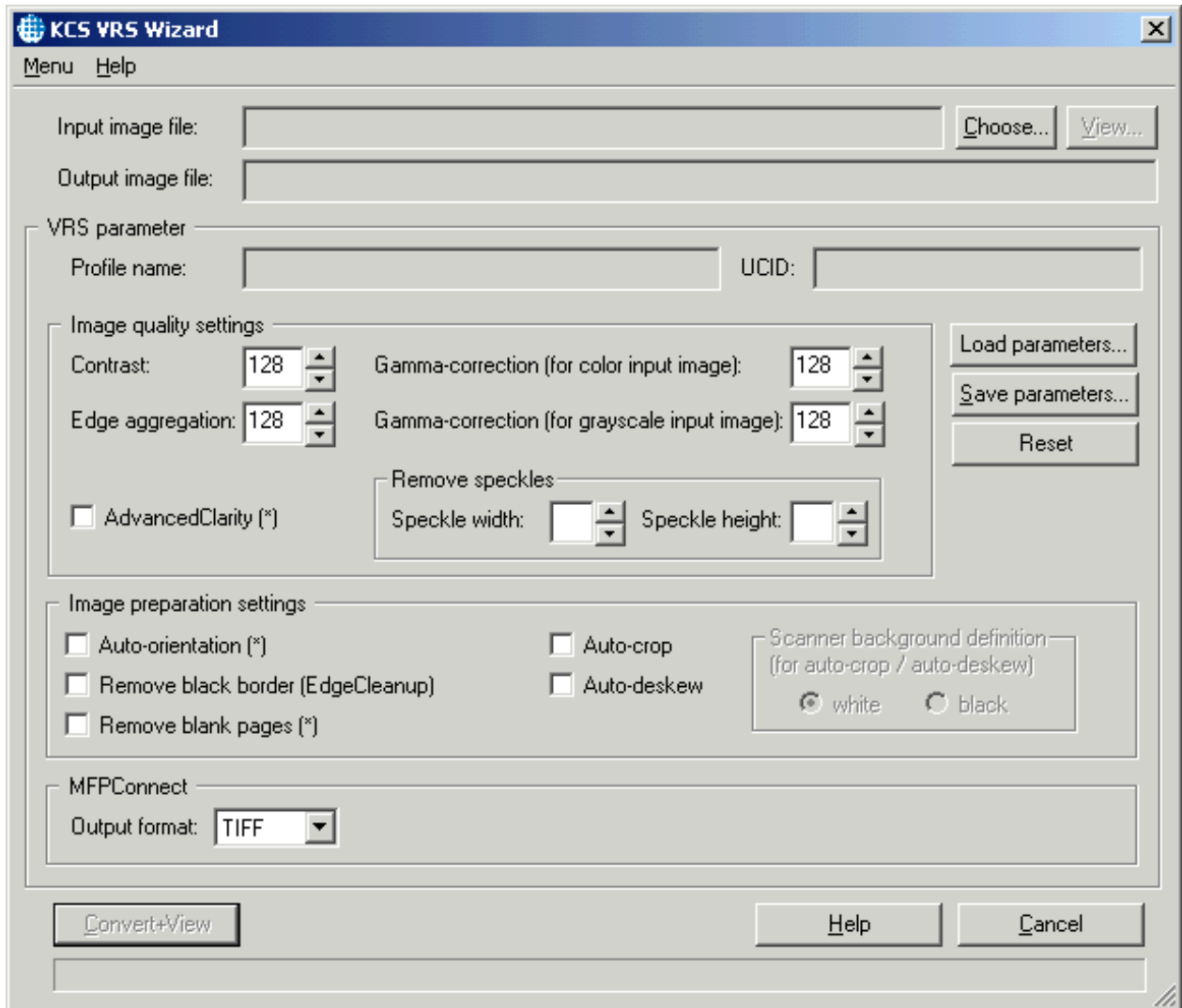
Chapter 10

VRS Wizard

This section describes about the KCS VRS Wizard utility.

Introduction to KCS VRS Wizard

The KCS VRS Wizard utility is a supplement to MFP Integration product. It is a simple configuration and test tool that assists you to maintain the MFP Integration 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.



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 MFP Integration 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.

Refer to the topic **VRS configuration overview** to understand the MFP Integration VRS configuration model.

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.

Process of VRS Parameter Tuning

Step 1: Get an unprocessed (raw) test image from the MFP.

For this purpose, send a test document to KCS via MFP Integration. Save the corresponding image file to the hard disk with TCfW.

Step 2: Use VRS Wizard to create VRS processed images from the raw image of step 1, experimenting with different VRS parameters in order to achieve the best image quality.

See also: Using VRS Wizard for Parameter Tuning

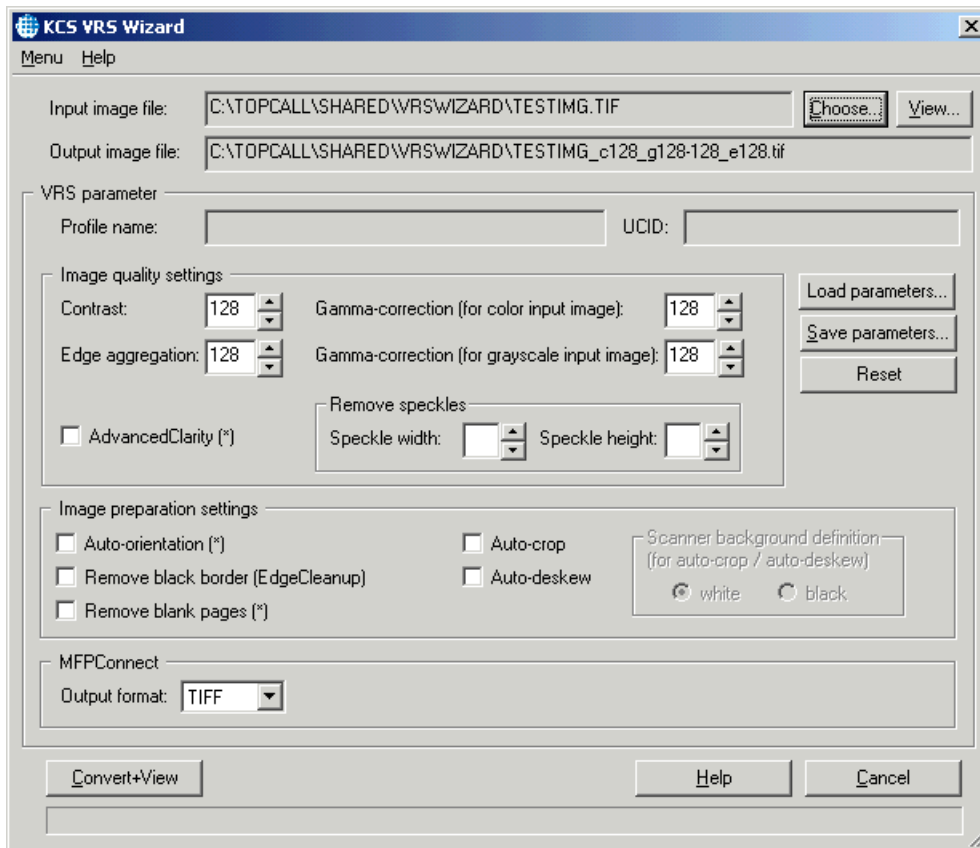
Step 3: Decide which VRS parameter set is optimal.

Examine the images processed by VRS and select your preferred quality output image or, in other words, your optimal VRS parameters.

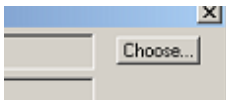
Step 4: Save the optimal VRS parameters to the VRS profile of the MFP on KCS.

See also: Store VRS Parameters for a UCID

Using VRS Wizard for Parameter Tuning



Step 1: Choose the input image file. (Click the Choose... button in the top right-hand corner.)

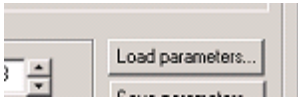


The input image must be an unprocessed (raw) test image from the MFP that you want to process with VRS.

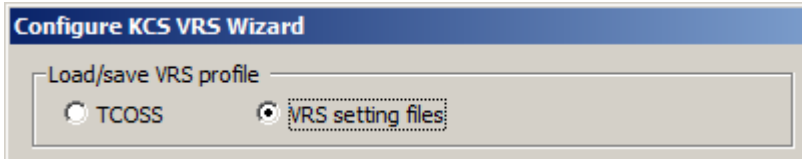
Step 2: Fill the edit fields Contrast, Gamma-correction, Edge aggregation, etc. with your test values or load these values from an existing VRS profile stored on KCS or in a VRS parameter file.

(At the program start, the main VRS parameter fields are initialized with the default values: Contrast = 128, Gamma-correction (for color input image) = 128, Gamma-correction (for grayscale input image) = 128, Edge aggregation = 128.)

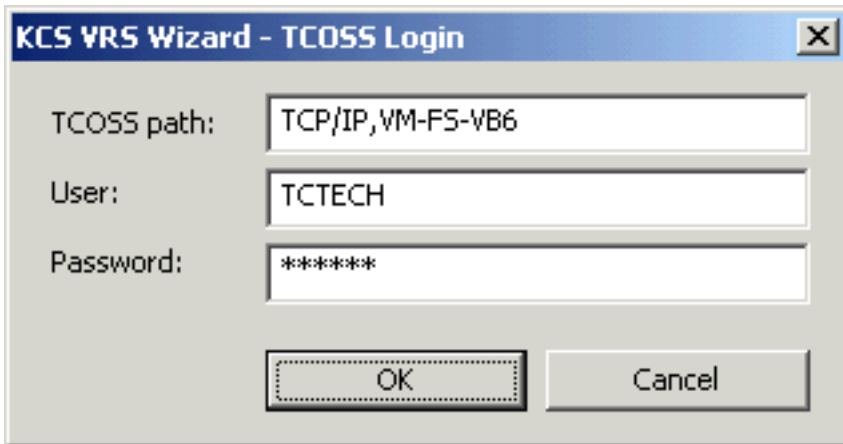
With the Load parameters... button you can import values from an existing VRS profile stored on KCS.



As an alternative, you can import these values from a VRS setting file. Use the radio-button group Load/Save VRS profile in the Configure VRS Wizard window to switch between these two modes.

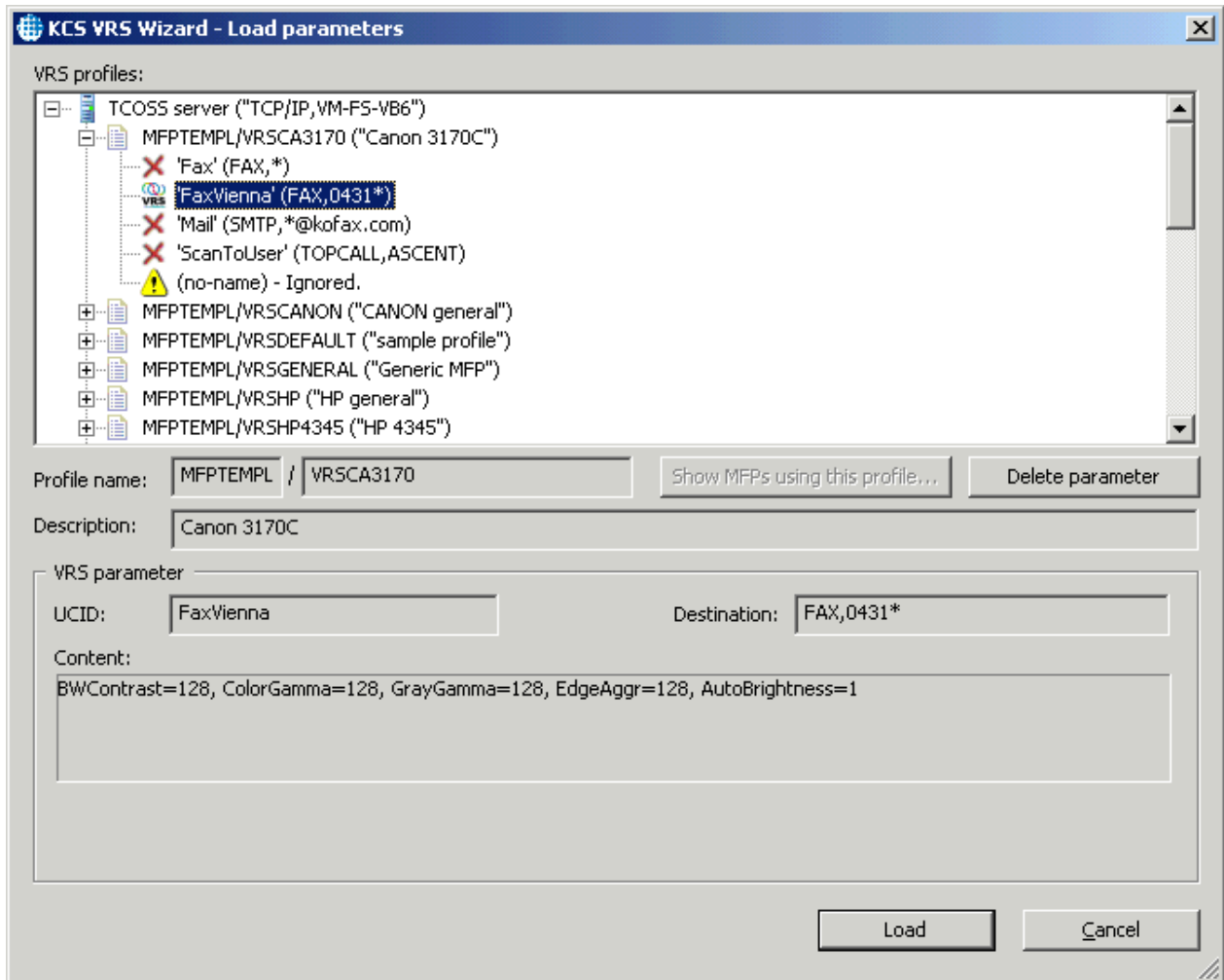


If Load/save VRS profile is set to TCOSS, a KCS login dialog box will appear:

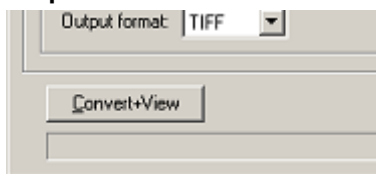


After a successful login, you can browse the VRS profiles stored on the KCS server. (For example “MFPTEMPL/VRSCA3170” is a VRS profile in the sample picture below.) Each VRS profile can contain one or more VRS parameter sets; each corresponding to the defined VRS use-cases.

