



Markvision Enterprise 4.1 Database Access

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Document Overview

This white paper focuses on the database structure of Markvision Enterprise (MVE). The intent of this document is to enable users to understand the tables and fields within the database and create custom queries and reports.

Version: 1.0

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1 Overview

Markvision Enterprise (MVE) allows you to gather various types of data about your discovered printers and their settings. Some of this data includes:

- Identification information such as IP address, model name, and manufacturer.
- Capabilities such as color, copy, and speed
- Installed options such as hard drives, paper trays, and supplies.
- Printer statistics, basic settings, advanced security settings, firmware levels, installed applications, certificates, and keywords

MVE stores this information in three databases.

- FRAMEWORK – The primary database where most of the device data is stored
- MONITOR – A smaller database where task statistics are stored
- QUARTZ – A database used by MVE's third-party scheduler (Quartz) to store scheduling information

This document lists and explains most of the tables in the FRAMEWORK database and describes the fields that each table contains.

Note: *The tables and columns in the database are subject to change from one release to the next.*

2 Supported databases

MVE supports Firebird® (distributed with MVE) and Microsoft SQL Server.

Consult the MVE Admin Guide for supported versions.

2.1 Database differences

The following table maps Firebird data types used in MVE to their corresponding data types in Microsoft SQL Server.

Firebird data types	Microsoft SQL server data types
BIGINT	Bigint
VARCHAR(x)	varchar(x)
TIMESTAMP	Datetime
INTEGER	Int
SMALLINT/ TINYINT*	Bit
BLOB SUB_TYPE 0	varbinary(1024)

*This is required for Microsoft SQL Server.

3 Framework tables and field descriptions

FRAMEWORK is the primary MVE database where most of the device data is stored. The tables and descriptions of each field are listed in the following table categories.

Note: The data types used in the “Data Type” columns of these tables relate to a Firebird database. Refer to the **Views and data export** section of this document to see how these correspond to Microsoft SQL Server data types.

3.1 Printer

The following tables deal with the logical representation of a physical printer.

3.1.1 CONFIG_ITEM

This table represents the ITIL Configuration Item portion of the printer. It has the “state” and TIMESTAMPS of when the CI was created, initially managed, last discovered, etc. This does not represent any physical portion of a printer; it is simply an abstract representation of the device.

Field Name	Data Type	Description
CI_ID	BIGINT	Primary key
CI_STATE	VARCHAR(255)	The current state of the CI: NEW, MANAGED, MISSING, FOUND, CHANGED, UNMANAGED, RETIRED
CREATION_DATE	TIMESTAMP	When the CI first entered the system
INITIAL_MANAGEMENT_DATE	TIMESTAMP	When the CI first entered the MANAGED state (or sub-state)
LAST_AUDIT_DATE	TIMESTAMP	The last time an audit was attempted on the CI (may not have been successful)
PRINTER_ID	BIGINT	The foreign key to NETWORK_PRINTER.PRINTER_ID
LAST_DISCOVERY_DATE	TIMESTAMP	The last time a discovery was attempted on the CI (may not have been successful)
LAST_SUCCESSFUL_AUDIT_DATE	TIMESTAMP	The last time an audit was successful on the CI
LAST_SUCCESSFUL_DISCOVERY_DATE	TIMESTAMP	The last time a discovery was successful on the CI
DEFAULT_CERT_COMMON_NAME	VARCHAR(255)	Name of the default certificate
DEFAULT_CERT_ISSUER_NAME	VARCHAR(255)	Issuer name
DEFAULT_CERT_SIGNING_STATU S	VARCHAR(255)	Represents the certificate signing status of a printer which can be any of the following: <ul style="list-style-type: none"> • SIGNED • INVALID_CERT • NO_CA • UNKNOWN
DEFAULT_CERT_VALID_FROM	TIMESTAMP	Start of validity date of the certificate

DEFAULT_CERT_VALID_TO	TIMESTAMP	End of validity date of the certificate
DEFAULT_CERTIFICATE	VARCHAR(8190)	The default certificate
DEFAULT_CERT_SERIAL_NUMBER	VARCHAR(255)	Serial number of the default certificate

3.1.2 NETWORK_ADAPTER

This table represents the physical printer's network adapter (also known as the print server).

Field Name	Data Type	Description
ADAPTER_TYPE	VARCHAR(31)	Always INA (Internal Network Adapter)
ADAPTER_ID	BIGINT	Primary key
FIRMWARE_REVISION	VARCHAR(255)	Current network firmware revision
MANUFACTURER	VARCHAR(255)	N/A
MODEL_NAME	VARCHAR(255)	N/A
SERIAL_NUMBER	VARCHAR(50)	N/A
SYSTEM_NAME	VARCHAR(255)	N/A
RETRIES	INTEGER	Number of times to retry a particular communication attempt
SNMP_READ_COMMUNITY_NAME	VARCHAR(255)	SNMP Community Name for reading
TIMEOUT	BIGINT	Number of milliseconds to wait for a response from this printer for a particular communication attempt
CONTACT_LOCATION	VARCHAR(255)	N/A
CONTACT_NAME	VARCHAR(255)	N/A
DOMAIN_NAME_SUFFIX	VARCHAR(191)	The domain name suffix associated with this network adapter (for example foo.lexmark.com). Combine with HOSTNAME to get the Fully Qualified Domain Name (FQDN)
HOSTNAME	VARCHAR(63)	The hostname associated with this network adapter; MVE can be configured to retrieve this from DNS or from the network adapter itself. Combine with DOMAIN_NAME_SUFFIX to get the Fully Qualified Domain Name (FQDN)
IP_ADDRESS	VARCHAR(15)	The string representation of this network adapter's IP address; deprecated
IP_ADDRESS_INT	INTEGER	The integer representation of this network adapter's IP address