Select a use-case in the tree-view that has a VRS-logo-icon and click Load.



Step 3: Click the Convert+View button (or Convert if there is no TIFF viewer defined).



VRS conversion will be performed on the input image file. The output file will be stored in the same directory as the input image file. The name syntax is:

[input file name]_c[BWContrast]_g[ColorGamma]-[GrayGamma]_e[EdgeAggr].tif

Additionally, if AdvancedClarity is used, an “_A” will be appended to the output image name. Furthermore, when using speckle width/height, then ds[ww][hh] will be appended.

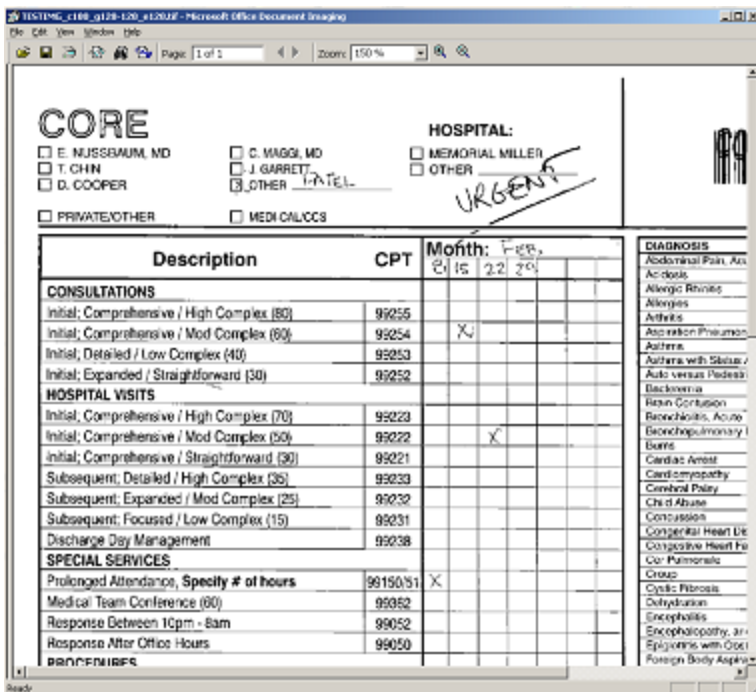
Example:

Name of input image: TESTIMG.tif

Name of output image: TESTIMG_c128_g128-128_e128.tif

Or, with AdvancedClarity and Despeckle (width=5 / height=5):
 Name of output image: TESTIMG_c128_g128-128_e128_A_ds0505.tif

If defined (which is the default), the image viewer will be opened automatically, displaying the processed image.

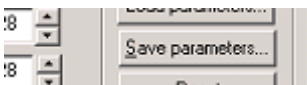


For defining / switching off the TIFF image viewer, select 'Configure VRS Wizard...' from the menu. See also: [Setting the Image Viewer](#)

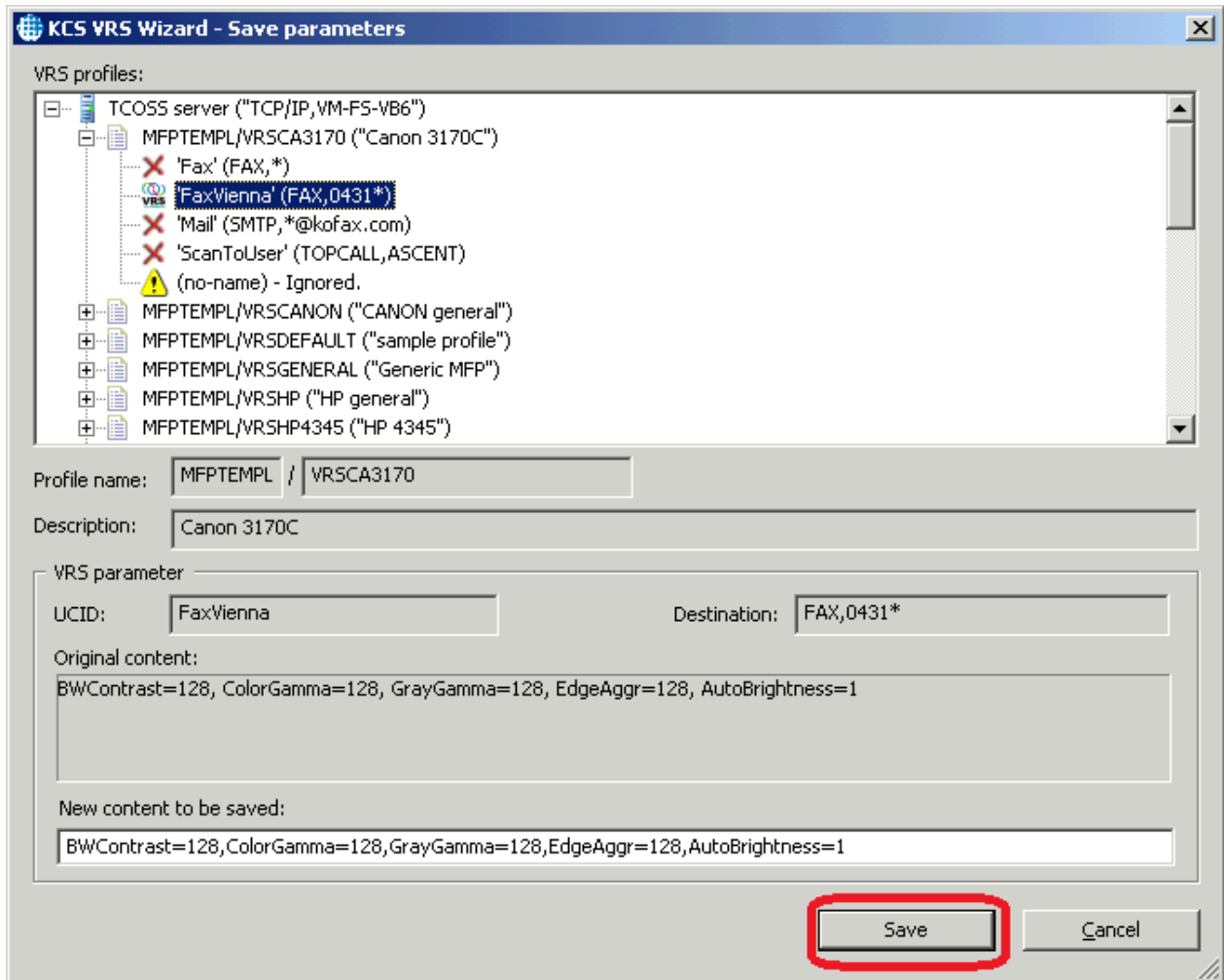
Step 4: Repeat Step 3 with various Contrast/Gamma/Edge aggregation test values.

Step 5: Examine the output images. Choose the best output image quality.

Step 6: Save the corresponding VRS parameters to the VRS profile with the 'Save parameters...' button.



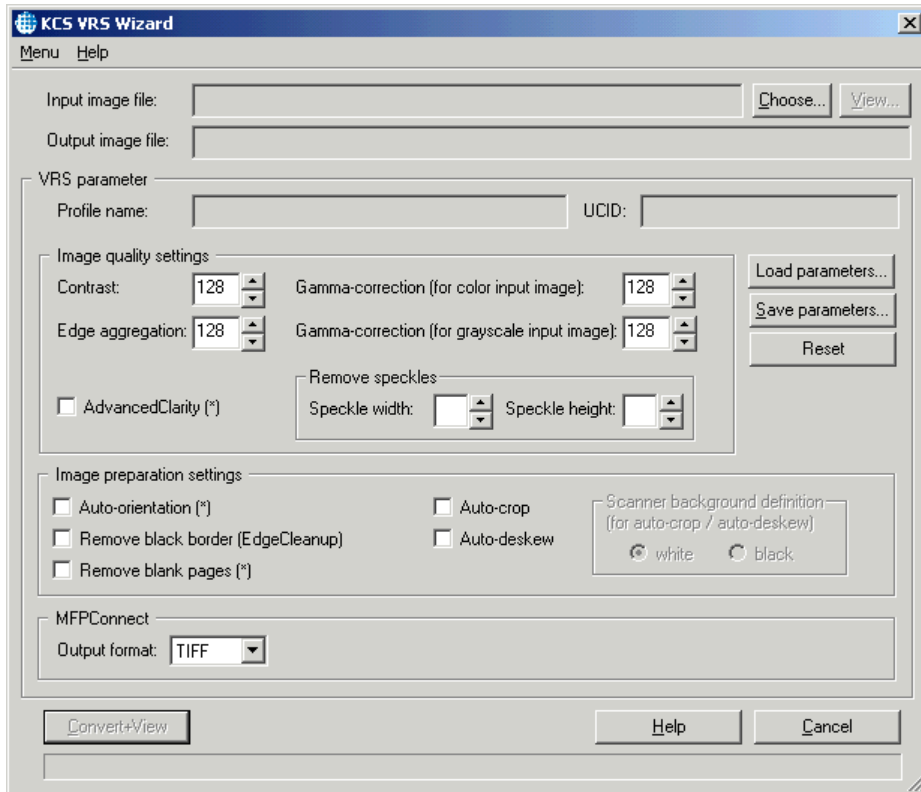
If Load/save VRS profile is set to TCOSS, the Save parameters window opens.



The last loaded profile and UCID will be automatically selected in the list. The field 'New content to be saved' will be filled according to the VRS settings of the main dialog.

Click **Save** to save the changes on TCOSS.

Supported VRS Parameters and Their Description



The following table matches the dialog box fields to the corresponding VRS parameter names:

Dialog box controls field	Corresponding VrsCmd5 library parameter
Contrast	BWContrast
Gamma-correction (for color input image)	ColorGamma
Gamma-correction (for grayscale input image)	GrayGamma
Edge aggregation	EdgeAggr
AdvancedClarity (*)	AdvancedClarity
Speckle width	DespeckleWidth (+DespeckleEnable)
Speckle height	DespeckleHeight (+DespeckleEnable)
Auto-orientation (*)	AutoOrientation
Remove black border (EdgeCleanup)	EdgeCleanup
Remove blank pages (*)	BlnkPgDeletion
Auto-Crop	AutoCrop
Auto-Deskew	AutoDeskew

Dialog box controls field	Corresponding VrsCmd5 library parameter
white / black (Scanner background definition)	BlackBG

Dialog box controls field	Corresponding MFP Integration specific VRS conversion parameter
Output format (TIFF or PDF)	TcOutputFormat

VRS Parameter Summary

Scanner (MFP) Specific Settings

Parameter name	Description	Range	Default
BWContrast	Contrast setting for the case VRS doing color / grayscale to b/w conversion (only ColorMode=3).	0, 255	128
ColorGamma	Gamma correction setting for the case VRS doing color to color or color to b/w conversion (only ColorMode=1 or 3).	0, 255	128
GrayGamma	Gamma correction setting for the case VRS doing grayscale to b/w conversion (only ColorMode = 3).	0, 255	128
EdgeAggr	Edge aggregation. Fine-tuning parameter for the edge detection algorithm.	0, 255	128
BlackBG	Defining color of the scanner's background for the AutoCrop / AutoDeskew feature.	0=white, 1=black	0=white

Note The optimal values for these settings are typically determined by a process of trial and error for each MFP model of interest. This even applies to BlackBG, which indicates the color of the scanner's background. In some cases, a scanner with a black background may work better with the white background deskew and cropping algorithms.

VRS Basic Feature Control

Parameter name	Description	Range	Default
EdgeCleanup	Replaces black pixels in the border around the image with white pixels.	0=off, 1=on	0=off
AutoCrop	Crops images to the actual size of the scanned document.	0=off, 1=on	0=off
AutoDeskew	Straightens skewed images.	0=off, 1=on	0=off
DespeckleEnable	VRS removes speckles from the image.	0=off, 1=on	0=off
DespeckleHeight	Height of the speckles to be removed (in pixels).	0-75	
DespeckleWidth	Width of the speckles to be removed (in pixels).	0-75	

VRS Professional Feature Control

Parameter name	Description	Range	Default
AutoOrientation	Rotates the image according to the orientation of the text in the image.	0=off, 1=on	0=off
AdvancedClarity	Suppresses dense pattern document backgrounds.	0=off, 1=on	0=off
BlinkPgDeletion	Removes blank pages.	0=off, 1=on	0=off
ColorDetect	Performs automatic color detection and produces output image accordingly.	0=off, 1=on	0=off
FillHoles	Fills punch holes on document edges with the surrounding page background.	0=off, 1=on	0=off
ColorMode	Specifies the color format of the output image	1=color 2=grayscale 3=black/white	3=b/w

Description of the Parameters

This section describes various MFP parameters.

Scanner (MFP) Specific Settings

BWContrast

Range: [0, 255]

Default: 128

Description: BWContrast is the amount of difference between the lightest and darkest areas on an image. For VRS, the BWContrast parameter affects how the content is enhanced. VRS sees content as anything that has an edge. When VRS detects an edge, it is enhanced based upon the setting in the BWContrast parameter. As the BWContrast value increases, the content does not need as much of an edge in order to be enhanced. Fainter content will become more visible. At the highest value, VRS may even enhance invisible tape or the grain of the document. As the BWContrast value decreases, the content needs more of an edge in order to be enhanced. Darker content will remain while faint content will begin to disappear. At the lowest value, only content like solid lines, barcodes, and logos will be visible.

Note This setting applies only when VRS is returning a black and white image and the input image is grayscale or color.

Note The optimal value for this setting is typically determined by a process of trial and error for each scanner model of interest.

ColorGamma

Range: [0, 255]

Default: 128

Description: When a scanner scans a document, it determines how to convert the light intensity of that document into pixels using a value called "gamma". The ColorGamma parameter is used in VRS to

compensate for scanners whose built-in gamma value leads to lower quality images. As the ColorGamma parameter is decreased to the lower end of the range, VRS applies significant contrast between the lightest and darkest areas of an image. As the ColorGamma parameter is increased to the upper end of the range, VRS applies minimal contrast between the lightest and darkest areas of an image.