Field Name	Data Type	Description
IP_ADDRESS_SUBNET	INTEGER	The integer representation of the subnet on which this network adapter resides
MAC_CANONICAL	VARCHAR(12)	The network adapter's MAC address, in canonical format
PORTS	INTEGER	The number of ports this network adapter supports; always 1
RAND_MAC	SMALLINT/ TINYINT*	Flag indicating whether MAC_CANONICAL's current value was randomly generated.
CREDENTIAL_REQUIRED	SMALLINT/ TINYINT*	Flag indicating whether a credential is necessary in order to communicate with the associated printer
CREDENTIAL_PASSWORD	BLOB SUB_TYPE 0	This value is encrypted and not available for use outside MVE.
CREDENTIAL_PIN	BLOB SUB_TYPE 0	This value is encrypted and not available for use outside MVE.
CREDENTIAL_REALM	VARCHAR(64)	Credential's realm, if set
CREDENTIAL_USERNAME	VARCHAR(255)	Credential's username, if set
PORT_CONFIG_LST_TCP_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
PORT_CONFIG_LST_UDP_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
PORT_CONFIG_MDNS_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
PORT_CONFIG_NPA_TCP_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
PORT_CONFIG_NPA_UDP_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
PORT_CONFIG_RAW_PRINT_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
PORT_CONFIG_SNMP_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open

Field Name	Data Type	Description
PORT_CONFIG_XML_TCP_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
PORT_CONFIG_XML_UDP_OPEN	SMALLINT/ TINYINT*	Flag indicating whether this port on the associated printer is open
SECURE_COMMUNICATION_STATE	VARCHAR(255)	One of: UNSECURED, MISSING_CREDENTIALS, or SECURED
USER_PASSWORD	Blob sub_type 0	Username portion of the credentials
SNMP_USERNAME	VARCHAR(32)	User name used for SNMPv3 communications.
SNMP_PASSWORD	VARCHAR(255)	This value is encrypted and not available for use outside MVE.
SNMP_MIN_AUTHENTICATION_LEVEL	Varchar(50)	Minimum Authentication Level used for SNMPv3 communications.
SNMP_AUTHENTICATION_HASH	VARCHAR(50)	Authentication Hash used for SNMPv3 communications
SNMP_PRIVACY_ALGORITHM	VARCHAR(50)	Privacy Algorithm used for SNMPv3 communications.
LOGIN_METHOD	VARCHAR(256)	The authentication method used to login to the printer.
LOGIN_METHOD_NAME	VARCHAR(256)	If the LOGIN_METHOD is either LDAP or LDAP+GSSAPI this is the name of the particular authentication method.

*This is required for Microsoft SQL Server.

3.1.3 NETWORK_PRINTER

This table represents the actual printer portion of the physical printer.

Field Name	Data Type	Description
PRINTER_ID	BIGINT	Primary key
MANUFACTURER	VARCHAR(255)	Company that actually made the printer; may differ from DISPLAY_MANUFACTURER
MODEL_NAME	VARCHAR(255)	Model name of this printer
SERIAL_NUMBER	VARCHAR(50)	Serial number of this printer
SYSTEM_NAME	VARCHAR(255)	Used to identify the device

Field Name	Data Type	Description
COPY	SMALLINT/ TINYINT*	Flag indicating whether this printer supports copying
DUPLEX	SMALLINT/ TINYINT*	Flag indicating whether this printer supports duplexing
ESF	SMALLINT/ TINYINT*	Flag indicating whether this printer supports eSF applications
MARKING_TECHNOLOGY	VARCHAR(255)	Type of marking technology used by this printer (for example Electrophotographic)
MEMORY	BIGINT	Amount of memory, in bytes
PROFILE	SMALLINT/ TINYINT*	Flag indicating whether this printer supports profiles
RECEIVE_FAX	SMALLINT/ TINYINT*	Flag indicating whether this printer supports receiving faxes
SCAN_TO_EMAIL	SMALLINT/ TINYINT*	Flag indicating whether this printer supports scan-to-e-mail
SCAN_TO_FAX	SMALLINT/ TINYINT*	Flag indicating whether this printer supports scan-to-fax
SCAN_TO_NETWORK	SMALLINT/ TINYINT*	Flag indicating whether this printer supports scan-to-network
SPEED	VARCHAR(255)	Sheets per minute
DISPLAY_MANUFACTURER	VARCHAR(255)	The name that appears on the outside of the printer (for example, MANUFACTURER could be "LEXMARK" but DISPLAY_MANUFACTURER could be "Dell")
FAMILY_ID	INTEGER	NPA Family ID
INITIAL_DISCOVERY_TIMESTAMP	TIMESTAMP	When this printer was first discovered
LIFETIME_PAGE_COUNT	BIGINT	Lifetime page count
MAINTENANCE_COUNTER	BIGINT	Maintenance counter
ADAPTER_PORT	INTEGER	The port on which this printer is connected to its associated network adapter; for now, will always be 1
PROPERTY_TAG	VARCHAR(255)	Asset/Brass/Property Tag
ADAPTER_ID	BIGINT	Foreign key to NETWORK_ADAPTER.ADAPTER_ID