Note This setting applies only when ColorMode=3 or ColorMode=1, and the input image is color.

Note The optimal value for this setting is typically determined by a process of trial and error for each scanner model of interest.

GrayGamma

Range: [0, 255]

Default: 128

Description: This is similar to ColorGamma, but for grayscale input images.

Note This setting applies only when ColorMode=3 and the input image is grayscale.

Note The optimal value for this setting is typically determined by a process of trial and error for each scanner model of interest.

EdgeAggr

Range: [0, 255]

Typical values: 88, 92, 128, 160, 163, 168, 192.

Default: 128

Description: This is a fine-tuning parameter for the edge detection algorithm discussed with BWContrast above.

Note The optimal value for this setting is typically determined by a process of trial and error for each scanner model of interest.

BlackBG

Range: 0=white, 1=black

Default: 0=white

Description: This tells VRS the color of the scanner's background and affects AutoCrop and AutoDeskew processing.

Note The optimal value for this setting is typically determined by a process of trial and error for each scanner model of interest. In some cases, a scanner with a black background may work better with the white background deskew and cropping algorithms.

VRS Basic Feature Control

EdgeCleanup

Range: 0=off, 1=on

Default: 0=off

Description: When EdgeCleanup=1, VRS replaces black pixels in the border around the image with white pixels, preserving the width and length of the image size determined by VRS Auto Crop.

Note This setting applies only when AutoDeskew=1 and AutoCrop=1 and VRS is returning a black and white image and VRS successfully deskewed and cropped the image.

AutoCrop

Range: 0=off, 1=on

Default: 0=off

Description: When AutoCrop=1, VRS automatically crops images to the actual size of the scanned document. For example, if you scan a postcard, the Auto Crop feature ensures that the image matches the actual document dimensions (rather than the paper size specified by the scanning application).

Note If BlackBG=1, indicating black background, the cropping dimensions are determined by using the contrast between the paper background and the scanner background. If BlackBG=0, indicating white background, the cropping dimensions are determined by the content of the image.

AutoDeskew

Range: 0=off, 1=on

Default: 0=off

Description: When AutoDeskew=1, VRS automatically straightens any images that are skewed when they scan.

Note If BlackBG=1, indicating black background, the deskew correction is determined by using the contrast between the paper background and the scanner background. If BlackBG=0, indicating white background, the deskew correction is calculated based on horizontal and vertical text lines in the image.

DespeckleEnable

Range: 0=off, 1=on

Default: 0=off

Description: When DespeckleEnable=1, VRS removes speckles from the image. Use the DespeckleHeight and DespeckleWidth settings to specify the size of the speckles to be removed.

Note This setting applies only when ColorMode=3 (black/white).

DespeckleHeight

Range: [0, 75]

Default: 0

Description: Use DespeckleHeight to specify the height in pixels of the speckles to be removed.

Note This setting applies only when ColorMode=3 (black/white) and DespeckleEnable=1.

DespeckleWidth

Range: [0, 75]

Default: 0

Description: Use DespeckleWidth to specify the width in pixels of the speckles to be removed.

Note This setting applies only when ColorMode=3 (black/white) and DespeckleEnable=1.

VRS Professional Feature Control:

AutoOrientation

Range: 0=off, 1=on

Default: 0=off

Description: When AutoOrientation=1, VRS automatically rotates the image 90, 180, or 270 degrees, based on the detected orientation of the text in the image.

Note This setting applies only when AutoDeskew=1.

AdvancedClarity

Range: 0=off, 1=on

Default: 0=off

Description: When AdvancedClarity=1, VRS applies advanced thresholding techniques for suppressing densely pattern document backgrounds. This settings applies only if VRS produces black/white output.

BlinkPgDeletion

Range: 0=off, 1=on

Default: 0=off

Description: When BlinkPgDeletion=1, VRS automatically removes any page that it can confidently determine to be blank. There is a content sensitivity setting to adjust and control the VRS interpretation of "blankness" but this content sensitivity setting is not supported by the VRScmd DLL at this time.

ColorDetect

Range: 0=off, 1=on

Default: 0=off

Description: When ColorDetect is 1, VRS performs automatic color detection of the input to automatically provide either color or black and white output. It creates a color image if color is detected, or a black and white image otherwise.

FillHoles

Range: 0=off, 1=on

Default: 0=off

Description: When FillHoles is 1, VRS fills punch holes on document edges with the surrounding page background.

ColorMode

Range: 1=color, 2=grayscale, 3=black/white

Default: 3=black/white

Description: This setting specifies the color format of the output image. If the input image is color and ColorDetect=1, VRS may return a color image even if ColorMode=3.

MFP Integration VRS Configuration Overview

Since MFP Integration 2.5 the VRS parameters (or the no-VRS mode) can be defined individually per destination and per MFP.

The following three configuration elements make up the whole VRS configuration on KCS:

1) **List of all destinations ("use cases")**, for which VRS conversion is intended.

This list is stored in the message body of a dedicated KCS message folder entry, in simple text format. This KCS message is named "VRSUCID" and it stays in the message folder of the "MFPTEMPL" user.

Format of one use case definition:

```
UCID: service, address
```

Example:

```
FaxVienna: FAX,00431*
```

Where UCID ("use-case ID") is just an arbitrary unique name of this destination and is used only in VRS profiles (see below) to reference this use-case.

Wildcard character (*) can be used in the address part as beginning or ending character.

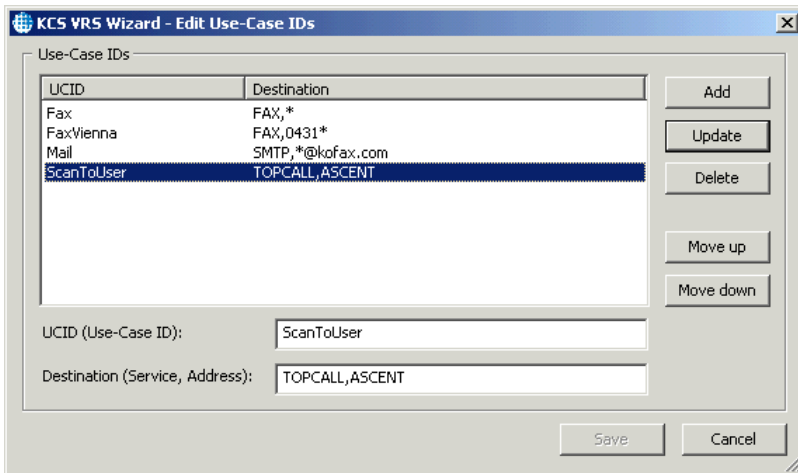
A complete UCID definition list can look like this:

```
ScanToUser: TOPCALL,ASCENT  
Mail: SMTP,*@dicomgroup.at  
FaxVienna: FAX,00431*  
Fax: FAX,*
```

VRS will be performed only for sendings where the recipient matches one of these destinations. Otherwise, the default is used: no VRS.

The order of the definition lines is important because the first match determines the respective use-case.

Use the menu "Use-Case IDs..." in KCS VRS Wizard to show / maintain these UCID definitions:



2) **VRS profile(s)**, each one containing the corresponding VRS parameters for the defined UCIDs.

For example:

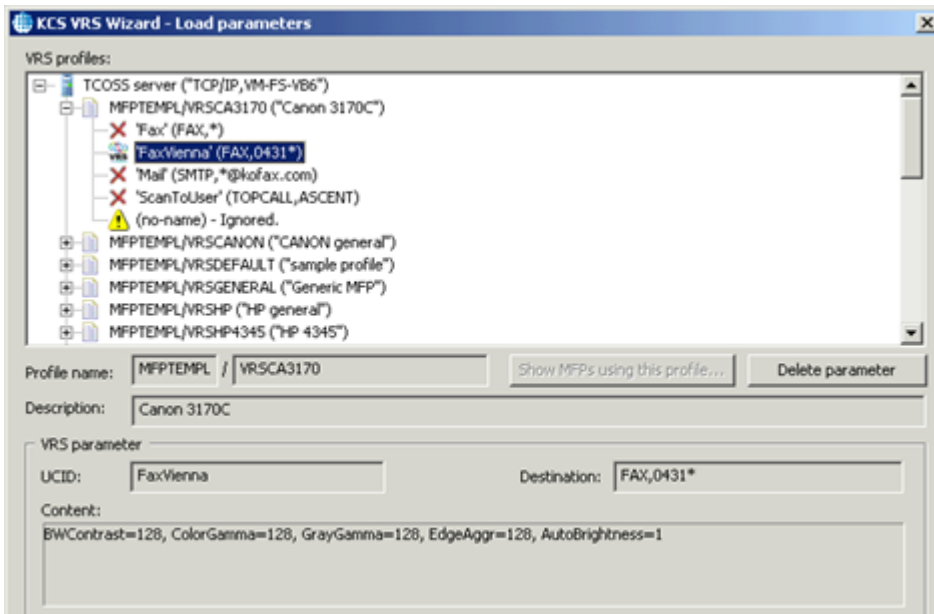
```
FaxVienna: AutoBrightness=1,BWContrast=175,ColorGamma=118,EdgeAggr=128
Fax: AutoBrightness=1,BWContrast=175,ColorGamma=118,EdgeAggr=128
```

Normally, all MFPs of the same type use the same VRS profile, but this is not mandatory. Each MFP can have its own individual VRS profile.

If some defined UCID is missing in a VRS profile, then for MFPs using this profile, VRS conversion is disabled for these destinations.

Each VRS profile is stored as a special KCS message in the message folder of the "MFPTEMPL" user. The name of this message is arbitrary, but it must begin with the "VRS" prefix.

Hint: Use the "Load..." and "Save..." buttons in KCS VRS Wizard to show / maintain the VRS profiles:



3) MFP shadow user => VRS profile assignment.

The “VRS profile” field in the MFP shadow user is used to assign a VRS profile to an MFP.

One MFP can have no or one VRS profile. If there is no VRS profile assigned to an MFP then VRS is disabled for this MFP.

More MFPs can share the same VRS profile: Just enter in each of these MFP shadow users the same VRS profile name in the “VRS profile” field.

Note The VRS profile name must be entered in the MFP shadow user “VRS profile” field with the KCS path definition, that is, with the “MFPTEMPL/” prefix. This is a detail, which is not hidden by the KCS VRS Wizard or TCfW user interface.

Tip Use the menu “MFP shadow users...” in KCS VRS Wizard to display / maintain the MFP shadow user => VRS profile assignment:

KCS VRS Wizard - MFP shadow users

Filter

MFP shadow user ID: *

VRS profile name: *

MFP shadow users found: (3)

MFP shadow user ID	Assigned VRS profile
FS_MFP10	MFPTEMPL/VRSH4345
FS_MFP11	MFPTEMPL/VRSH4345
MFPTEMPL	

Change assigned VRS profile

MFP shadow user ID: FS_MFP10

VRS profile name: MFPTEMPL/VRSH4345

Buttons: Search, More.., Save, Cancel

MFP Integration uses the following procedure to determine whether for a certain MFP and a certain recipient VRS conversion has to be performed and if yes, with which VRS parameters:

Step 1:

MFP Integration tries to find among the UCID definitions the first matching entry with the recipient address. If no matching UCID definition is found, no VRS will be performed.

(E.g., in the example above, the recipient FAX,0043186353 matches to the use-case “FaxVienna”, but also to “Fax”. However, “FaxVienna” will be found first, so the corresponding use-case is “FaxVienna”.)

Step 2:

Finding the KCS shadow user of the sending MFP.

If the sending MFP has no corresponding shadow user on KCS (User-ID: the fully qualified domain name of the MFP), then it cannot have corresponding VRS profile either, so no VRS will be performed.

Step 3:

Loading the assigned VRS profile from the MFP shadow user.

If no VRS profile is defined at the MFP shadow user, then no VRS will be performed.

Step 4:

Checking if the VRS profile has a VRS parameter definition for the use-case determined in step 1.

If no such definition is found, then no VRS will be performed.

Otherwise, this VRS parameter set will be taken and the VRS conversion will be performed.

(Unless the VRS feature is disabled in the TC/LINK-MFP registry.)

For example, to continue the example in step 1, to enable VRS the VRS profile must have a VRS parameter definition for FaxVienna, something like this:

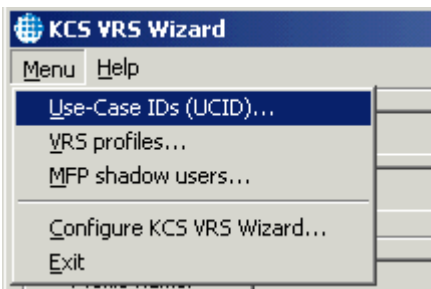
```
FaxVienna: AutoBrightness=1,BWContrast=175,ColorGamma=118,EdgeAggr=128
```

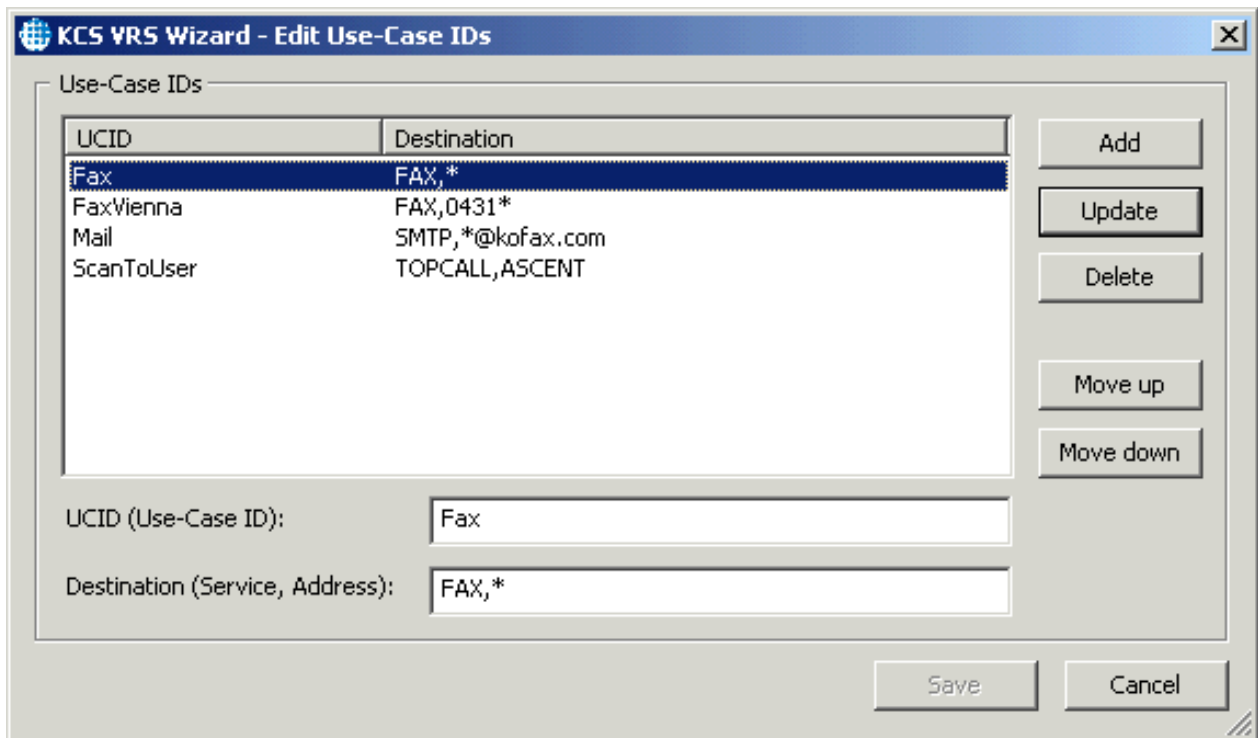
Note The reason is that in step 1 our use-case was already categorized as “FaxVienna” and not as “Fax”, and this will not be revised later.