Field Name	Data Type	Description
RAND_SN	SMALLINT/ TINYINT*	Flag indicating whether SERIAL_NUMBER's current value was randomly generated.
DEV_STATUS_REG_COUNTER	INTEGER	A count of the number of device status registrations
SCANNER_SERIAL_NUMBER	VARCHAR(12)	For modular MFPs, the serial number of the scan unit
DISK_ENCRYPTION	VARCHAR(8)	Frequency for which disk encryption is enabled
DISK_WIPING	VARCHAR(8)	Frequency for which disk wiping is enabled
COLOR	SMALLINT/ TINYINT*	Flag indicating whether the printer prints in color.
PRINTER_STATUS_SUMMARY	SMALLINT/ TINYINT*	Indicator of the most severe status message present on the printer.
SUPPLY_STATUS_SUMMARY	SMALLINT/ TINYINT*	Indicator of the most severe supply status message present on the printer.
TLI	VARCHAR(255)	Top Level Indicator of the printer model.
FAX_STATION_NAME	VARCHAR(255)	The value of the fax name setting on the printer.
FAX_STATION_NUMBER	VARCHAR(255)	The value of the fax number setting on the printer.
SCANNER_SERIAL_NUMBER	VARCHAR(50)	Serial number of the scanner of the printer
TIME_ZONE	VARCHAR(255)	Id for different time zone supported by the printer.
MODULAR_SERIAL_NUMBER	VARCHAR(255)	Modular serial number.

*This is required for Microsoft SQL Server.

3.1.4 PRINTER_CURRENT_STATUS

This table represents status conditions that exist on printers at the point of time, when data was collected. There will be a row in this table for each status condition on a given printer, all pointing to the same PRINTER_ID.

Field Name	Data Type	Description
STATUS_ID	BIGINT	Primary key
STATUS_MESSAGE	VARCHAR(255)	The text for this status. for example, "Tray 1 Low"

STATUS_SEVERITY	VARCHAR(255)	The severity of this status. for example, "Warning".
STATUS_TYPE	VARCHAR(255)	The type of this status. for example, "Printer" or "Supply".
PRINTER_ID	BIGINT	Foreign key to NETWORK_PRINTER.PRINTER_ID

3.1.5 PRINTER_ESF_APPS

This table represents eSF applications installed on printers when data was collected. There will be a row in this table for each eSF application, currently installed on a given printer, all pointing to the same PRINTER_ID.

Field Name	Data Type	Description
APPLICATION_ID	BIGINT	Primary key
NAME	VARCHAR(255)	Application name
STATE	VARCHAR(255)	Current state
VERSION	VARCHAR(255)	Current version
PRINTER_ID	BIGINT	Foreign key to NETWORK_PRINTER.PRINTER_ID

3.1.6 PRINTER_INPUT_OPTIONS

This table represents input options installed on printers when data was collected. There will be a row in this table for each input option currently installed on a given printer, all pointing to the same PRINTER_ID.

Field Name	Data Type	Description
INPUT_OPTION_ID	BIGINT	Primary key
NAME	VARCHAR(255)	Name of the input option (for example, Multipurpose Tray)
PRINTER_ID	BIGINT	Foreign key to NETWORK_PRINTER.PRINTER_ID

3.1.7 PRINTER_INPUT_TRAYS

This table represents input trays associated with an input option. There will be a row in this table for each input tray associated with a given input option, all pointing to the same INPUT_OPTION_ID.

Field Name	Data Type	Description
INPUT_OPTION_ID	BIGINT	Foreign key to PRINTER_INPUT_OPTIONS.INPUT_OPTION_ID
CAPACITY	BIGINT	The maximum number of sheets this tray can hold

FEED_TYPE	VARCHAR(255)	Manual or Auto
FORM_SIZE	VARCHAR(255)	Current paper size (for example, Letter)
FORM_TYPE	VARCHAR(255)	Current paper type (for example, Plain Paper)
TYPE	VARCHAR(255)	For example, Multi-purpose Feeder

3.1.8 PRINTER_OPTIONS

This table represents options installed on printers when data was collected. There will be a row in this table for each option currently installed on a given printer, all pointing to the same PRINTER_ID. Typically, this will be a storage device.