The reason is that in step 1 our use-case was already categorized as “FaxVienna” and not as “Fax”, and this will not be revised later.

In the MFP Integration configuration semantic, a missing use-case definition in the VRS profile means that VRS is disabled for this use-case.

Maintain VRS Use Case IDs





Enter / change the values in the “UCID” and “Destination” edit fields below and do not forget to click “Add” or “Update” to apply the changes into the list. Buttons “Move up” and “Move down” can be used to change the order of the UCID definitions. The order of the entries is relevant. (For example, if use-case “Fax” would stay before “FaxVienna” in the list above, then “FaxVienna” would never match.)

The changes are not stored on KCS until you click Save.

For more information on VRS use-case IDs please refer to the topic VRS configuration overview.

Maintain VRS Profiles

KCS VRS Wizard offers all functionality to maintain the VRS profiles:

Display VRS profiles:

- Show all VRS profiles stored on KCS
- Show the content of a VRS profile

Manage VRS profiles:

- Create a new VRS profile
- Delete an existing VRS profile

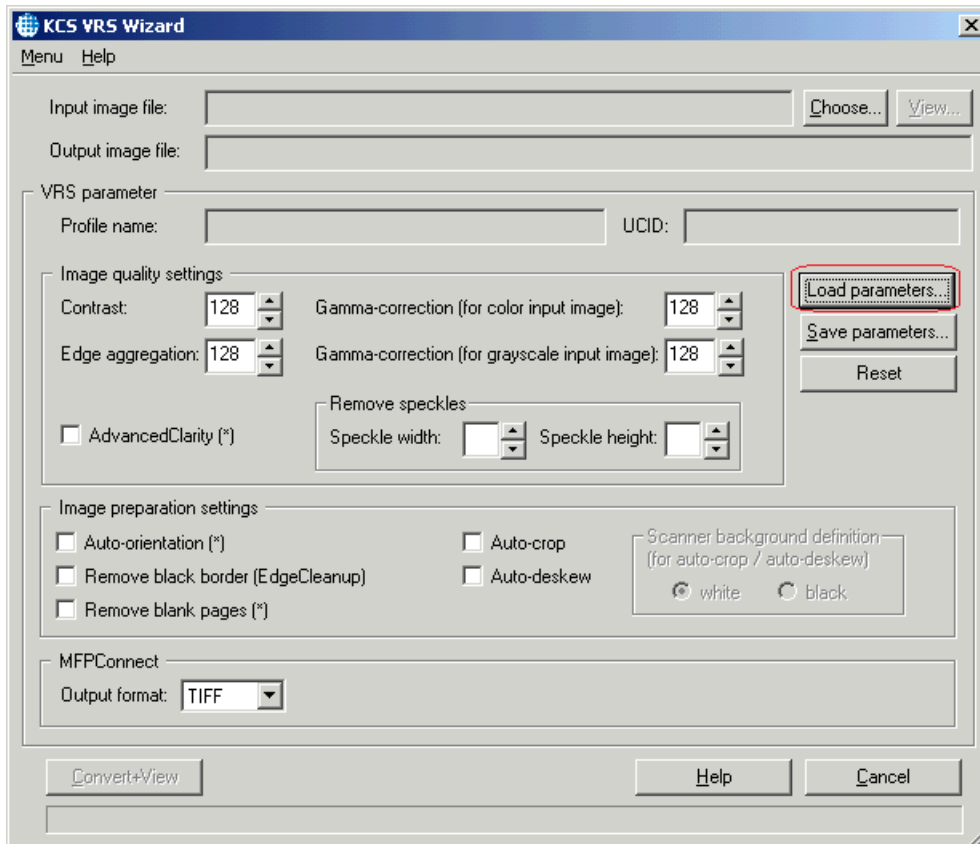
Edit VRS profiles:

- Store VRS parameters for a UCID
- Modify the VRS parameters for a UCID

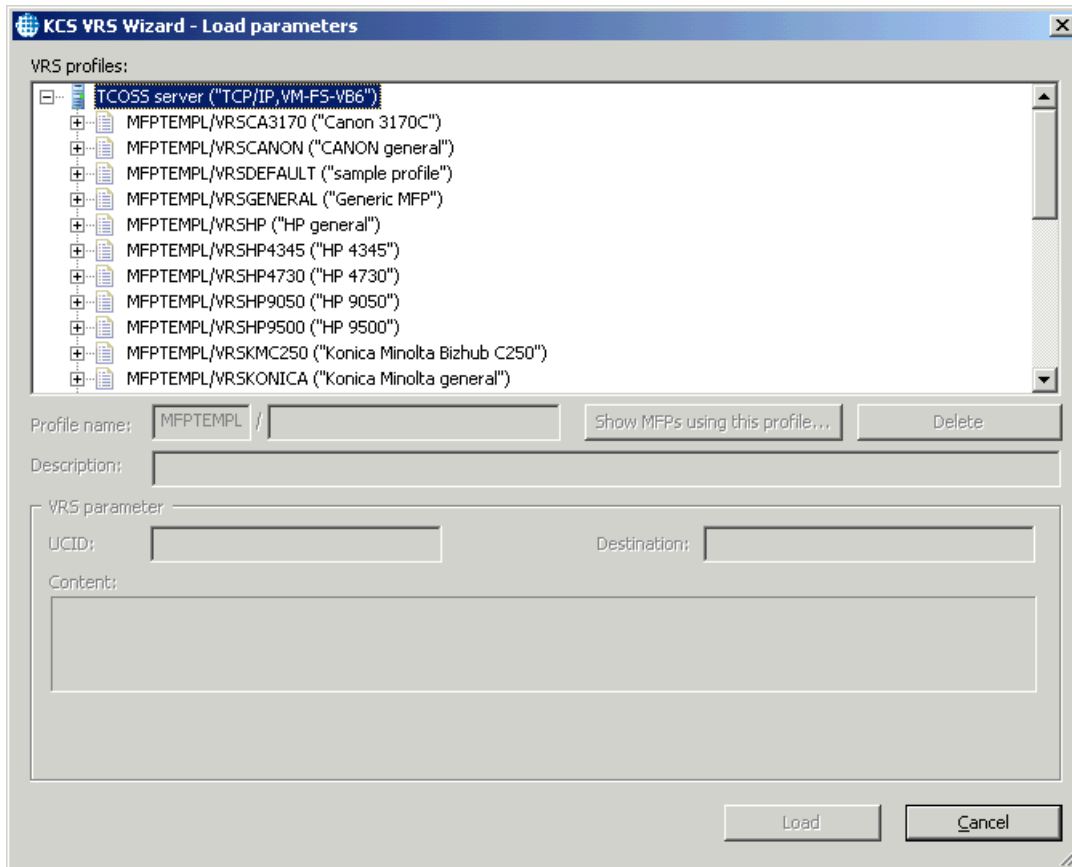
- Delete the VRS parameters for a UCID

Show All VRS Profiles Stored on KCS

- 1) Click Load parameters...

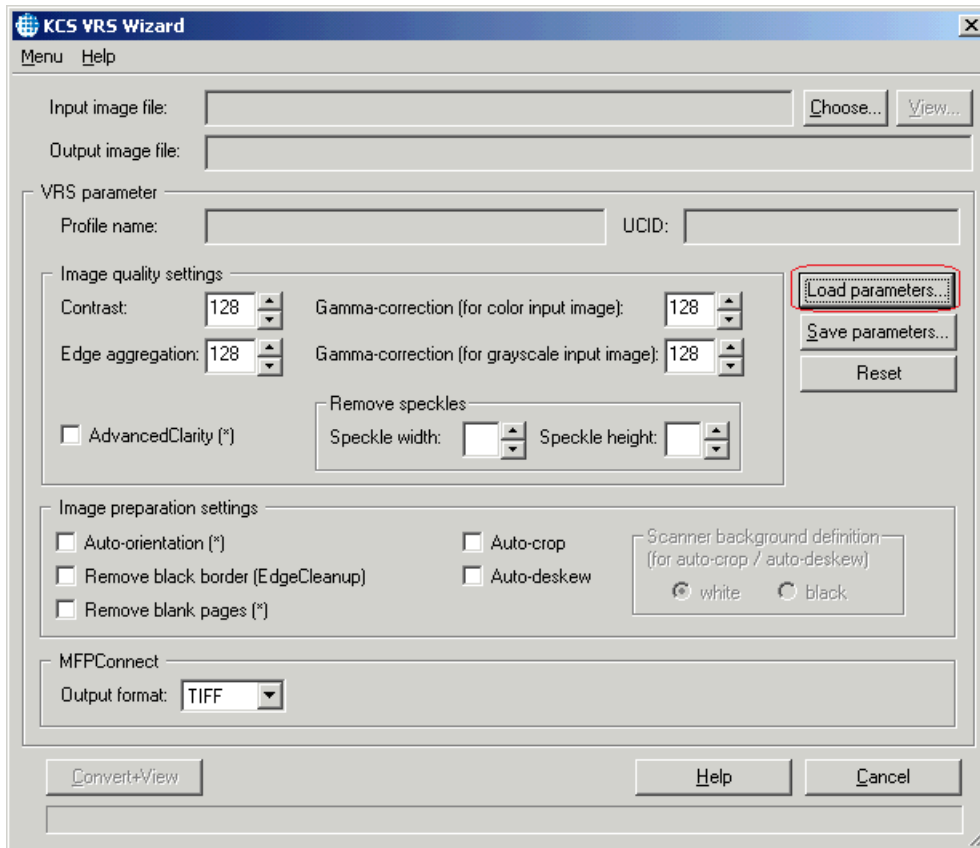


- 2) A list appears with all VRS profiles stored on the KCS server it was logged in.





Show the Content of a VRS Profile

- 1) Click the "Load parameters..." button.




2) A list appears with all VRS profiles stored on the KCS server it was logged in. Click on the “+” to expand the VRS profile node that interests you.

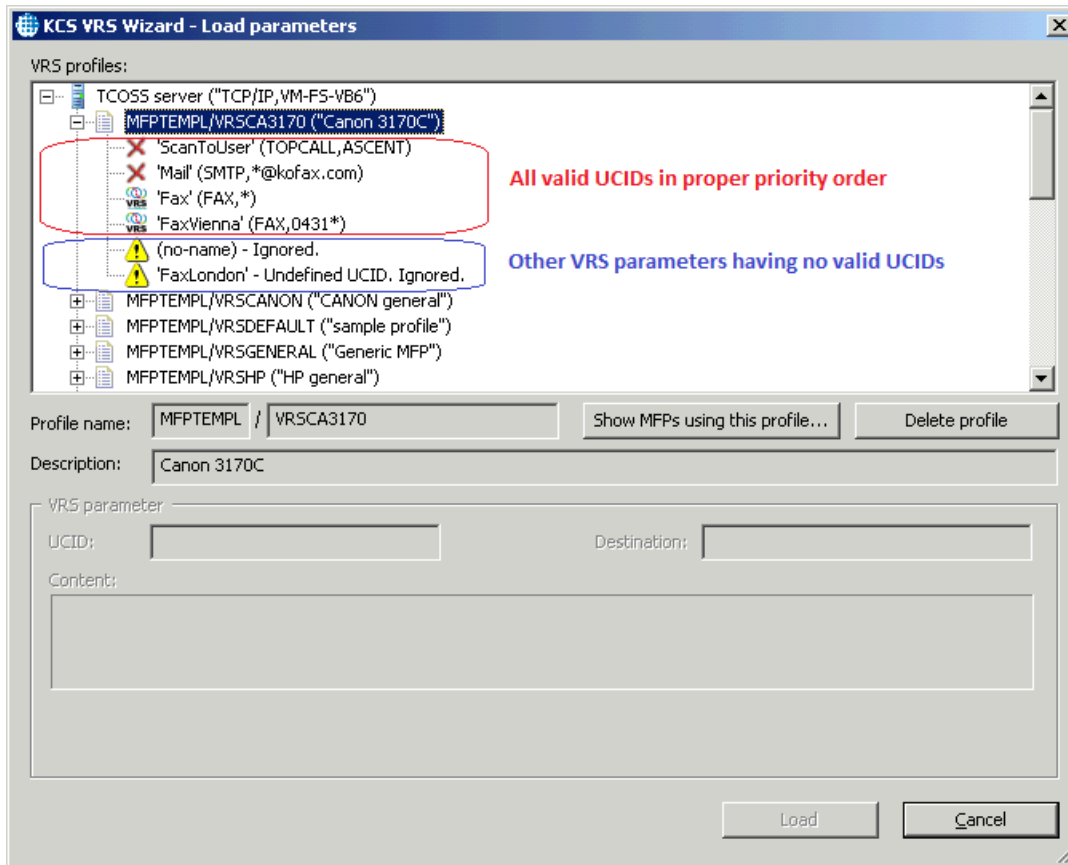
A list of all defined (valid) VRS use cases plus all undefined VRS parameter entries in the selected VRS profile will be displayed. The tree-view displays all UCIDs, even those, for which there is no VRS parameter defined (marked with the  icon). For these use cases the VRS conversion is disabled. This information is important if we want to see at a glance, whether a destination is configured to use VRS or not for all the MFPs using this profile.