Field Name	Data Type	Description
OPTION_ID	BIGINT	Primary key
FREESPACE_	BIGINT	Amount of space remaining
NAME	VARCHAR(255)	For example, DISK
SIZE_	BIGINT	Total amount of space
PRINTER_ID	BIGINT	Foreign key to NETWORK_PRINTER.PRINTER_ID

3.1.9 PRINTER_OUTPUT_BINS

This table represents output bins associated with an output option. There will be a row in this table for each output bin associated with a given output option, all pointing to the same OUTPUT_OPTION_ID.

Field Name	Data Type	Description
OUTPUT_OPTION_ID	BIGINT	Foreign key to PRINTER_OUTPUT_OPTIONS.OUTPUT_OPTION_ID
BINDING	SMALLINT/TINYINT*	Flag indicating whether this bin supports binding
BURSTING	SMALLINT/TINYINT*	Flag indicating whether this bin supports bursting
CAPACITY	BIGINT	The maximum number of sheets this bin can hold
COLLATION	SMALLINT/TINYINT*	Flag indicating whether this bin supports collation
FACE_DOWN	SMALLINT/TINYINT*	Flag indicating whether this bin supports face down
FACE_UP	SMALLINT/TINYINT*	Flag indicating whether this bin supports face up

LEVEL_SENSING	SMALLINT/ TINYINT*	Flag indicating whether this bin supports level sensing
PUNCHING	SMALLINT/ TINYINT*	Flag indicating whether this bin supports hole punching
SECURITY	SMALLINT/ TINYINT*	Flag indicating whether this bin supports security
SEPARATION	SMALLINT/ TINYINT*	Flag indicating whether this bin supports separation
STITCHING	SMALLINT/ TINYINT*	Flag indicating whether this bin supports stitching
TYPE	VARCHAR(255)	For example, Standard Bin, Bin 5, etc.

*This is required for Microsoft SQL Server.

3.1.10 PRINTER_OUTPUT_OPTIONS

This table represents output options installed on printers. There will be a row in this table for each output option currently installed on a given printer, all pointing to the same PRINTER_ID.

Field Name	Data Type	Description
OUTPUT_OPTION_ID	BIGINT	Primary key
NAME	VARCHAR(255)	Name of the option (for example, Integrated Hopper, Mailbox, Finisher)
PRINTER_ID	BIGINT	Foreign key to NETWORK_PRINTER.PRINTER_ID

3.1.11 PRINTER_STATISTICS

This table contains information gathered from a printer's "Meters & Counters" data. Each row represents data for an individual printer. Depending on the model of printer with which the record is associated, not all columns will apply.

Field	Type	Description
STATISTICS_ID	BIGINT	Primary key
COVG_LAST_JOB_BLACK	BIGINT	Black toner coverage of the last job
COVG_LIFETIME_BLACK	BIGINT	Black toner coverage of lifetime jobs
CART_PAGES_PRINT_BLACK	BIGINT	Count of the pages printed that used this black toner cartridge
BLACK_TONER_LEVEL	VARCHAR(255)	Current supply level of the black toner cartridge
PHOTO_COND_LEVEL_K	VARCHAR(255)	Current supply level of the photo conductor (Black)

Field	Type	Description
BLANK_SAFE_SIDE_COPY	BIGINT	Count of the blank safe sides from a Copy
BLANK_SAFE_SIDE_FAX	BIGINT	Count of the blank safe sides from a Fax
BLANK_SAFE_SIDE_PRINT	BIGINT	Count of the blank safe sides from a Print
PAPER_CHANGE	BIGINT	Count of paper change events
COVER_OPEN	BIGINT	Count of cover open events
COVG_LAST_JOB_CYAN	BIGINT	Cyan toner coverage of the last job
COVG_LIFETIME_CYAN	BIGINT	Cyan toner coverage of lifetime jobs
CART_PAGES_PRINT_CYAN	BIGINT	Count of the pages printed which used this cyan toner cartridge
CYAN_TONER_LEVEL	VARCHAR(255)	Current supply level of the cyan toner cartridge
CYAN_TONER_STATUS	VARCHAR(255)	Supply status for the cyan cartridge (for example, Intermediate)
YELLOW_TONER_STATUS	VARCHAR(255)	Supply status for the yellow cartridge (for example, Intermediate)
MAGENTA_TONER_STATUS	VARCHAR(255)	Supply status for the magenta cartridge (for example, Intermediate)
BLACK_TONER_STATUS	VARCHAR(255)	Supply status for the black cartridge (for example, Intermediate)
PHOTO_COND_LEVEL_C	VARCHAR(255)	Current supply level of the photoconductor (Cyan)
DEVICE_INSTALL_DATE	TIMESTAMP	TIMESTAMP of when the printer was first installed
FUSER_CURRENT_LEVEL	VARCHAR(255)	Current supply level of the fuser
IMG_SAFE_SIDE_COPY	BIGINT	Imaged printed sides—copy
IMG_SAFE_SIDE_FAX	BIGINT	Imaged printed sides—fax
IMG_SAFE_SIDE_PRINT	BIGINT	Imaged printed sides—print
LAST_FAX_JOB_DATE	TIMESTAMP	TIMESTAMP of the last fax job
LAST_PRINTED_JOB_DATE	TIMESTAMP	TIMESTAMP of the last print job
LAST_SCAN_JOB_DATE	TIMESTAMP	TIMESTAMP of the last scan job
COVG_LAST_JOB_MAGENTA	BIGINT	Magenta toner coverage of the last job
COVG_LIFETIME_MAGENTA	BIGINT	Magenta toner coverage of lifetime jobs
CART_PAGES_PRINT_MAGENTA	BIGINT	Count of the pages printed which used this magenta toner cartridge