 : VRS parameters are stored in VRS profile for this use case; VRS conversion is enabled

: no VRS parameters are stored; VRS is disabled

 : VRS parameters stored in the profile, but without valid UCID

Example:



The message body text in the corresponding KCS message file (message folder: “MFPTEMPL”, message name “VRSCA3170”) looks like this:

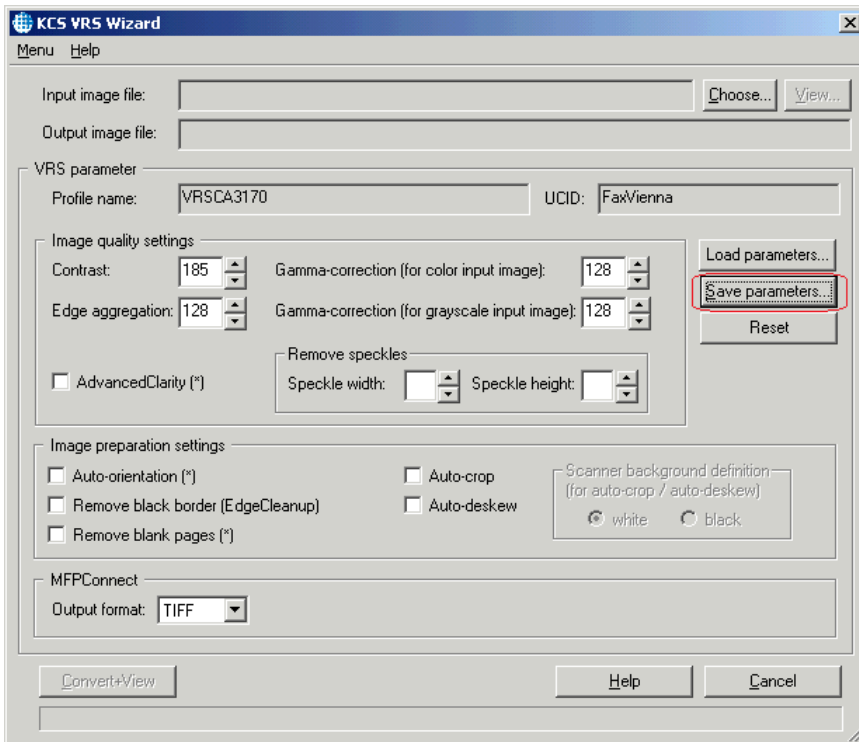
```
BWContrast=128,ColorGamma=128,GrayGamma=128,EdgeAggr=128,AutoBrightness=1
Fax:BWContrast=200,ColorGamma=128,GrayGamma=128,EdgeAggr=128,AutoBrightness=1
FaxLondon:BWContrast=128,ColorGamma=128,GrayGamma=128,EdgeAggr=128,AutoBrightness=1
FaxVienna:BWContrast=128,ColorGamma=128,GrayGamma=128,EdgeAggr=128,AutoBrightness=1
```

As you see, the order of the entries has been changed in the tree view to display the valid entries first; within the valid entries the correct UCID priority order is used.

Create a New VRS Profile

Prerequisite: at least one UCID must be defined on KCS. (Each VRS parameter set stored in a VRS profile belongs to some UCID, so without at least one existing UCID the profile cannot have a valid content, it cannot be stored.)

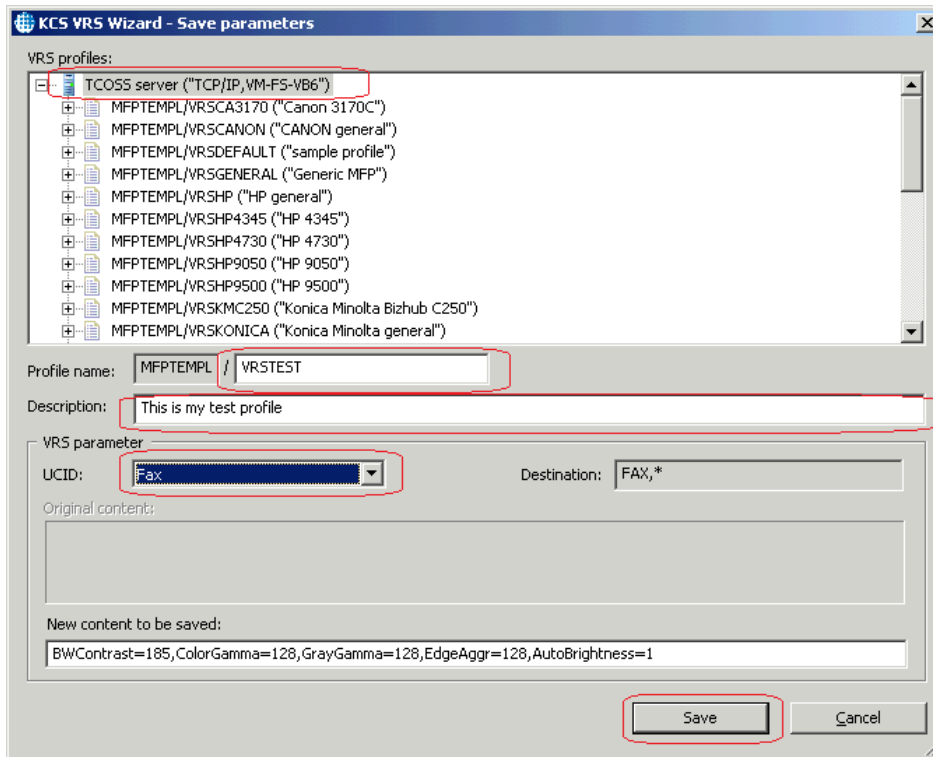
- 1) Choose your preferred VRS settings on the main dialog, and then click “Save parameters...”.



2) Select the “KCS server” node in the tree-view control.

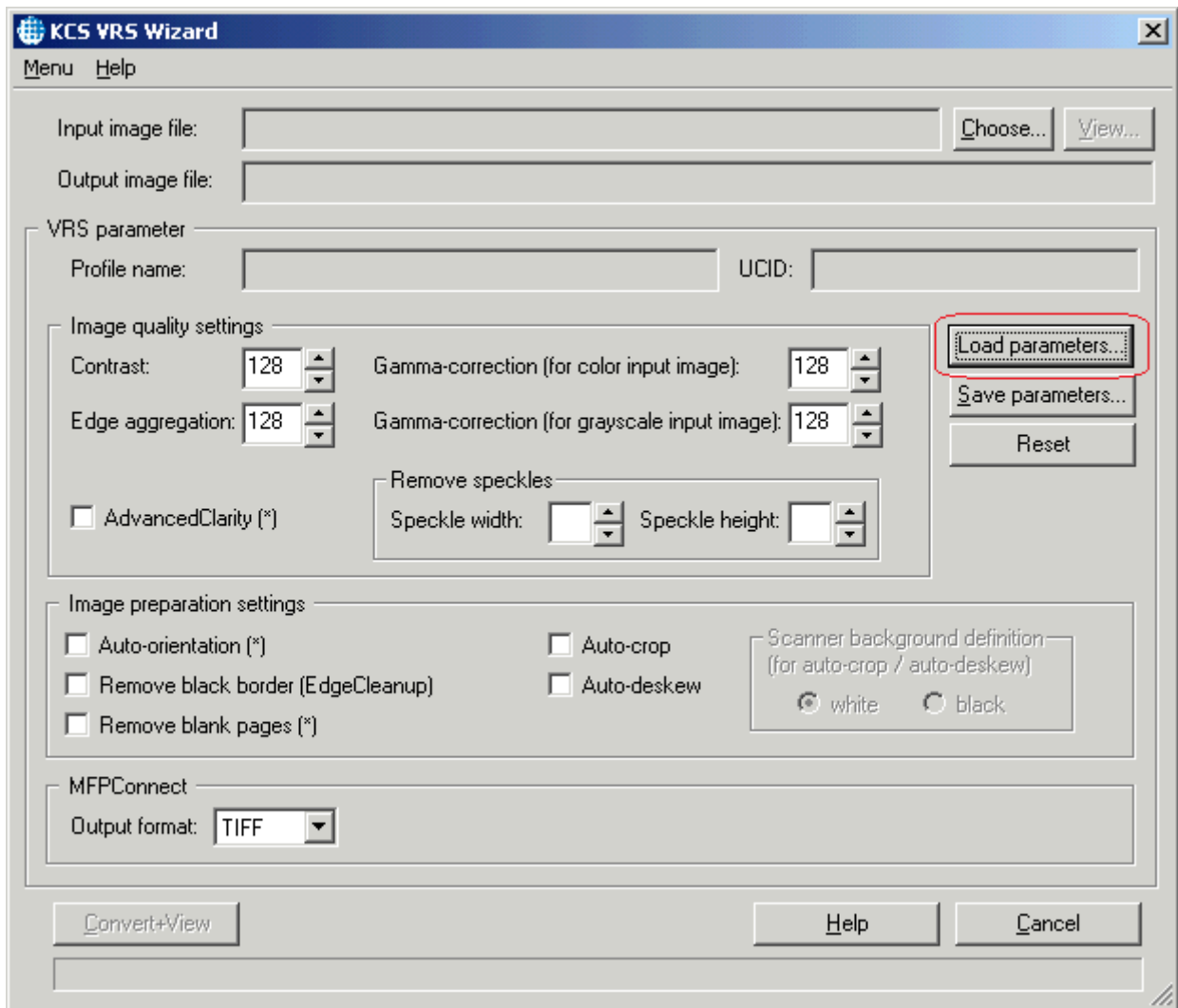
Enter a profile name (must always begin with “VRS”) and, optionally, a description and select a UCID from the combo-box to which the VRS parameters will belong. The “Profile name” must not be an existing profile name; otherwise the VRS profile with this name will be overwritten.

Click Save.

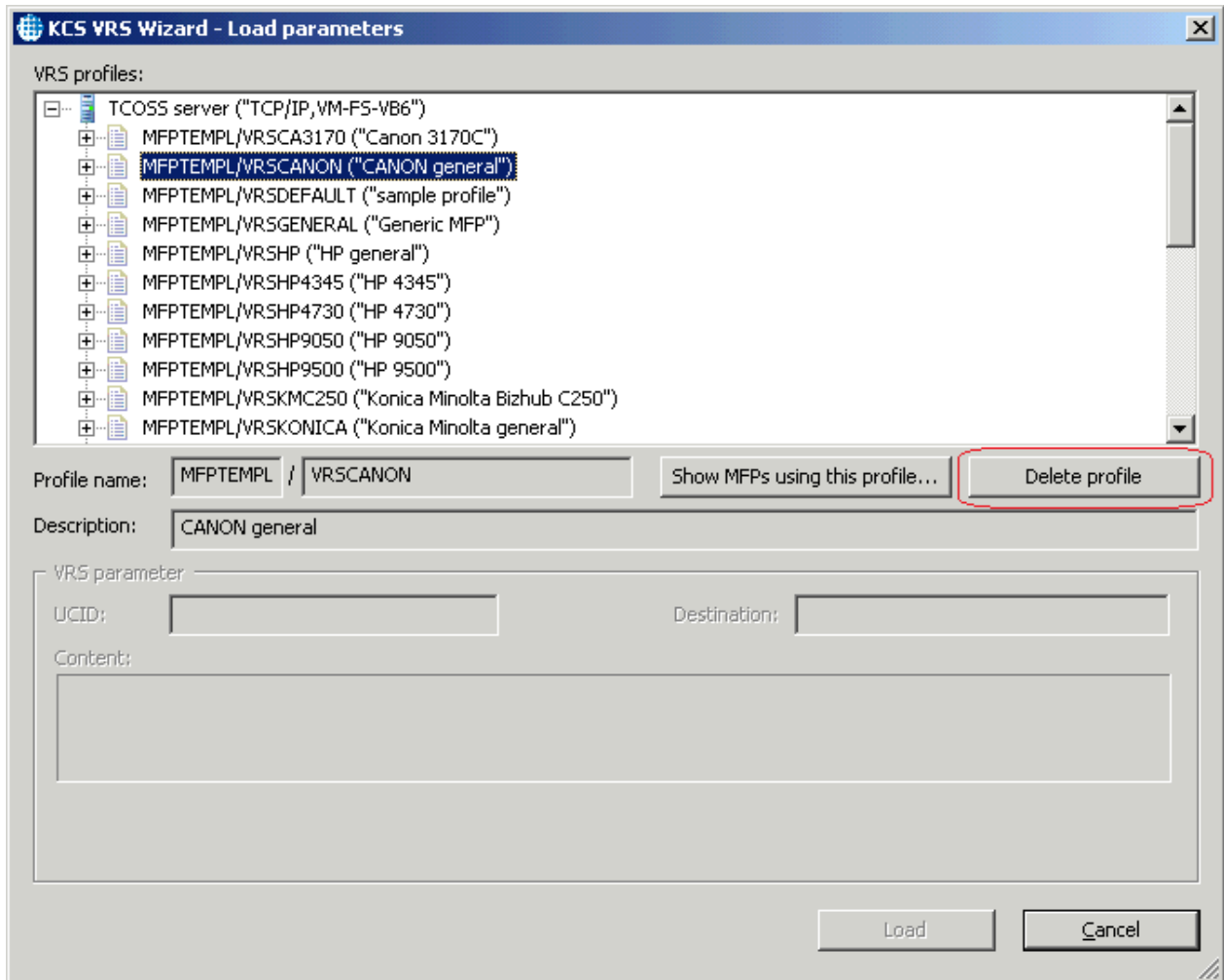


Delete an Existing VRS Profile

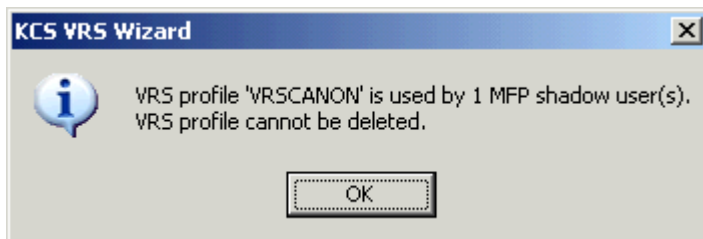
- 1) Click "Load parameters..."