Field	Type	Description
MAGENTA_TONER_LEVEL	VARCHAR(255)	Current supply level of the magenta toner cartridge
PHOTO_COND_LEVEL_M	VARCHAR(255)	Current supply level of the photoconductor (Magenta)
MAINT_KIT_LEVEL	VARCHAR(255)	Current supply level of the maintenance kit
MEDIA_SIZE_TYPE_MONO_SIDE_SAFE	BIGINT	Mono printed sides (safe)
MEDIA_SIZE_TYPE_COLOR_SIDE_SAFE	BIGINT	Color printed sides (safe)
SUPPLY_EVENTS	BIGINT	Count of “other” supply events
PAPER_JAMS	BIGINT	Count of paper jam events
PAPER_LOAD	BIGINT	Count of paper load events
PRINT_SHEET_USE_PICKED	BIGINT	Printed sheets (picked)
PRINT_SIDE_USE_PICKED	BIGINT	Printed sides (picked)
POR	BIGINT	Count of power-ons
PRINT_AND_HOLD_JOB	BIGINT	Count of print-and-hold jobs
SAFE_SHT_COPY	BIGINT	Printed sheets (safe)—copy
SAFE_SHT_FAX	BIGINT	Printed sheets (safe)—fax
SAFE_SHT_PRINT	BIGINT	Printed sheets (safe) —print
SCAN_PAPER_JAMS	BIGINT	Count of scanner jams
PRINTED_FROM_PRINT_AND_HOLD	BIGINT	Count of printed print-and-hold jobs
PRINTED_FROM_USB	BIGINT	Count of prints from USB
TRANS_BELT_LEVEL	VARCHAR(255)	Current supply level of the transfer belt
USB_DIRECT_JOB	BIGINT	Count of USB insertions
WASTE_TONER_LEVEL	VARCHAR(255)	Current supply level of the waste toner box
COVG_LAST_JOB_YELLOW	BIGINT	Yellow toner coverage of the last job
COVG_LIFETIME_YELLOW	BIGINT	Yellow toner coverage of lifetime jobs
CART_PAGES_PRINT_YELLOW	BIGINT	Count of the pages printed which used this yellow toner cartridge
YELLOW_TONER_LEVEL	VARCHAR(255)	Current supply level of the yellow toner cartridge

Field	Type	Description
PHOTO_COND_LEVEL_Y	VARCHAR(255)	Current level of the photoconductor (Yellow)
IMG_SAFE_SIDE_PRINT_MONO	BIGINT	Imaged mono printed sides (safe)—print
IMG_SAFE_SIDE_PRINT_COLOR	BIGINT	Imaged color printed sides (safe)—print
IMG_SAFE_SIDE_COPY_MONO	BIGINT	Imaged mono printed sides (safe)—copy
IMG_SAFE_SIDE_COPY_COLOR	BIGINT	Imaged color printed sides (safe)—copy
IMG_SAFE_SIDE_FAX_MONO	BIGINT	Imaged mono printed sides (safe)—fax
IMG_SAFE_SIDE_FAX_COLOR	BIGINT	Imaged color printed sides (safe)—fax
FAX_JOB_RECV	BIGINT	Received fax jobs
FAX_JOB_SENT	BIGINT	Sent fax jobs
FAX_PAGE_RECV	BIGINT	Received fax pages
FAX_PAGE_SENT	BIGINT	Sent fax pages
SCAN_COPY	BIGINT	Scans from copy
SCAN_FAX	BIGINT	Scans from fax
SCAN_LOCAL	BIGINT	Scan local
SCAN_NET	BIGINT	Scan to network
SCAN_FLAT	BIGINT	Scans from the flatbed
SCAN_ADF_SIMPLEX	BIGINT	Scans from the ADF (simplex)
SCAN_ADF_DUPLEX	BIGINT	Scans from the ADF (duplex)
SCAN_USB_DIRECT	BIGINT	Scans directly to USB
USB_DIRECT_INSERT	BIGINT	Count of USB insertions
CART_INST_DATE_CYAN	TIMESTAMP	TIMESTAMP of when this cyan cartridge was installed
CART_INST_DATE_YELLOW	TIMESTAMP	TIMESTAMP of when this yellow cartridge was installed
CART_INST_DATE_MAGENTA	TIMESTAMP	TIMESTAMP of when this magenta cartridge was installed
CART_INST_DATE_BLACK	TIMESTAMP	TIMESTAMP of when this black cartridge was installed
PRINTER_ID	BIGINT	Foreign key back to NETWORK_PRINTER.PRINTER_ID