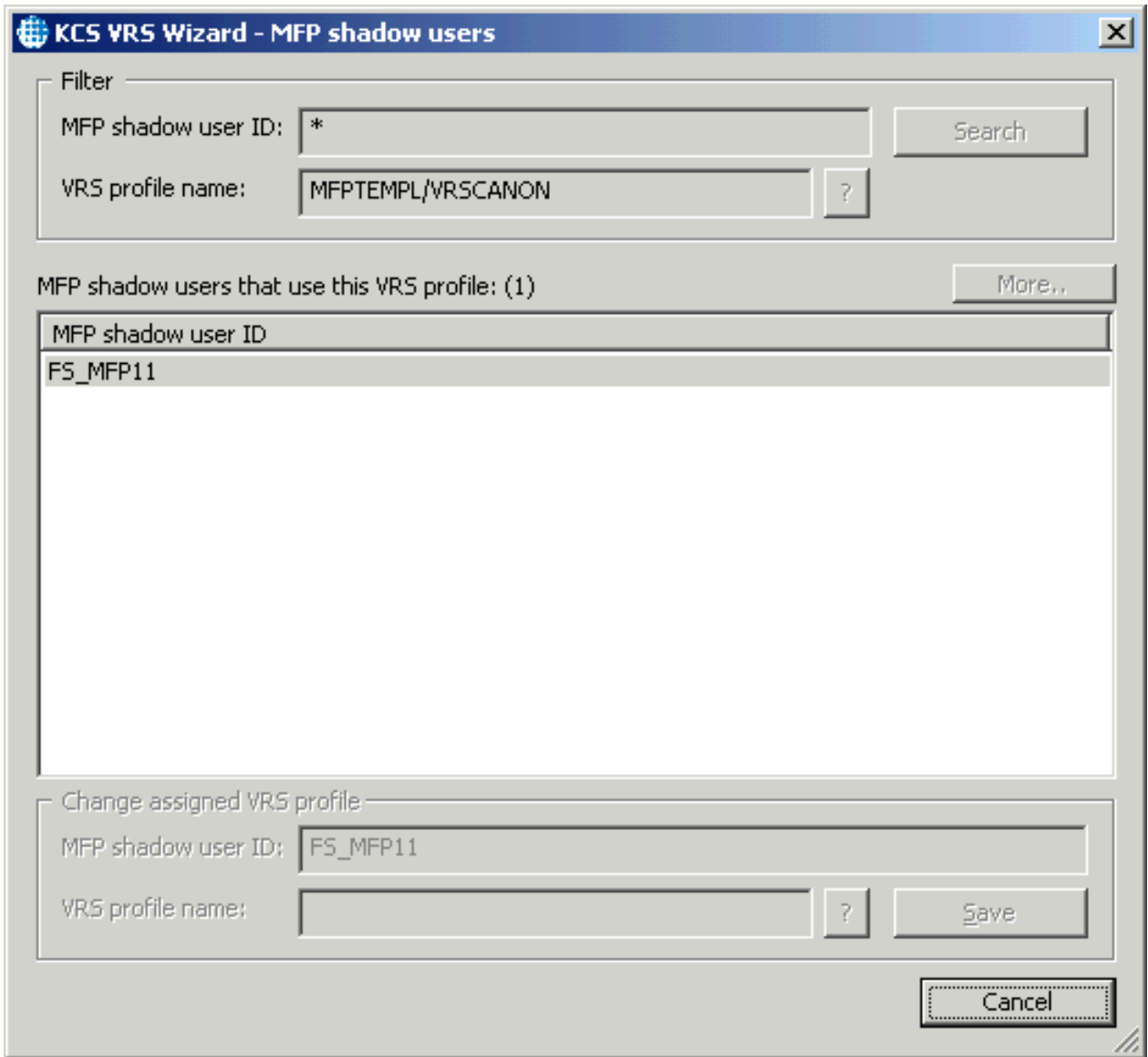
2) Select the profile you want to delete and click "Delete profile".



3) It might happen that this VRS profile is defined in some MFP shadow user as the associated VRS profile. In this case the VRS profile cannot be deleted:

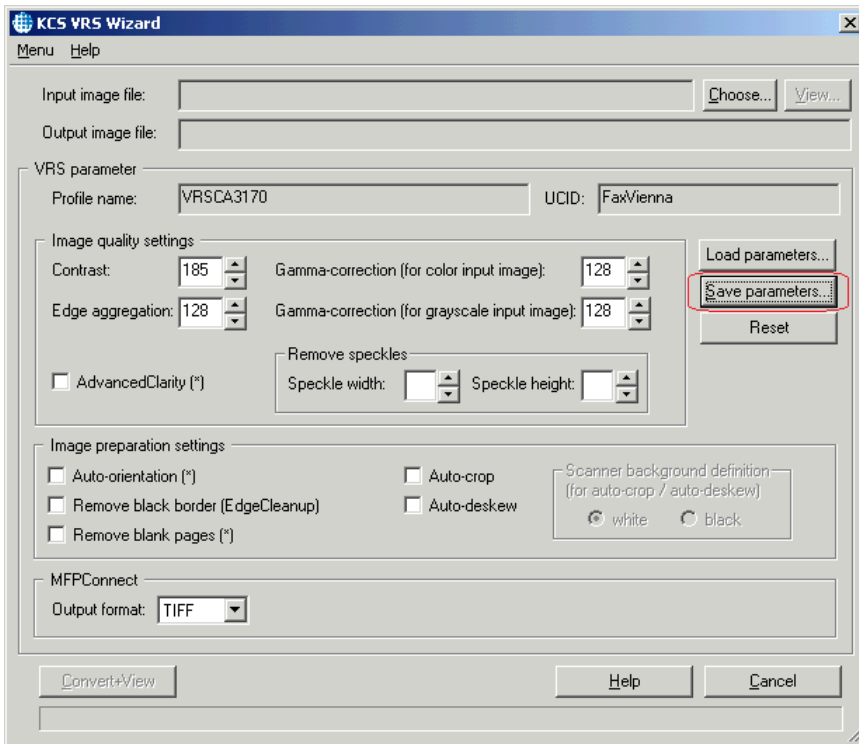




Click the button "Show MFPs using this profile..." to get a list of all MFPs that use this VRS profile.




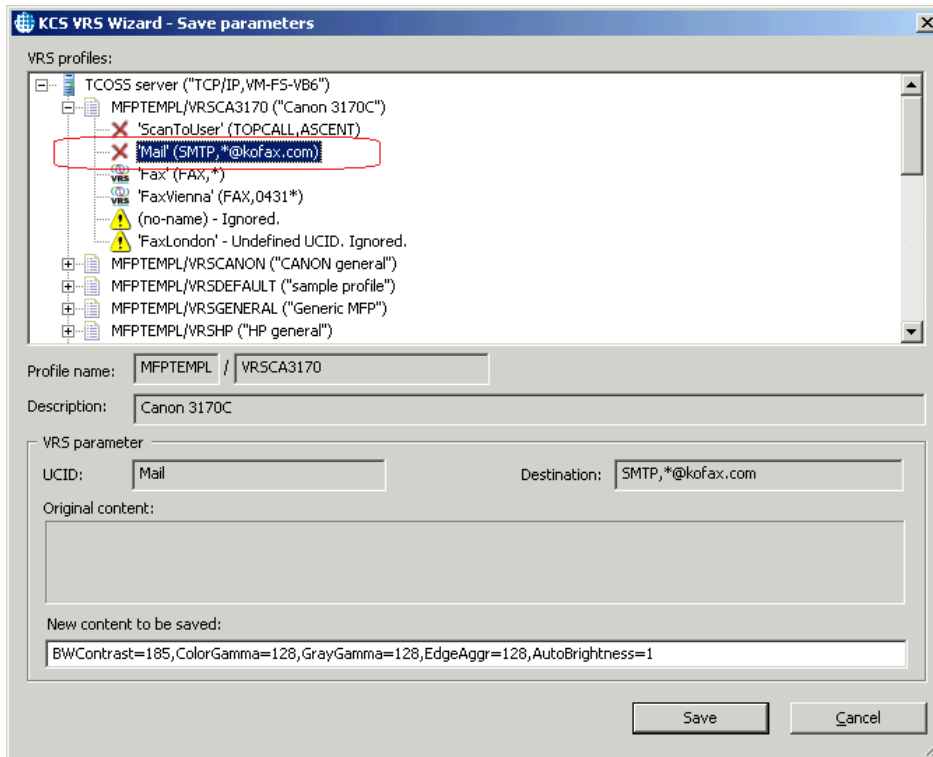
Store VRS Parameters for a UCID

- 1) In the main dialog, enter the VRS parameters you want to save and click the “Save parameters...” button.



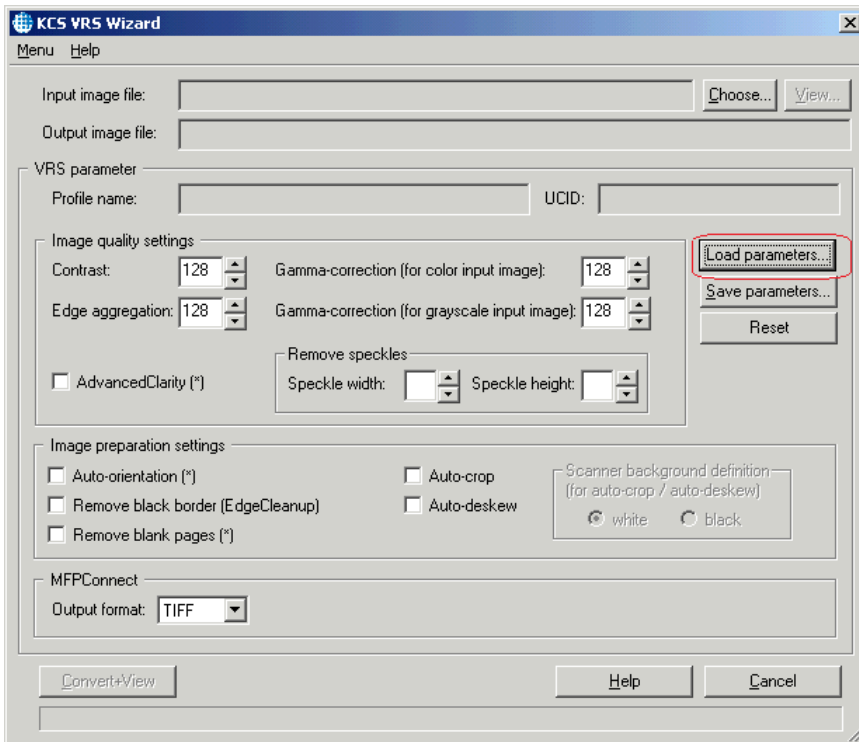
2) Select the VRS profile and use case, with () or without () already existing VRS parameter. Click the “Save” button. The parameters will be stored on KCS.

Next time when you open this dialog, you will see the  icon for this use case, showing that it has now VRS parameter stored in the profile and therefore, VRS is enabled for this use case.



Modify the VRS Parameters for a UCID


- 1) Click the "Load parameters..." button.

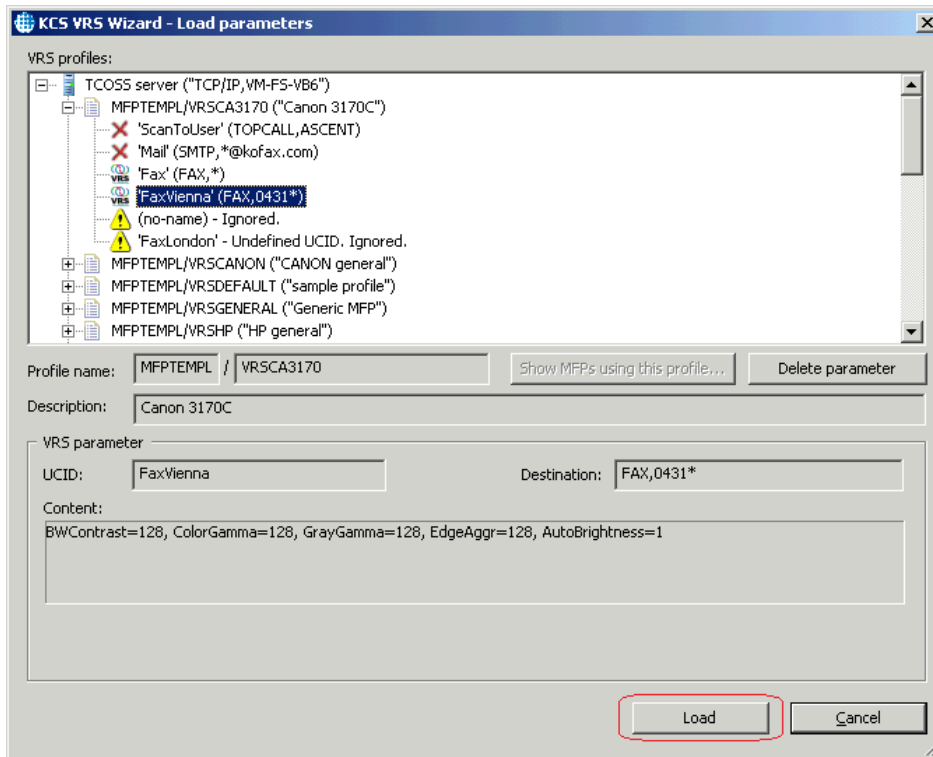


2) A list appears with all VRS profiles stored on the KCS server it was logged in.

Select a profile and a UCID for which you want to modify the VRS parameters.

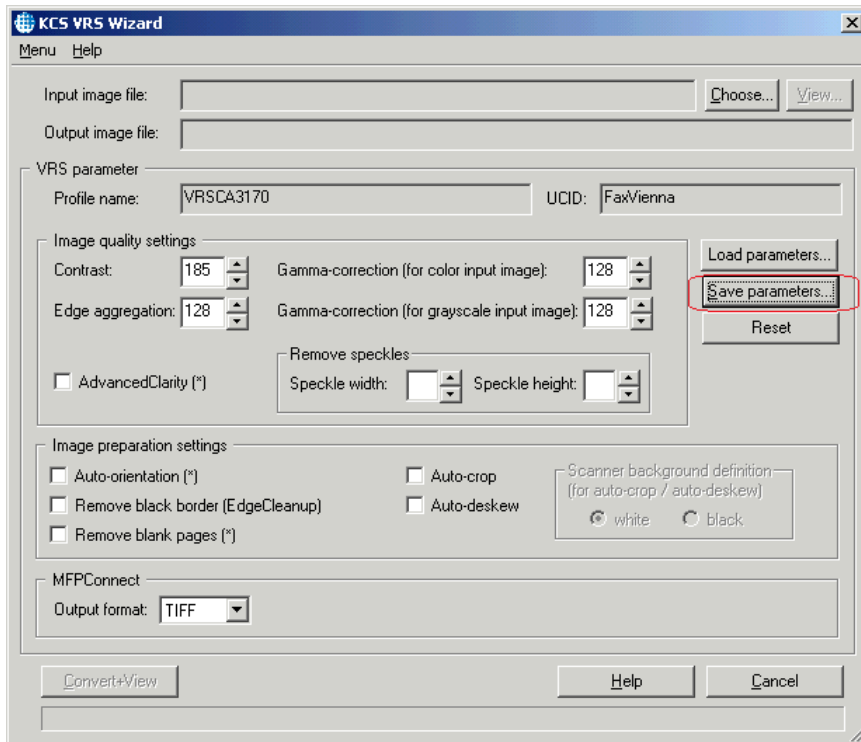
The tree view displays all UCIDs, even those, for which there is no VRS parameter defined (✗ icon).

For these use cases the VRS conversion is disabled. This information is important if we want to see at a glance, whether a destination is configured to use VRS or not for all the MFPs using this profile. The use cases with VRS conversion are marked with the  icon. Select one of these nodes and click the “Load” button.

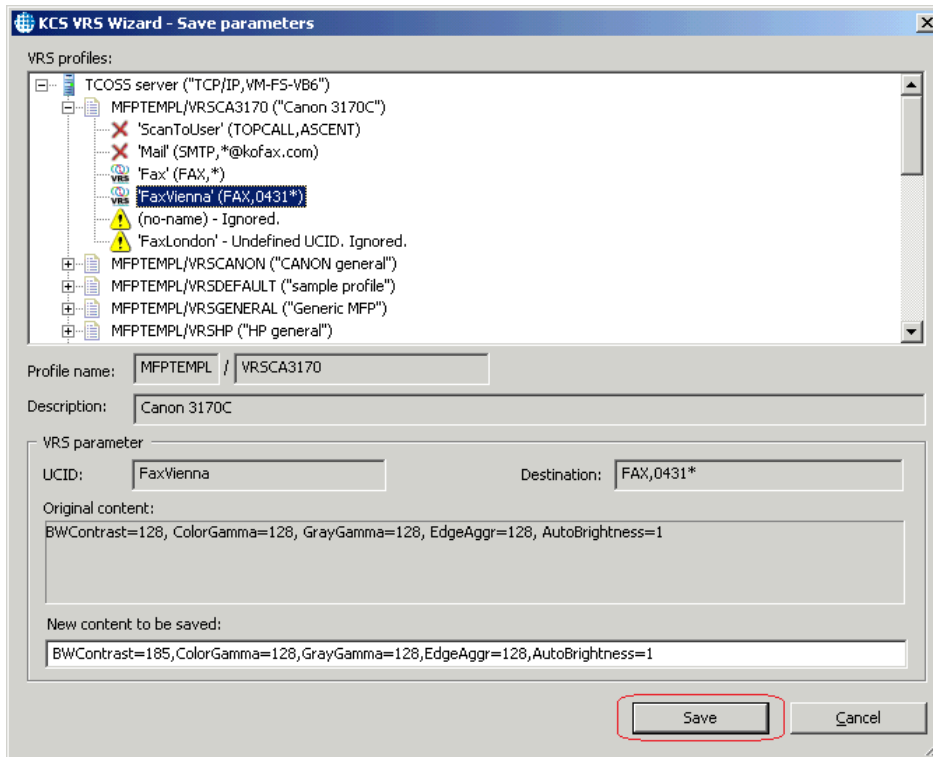


3) The VRS parameters will be loaded to the GUI of the main dialog.

Modify the VRS parameters on the main dialog and then click the "Save profile..." button.

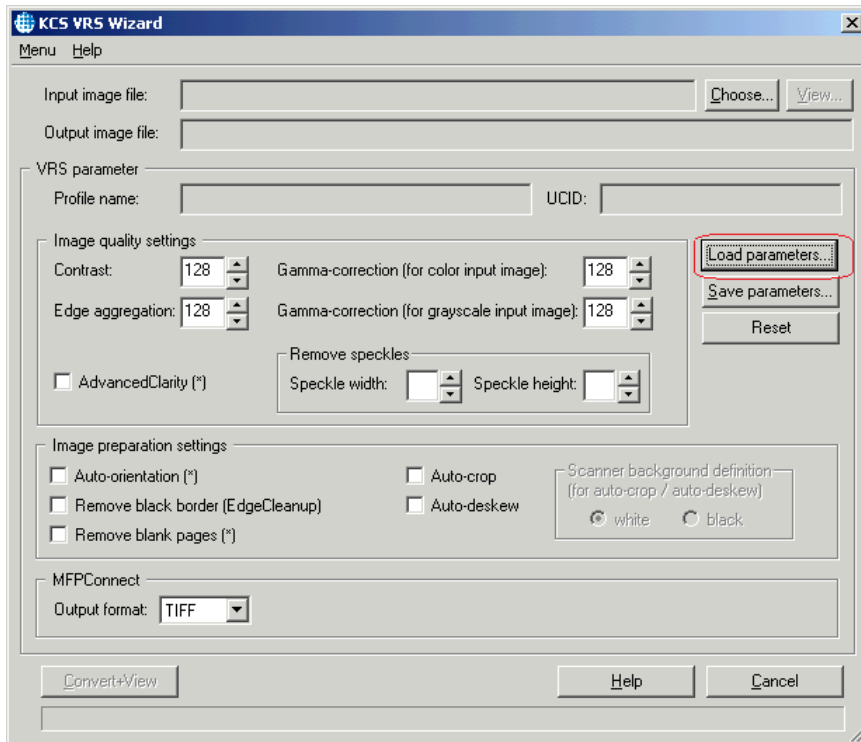


4) In the “Save parameters” dialog all fields are filled automatically. You only need to click the “Save” button.



Delete the VRS Parameters for a UCID

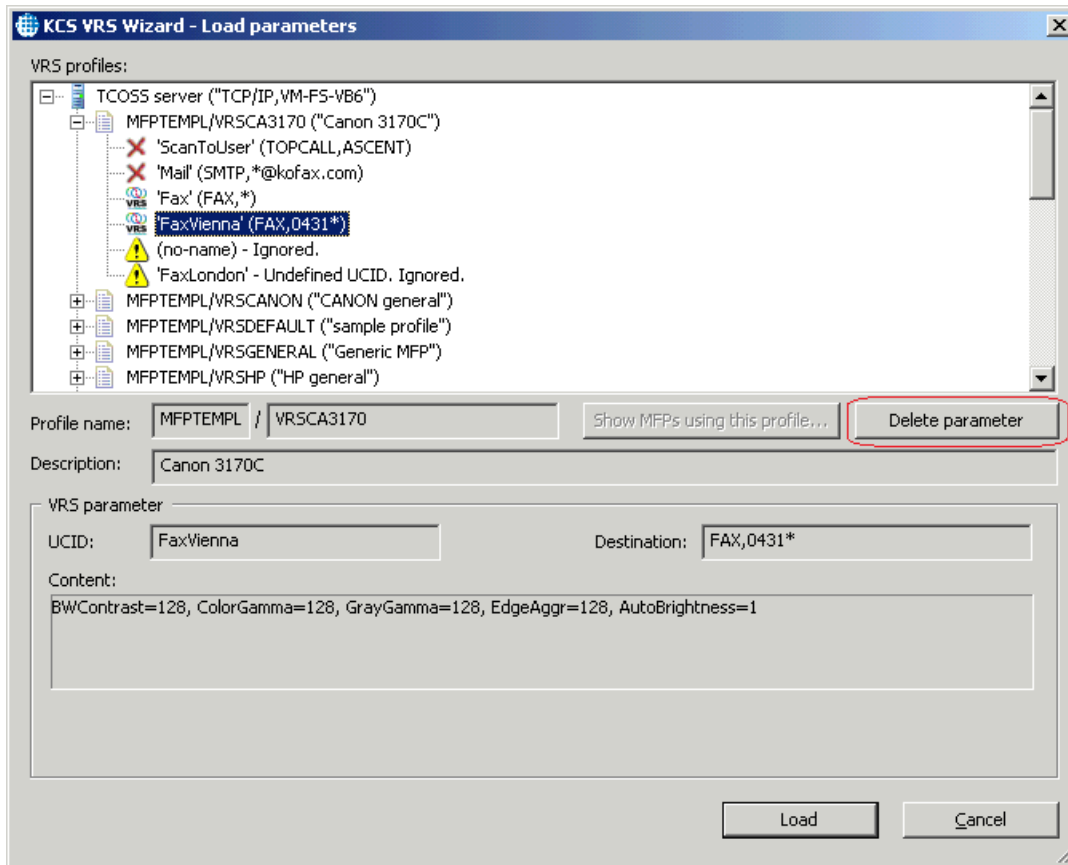
- 1) Click the "Load parameters..." button.



2) A list appears with all VRS profiles stored on the KCS server it was logged in.

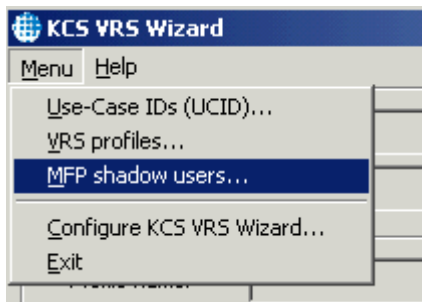
Select the profile and select a UCID for which you want to delete the VRS parameters.

The tree view displays all UCIDs, even those, for which there is no VRS parameter defined (marked with the **X** icon). For these use cases the VRS conversion is disabled. This information is important if we want to see at a glance, whether a destination is configured to use VRS or not for all the MFPs using this profile. The use cases with VRS conversion are marked with the **VRS** icon. Select one of these nodes and click the “Delete parameter” button. After deleting, the selected use case is marked by a **X** icon; this means that the VRS parameter set for the use case is deleted, i.e., the VRS is disabled for this use case.



Show the MFP Shadow Users on TCOSS

Open the 'MFP shadow users' dialog:



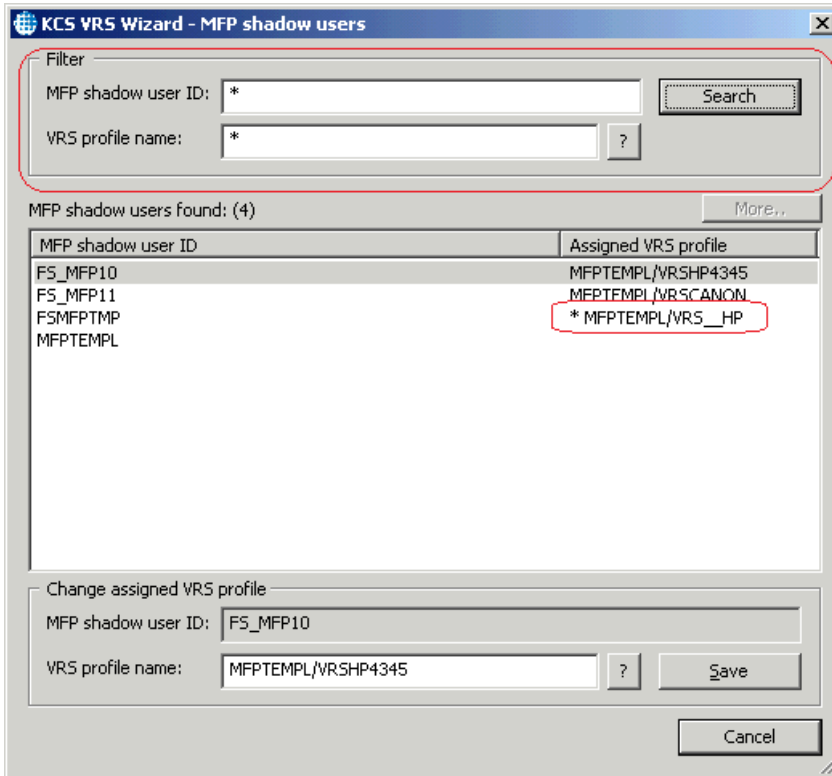
On open all MFP shadow users are displayed.

Use the filter fields and the 'Search' button to show only a subset of all MFP shadow users, e.g., all MFPs beginning with the letters 'HP' (case insensitive).

Or all MFPs having the profile 'MFPTEMPL/VRSCANON'. You can also show all MFPs having no profile. (Clear the filter field 'VRS profile name'.)

The character * marks in the list the referenced but not existing VRS profiles. (E.g. VRS profile MFPTEMPL/VRS__HP in the picture below.)

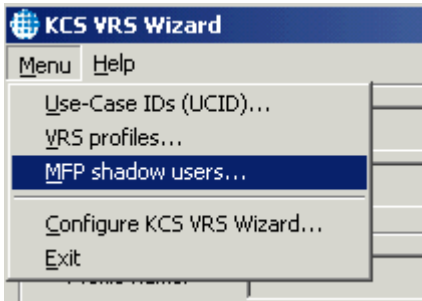
If more than 100 MFP shadow users found on KCS, then the 'More...' button should be used subsequently to continue the listing.