Field	Type	Description
MAINT_KIT_STATUS_100K	VARCHAR(255)	100K Maintenance Kit level
MAINT_KIT_STATUS_160K	VARCHAR(255)	160K Maintenance Kit level
MAINT_KIT_STATUS_200K	VARCHAR(255)	200K Maintenance Kit level
MAINT_KIT_STATUS_300K	VARCHAR(255)	300K Maintenance Kit level
MAINT_KIT_STATUS_320K	VARCHAR(255)	320K Maintenance Kit level
MAINT_KIT_STATUS_480K	VARCHAR(255)	480K Maintenance Kit level
MAINT_KIT_STATUS_600K	VARCHAR(255)	600K Maintenance Kit level

3.1.12 PRINTER_SUPPLIES

This table represents supplies in printers. There will be a row in this table for each supply in a given printer, all pointing to the same PRINTER_ID. Depending on the TYPE, not all columns will apply.

Field	Data	Description
SUPPLY_ID	BIGINT	Primary key
CAPACITY	BIGINT	Maximum sheet capacity of the supply
COLOR	VARCHAR(255)	For example, Black and Cyan (Can be NULL)
NAME	VARCHAR(255)	For example, Black Toner, Fuser, Waste Bottle
SMART_CARTRIDGE_PREBATE	SMALLINT/ TINYINT*	Flag indicating whether this supply is a smart cartridge prebate
SMART_CARTRIDGE_REFILLED	SMALLINT/ TINYINT*	Flag indicating whether this supply is a smart cartridge refill
SMART_CARTRIDGE_SERIAL_NUMBER	VARCHAR(255)	Smart cartridge serial number
TYPE	VARCHAR(255)	For example, Toner, Transfer Belt, Fuser, Container, Image Unit
PRINTER_ID	BIGINT	Foreign key to NETWORK_PRINTER.PRINTER_ID
PERCENT_FULL	BIGINT	Calculated percent of the supply remaining

*This is required for Microsoft SQL Server.

3.1.13 CHANGED_SETTINGS

This table contains information about settings that changed between the last two Audits.

Field Name	Data Type	Description
ID	BIGINT	Primary key
CI_ID	BIGINT	Refers to CONFIG_ITEM.ID
SETTING_NAME	VARCHAR(255)	The name of the setting that changed
CHANGE_TYPE	VARCHAR(255)	One of: ADD, UPDATE, REMOVE

3.1.14 PRINTER_PORTS

This table contains information about the status of the printer TCP/UDP ports.

Field Name	Data Type	Description
PRINTER_PORTS_ID	BIGINT	Primary key
PRINTER_ID	BIGINT	Refers to PRINTER.ID
TCP21	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP69	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP79	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP80	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP137	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP161	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP162	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP515	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP631	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP5001	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP5353	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP8000	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP9100	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP9200	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP9200	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP9300	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP9301	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP9302	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP9400	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP9500	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE

TCP9501	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP9600	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP9700	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP9000	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP5000	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP443	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP4000	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
UDP6100	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP6100	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP65002	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP65004	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP65004	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP65001	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TCP65003	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE

3.1.15 PRINTER_SECURITY-OPTIONS

This table contains information related to the security details of the printer.

Field Name	Data Type	Description
PRINTER_SECURITY_ID	BIGINT	Primary key
PRINTER_ID	BIGINT	Refers to PRINTER.ID
OWASP_CIPHER_CATEGORY	VARCHAR(500)	The list of cipher categories supported by the device
TLS10	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE
TLS11	VARCHAR(255)	One of: OFF, ON, UNKNOWN, NONE

3.2 Keywords

The following tables deal with MVE keywords.

3.2.1 ASSIGNED_KEYWORDS

This table states the keywords assigned to their respective CIs/printers.

Field Name	Data Type	Description
KEYWORD_ID	BIGINT	Composite primary key; foreign key to KEYWORD.KEYWORD_ID

CI_ID	BIGINT	Composite primary key; foreign key to CONFIGURATION_ITEM.CI_ID
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3.2.2 KEYWORD

This table lists all the keywords defined in the system.

Field Name	Data Type	Description
KEYWORD_ID	BIGINT	Primary key
KEYWORD_VALUE	VARCHAR(255)	The keyword name
CATEGORY_ID	BIGINT	Foreign key to KEYWORD_CATEGORY.CATEGORY_ID

3.2.3 KEYWORD_CATEGORY

This table lists all the categories defined in the system. It is used for grouping keywords together.

Field Name	Data Type	Description
CATEGORY_ID	BIGINT	Primary key
CATEGORY_VALUE	VARCHAR(255)	The category name

3.3 Configurations

The following tables deal with MVE's configurations.

3.3.1 CONFIGURATION

Defines configuration at the highest level, including the name, model, and whether it can be assigned.

Field Name	Data Type	Description
CONFIGURATION_ID	BIGINT	Primary key
SUPPORTED_MODEL		Dropped
CONFIGURATION_NAME	VARCHAR(255)	Configuration name
ASSIGNABLE	SMALLINT/ TINYINT*	Flag indicating whether the configuration is currently assignable
DESCRIPTION	VARCHAR(4000)	A user entered description of the configuration
LAST_MODIFIED	TIMESTAMP	When the configuration was last edited
MANAGING_DEV_CERTIFICATE	BOOLEAN	Default value Boolean. Indicates whether this configuration manages device certificate automatically

*This is required for Microsoft SQL Server.

3.3.2 CONFIGURATION_COMPONENT

This table represents one component of a configuration.

Field Name	Data Type	Description
CONFIGURATION_COMPONENT_ID	BIGINT	Primary key
COMPONENT_TYPE	VARCHAR(255)	One of: DEVICE_SETTINGS, SECURITY_CAESAR1, SECURITY_CAESAR2, ESF, FIRMWARE
CREDENTIAL_PASSWORD	BLOB SUB_TYPE 0	Credential's encrypted password, if set
CREDENTIAL_PIN	BLOB SUB_TYPE 0	Credential's encrypted PIN, if set
CREDENTIAL_REALM	VARCHAR(255)	Credential's realm, if set
CREDENTIAL_USERNAME	VARCHAR(255)	Credential's username, if set
COMPONENT_NAME	VARCHAR(255)	Component name
SUPPORTED_MODEL		Dropped
LICENSE_TYPE	VARCHAR(255)	One of: PRODUCTION, TRIAL, FACTORY

Field Name	Data Type	Description
LOGIN_METHOD		
MERGE_DATA_PATH		File location of a variable settings file.
FLASH_FILE_SHA1	VARCHAR(255)	The SHA1 hash of the flash file for a firmware component
LOGIN_METHOD_NAME	VARCHAR(256)	If the LOGIN_METHOD is either LDAP or LDAP+GSSAPI this is the name of the particular login method
DESCRIPTION	VARCHAR(4000)	Contains the description if added in a component
LAST_MODIFIED	TIMESTAMP	Contains the last modified time stamp
ASSIGNABLE	Boolean	Is true if assigned to a printer; otherwise false
PRE_POPULATED	BOOLEAN	Added to identify pre-populated Advanced Security Components

3.3.3 CONFIGURATION_COMPONENTS

This table contains information about different components with respect to different configuration if selected.

Field Name	Data Type	Description
CONFIGURATION_ID	BIGINT	The foreign key to CONFIGURATION.CONFIGURATION_ID
CONFIGURATION_COMPONENT_ID	BIGINT	The foreign key to CONFIGURATION_COMPONENT.CONFIGURATION_COMPONENT_ID
COMPONENT_TYPE	VARCHAR(255)	Added to discriminate among Device Setting Component and other eight Components

3.3.4 ASSIGNED_CONFIGURATIONS

This table tells which configurations are assigned to which CIs/printers.

Field Name	Data Type	Description
CI_ID	BIGINT	Composite primary key; foreign key back to CONFIGURATION_ITEM.CI_ID
CONFIGURATION_ID	BIGINT	Composite primary key; foreign key back to CONFIGURATION.CONFIGURATION_ID
COMPLIANCE_STATE	VARCHAR(255)	Current conformance state for this configuration
LAST_COMPLIANCE_CHECK	TIMESTAMP	When the last conformance check was run

3.3.5 FAILED_COMPONENT

This table includes all components that have a setting that is out of conformance.

Field Name	Data Type	Description
FAILED_COMPONENT_ID	BIGINT	Primary key
CI_ID	BIGINT	Foreign key back to ASSIGNED_CONFIGURATIONS.CI_ID
CONFIGURATION_ID	BIGINT not null	Foreign key back to ASSIGNED_CONFIGURATIONS.CONFIGURATION_ID
COMPONENT_TYPE	VARCHAR(255)	Type of the failed component
COMPONENT_NAME	VARCHAR(255)	Name of the failed component

3.3.6 FAILED_COMPONENT_SETTINGS

This table includes all settings that are out of conformance and their values.

Field Name	Data Type	Description
TYPE	SMALLINT/ TINYINT*, Default 0	Added to discriminate conformance failure reasons among Discrepancy, Inapplicable, Unsupported, Resource not in Library, and Unable to Merge Token Settings
FAILED_COMPONENT_ID	BIGINT not null	Foreign key back to FAILED_COMPONENT.FAILED_COMPONENT_ID
SETTING_NAME	VARCHAR(255)	Name of the failed setting
PRINTER_VALUE	dropNotNullConstraint	Can add null values now
COMPONENT_VALUE	dropNotNullConstraint	Can add null values now

*This is required for Microsoft SQL Server.

3.3.7 FLASHFILE

This table represents information about MVE Firmware library resources.

Field Name	Data Type	Description
ID	BIGINT	Primary key
FILENAME	VARCHAR(256)	The file name/location within the MVE repository
SHA1	VARCHAR(255)	The SHA1 hash of the flash file
DISPLAY_NAME	VARCHAR(255)	A version identifier of the flash file
DATE_IMPORTED	TIMESTAMP	Date on which the flash file was imported
DESCRIPTION	VARCHAR(255)	Description of the flash file

3.3.8 FLASH_NET_IDS

This table stores the NETFLASH ID found at the top of each flash file in the Resource Library.