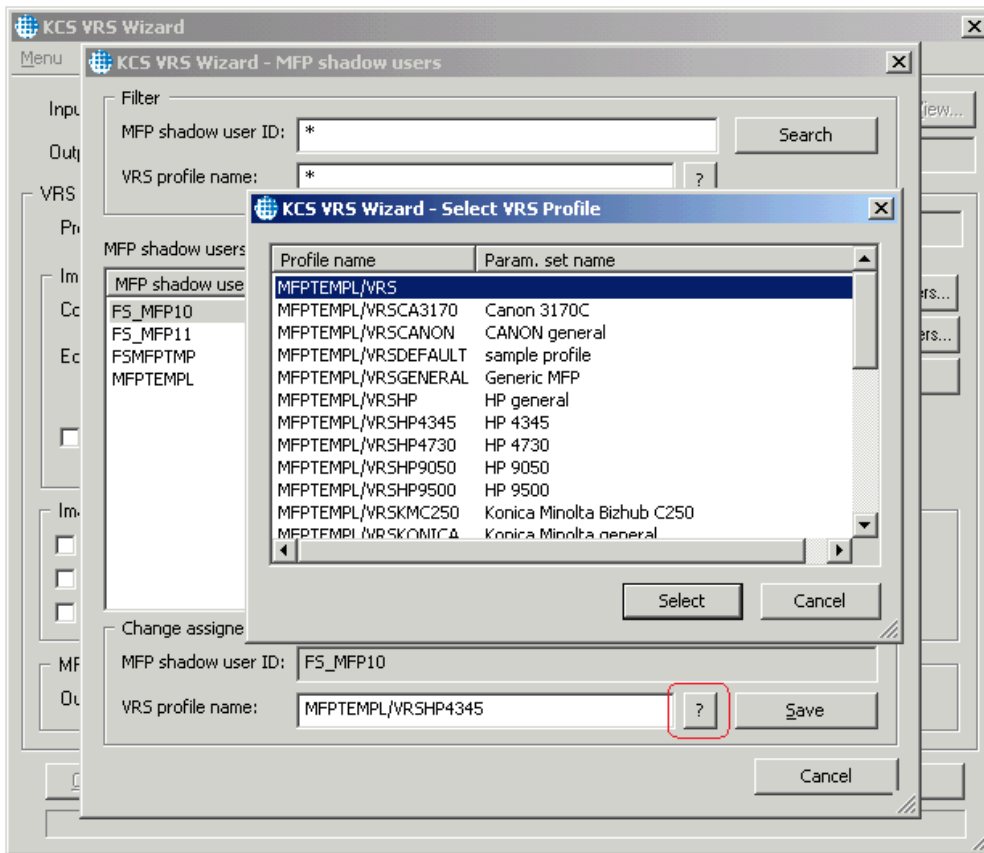
Note When searching e.g. for 'MFPTEMPL/VRSCAN*', then also all MFPs with 'MFPTEMPL \VRSCAN*' (backslash!) will be listed and vice versa. Reason: MFP Integration accepts both slash and backslash as VRS profile definition.

Assign a VRS Profile to One or More MFP(s)

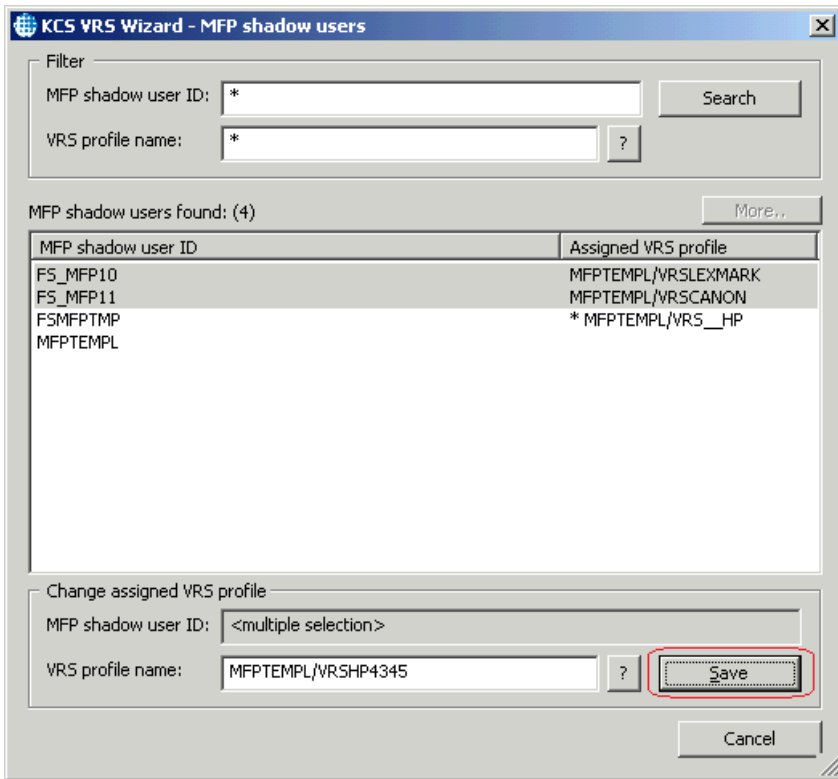
Open the 'MFP shadow users' dialog:



Select one or more MFPs from the list, where you want to change the assigned VRS profile, click the button '?' to get a list of all available VRS profiles:

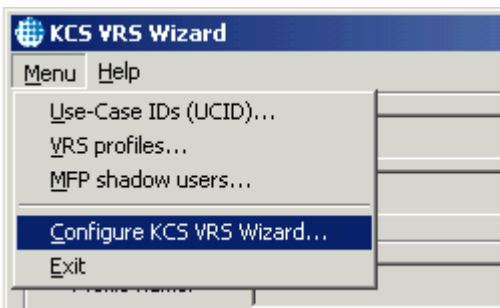


Select a VRS profile and click 'Save'.

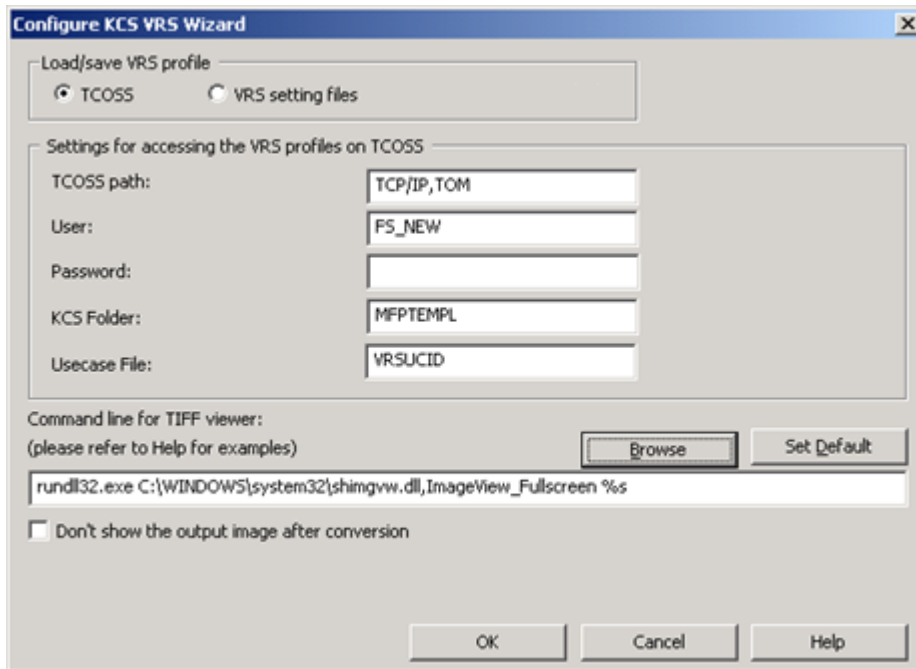


Configuring KCS VRS Wizard

Select “Configure KCS VRS Wizard...” from the menu.

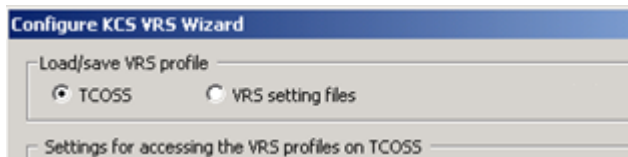


The following dialog opens:



You can set the following features of the KCS VRS Wizard:

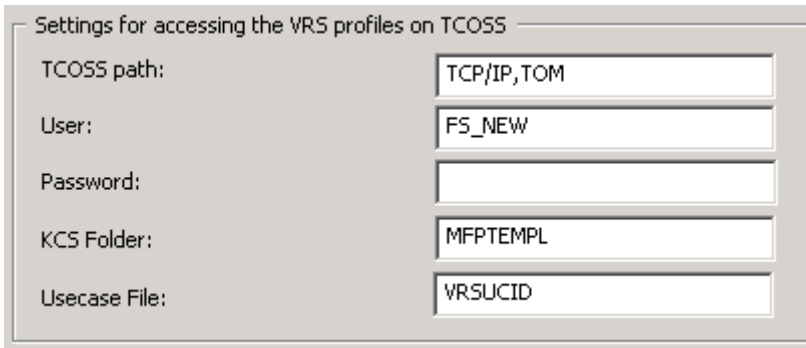
– VRS profile storage type:



Since MFP Integration 2.1, VRS profiles are stored on TCOSS. In earlier versions they were stored in VRS setting files. You can now choose your preferred storage method by selecting the proper option in Load/save VRS profile.

Tip The setting “VRS setting file” can still be used just to store a certain VRS parameter set temporarily in a file for later use.

– TCOSS related settings:



The TCOSS path, User and Password are the login data to the TCOSS server, where the VRS profiles are stored.

KCS Folder is the TCOSS message folder where use case file and VRS profiles are stored.

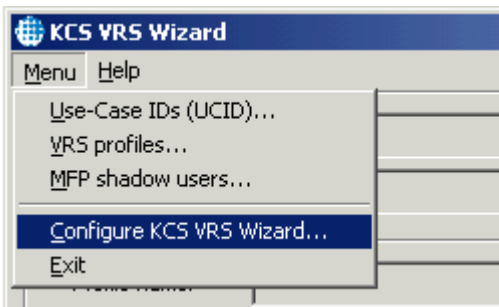
– TIFF viewer:

See: Setting the Image Viewer

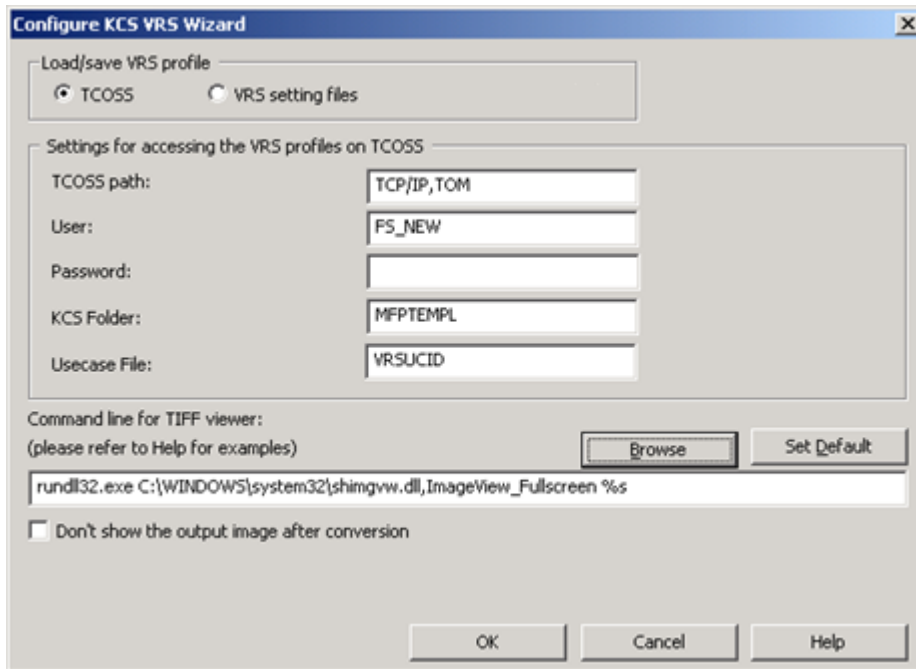
Setting the Image Viewer

If you select **Convert > View** , an image viewer will open automatically after the VRS conversion, showing the VRS processed image. Also, if you click **View** next to the input image definition field, the input image will be shown with an image viewer. This image viewer is the default TIFF or PDF or JPG viewer installed on the operating system (depending on the image format viewed image).

Optionally, you can use another TIFF viewer for KCS VRS Wizard. To set the TIFF viewer, select the menu item 'Configure KCS VRS Wizard...'.



The following window opens:



Use the “Command line for TIFF viewer” field to define your preferred TIFF viewer.

At the beginning, the default TIFF viewer of the system will be used. (The “opening” application assigned to the file extension “.tif”.)

Windows picture and fax viewer:

```
rundll32.exe C:\WINDOWS\system32\shimgvw.dll,ImageView_Fullscreen %s
```

IrfanView:

```
C:\Program Files\IrfanView\i_view32.exe %s
```

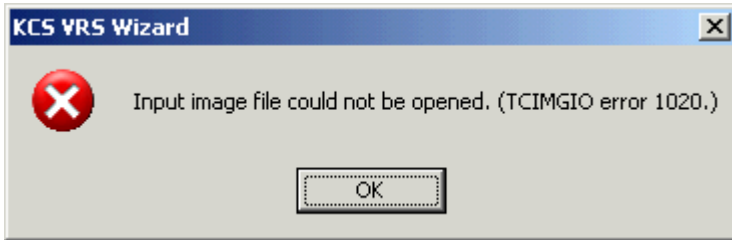
Microsoft Office Document Imaging:

```
C:\Program Files\Common Files\Microsoft Shared\MSPaper\mspview.EXE %s
```

(%s is the placeholder for the TIFF file to be displayed.)

Click Set Default to fill the edit field with the default TIFF viewer of the system.

Warning: Some image viewer like Microsoft Office Document Imaging locks the image file permanently while showing it. So, if you keep open the input image with this image viewer, you cannot perform VRS conversion. Instead, you get an error message.



Also, if you keep open the VSR output image and you try to perform the same conversion again (the point is: with the same output file name), then you get this message, because VRS will not be able to open the output image:



(This latter is not too bad, because normally you vary the VRS parameters and so you will have another output file name and so the error does not occur.)

Workaround: Use another image viewer (e.g. IrfanView) or close Microsoft Office Document Imaging showing the input image before converting the image.

Deactivate Image Viewer

Select the "Don't show the output image after conversion" checkbox if you prefer that output images are not displayed automatically after the VRS conversion. This may be useful if you want to evaluate the output images later. In this case, the Convert+View button on the main dialog window will be changed to Convert, indicating that no image viewer is currently set.