Field Name	Data Type	Description
FLASHNETID	BIGINT	Primary key
NET_ID	VARCHAR(255)	The NETFLASH ID

3.3.9 CERTIFICATES

This table represents information about the MVE CA Certificate library resources.

Field Name	Data Type	Description
CERTIFICATE_ID	BIGINT	Primary key
NAME	VARCHAR(255)	The user friendly name of a CA Certificate
PEM_CERTIFICATE	BLOB	The PEM representation of a CA Certificate
DATE_IMPORTED	TIMESTAMP	The date the CA Certificate was imported into MVE
PEM_CERTIFICATE_SHA2	VARCHAR (64)	SHA2 hash of this CA Certificate
DESCRIPTION	VARCHAR (255)	Description of the CA Certificate

3.3.10 CERTIFICATE_COMP_CERTIFICATES

This table links a Certificate in the Resource Library to a Configuration Component and thus to a Configuration.

Field Name	Data Type	Description
CONFIGURATION_COMPONENT_ID	BIGINT	Foreign key back to CONFIGURATION_COMPONENT.CONFIGURATION_COMPONENT_ID
CERTIFICATE_ID	BIGINT	Foreign Key back to CERTIFICATES.CERTIFICATE_ID

3.3.11 COMPONENT_SETTINGS

This table represents settings contained within a given configuration component. There will be a row in this table for each setting associated with the configuration component, all pointing to the same CONFIGURATION_COMPONENT.CONFIGURATION_COMPONENT_ID. The values are encrypted and not available outside of MVE.

Field Name	Data Type	Description
SETTING_ID	BIGINT	Primary key
SETTING_NAME	VARCHAR(255)	Name of the setting
SETTING_VALUE	VARCHAR(1280)	Encrypted setting value
CONFIGURATION_COMPONENT_ID	BIGINT	Foreign key to CONFIGURATION_COMPONENT.CONFIGURATION_COMPONENT_ID
DISCRIMINATOR	VARCHAR(255)	One of: SIMPLE_SETTING or TABULAR_SETTING
TABULAR_SETTING_VALUE_ID	BIGINT	Foreign key to COMPONENT_TAB_SETTING_VALUE.TABULAR_SETTING_VALUE_ID

3.3.12 COMPONENT_TAB_TABLE

This table represents Color Print Permission tables included in configurations.

Field Name	Data Type	Description
TABLE_ID	BIGINT	Primary key
TABLE_TYPE	VARCHAR(255)	One of either HOST_TABLE or USER_TABLE

3.3.13 COMPONENT_TAB_ROW

This table represents a row from the Color Print Permissions tables. Values are encrypted and cannot be used outside MVE.

Field Name	Data Type	Description
TABLE_ID	BIGINT	Foreign key to COMPONENT_TAB_TABLE.TABLE_ID
HOST_NAME	VARCHAR(255)	Value of the host name setting in the hosts table
USER_NAME	VARCHAR(255)	Value of the user name setting in the users table
ALLOWED_TO_PRINT_COLOR	SMALLINT/TINYINT*	Value of the Allow Color Printing setting for both host and user tables
USER_PERMISSION_OVERRIDDEN	SMALLINT/TINYINT*	The value of the Overrides User Permission setting in the host table

*This is required for Microsoft SQL Server.

3.3.14 COMPONENT_TAB_SETTING_VALUE

This table links Color Print Permissions tables to components and thus to configurations.

Field Name	Data Type	Description
TABULAR_SETTING_VALUE_ID	BIGINT	Foreign key to COMPONENT_SETTINGS.TABULAR_SETTING_VALUE_ID
TABLE_ID	BIGINT	Foreign key to COMPONENT_TAB_TABLE.TABLE_ID

3.3.15 CC_SUPPORTED_MODEL_BACKUP

Field Name	Data Type	Description
ID	BIGINT	Primary key
SUPPORTED_MODEL	VARCHAR(255)	To create backup from CONFIGURATION and CONFIGURATION_COMPONENT for Device Setting Components

3.3.16 ESF_COMP_PRODUCTS

Field Name	Data Type	Description
CONFIGURATION_COMPONENT_ID	BIGINT	Foreign key references Table: CONFIGURATION_COMPONENT Column: CONFIGURATION_COMPONENT_ID
PART_NUMBER	VARCHAR(255)	Product Part Number of Solution Component

3.3.17 VCCFILE

Field Name	Data Type	Description
ID	BIGINT	Primary key
FILENAME	VARCHAR(255)	Uploaded file name
DISPLAY_NAME	VARCHAR(255)	Name displayed in MVE
DATE_IMPORTED	TIMESTAMP	Timestamp when file was uploaded
SHA1	VARCHAR(255)	File content hash
DESCRIPTION	VARCHAR(255)	Description of the VCC File

3.3.18 UCFFILE

Field Name	Data Type	Description
ID	BIGINT	Primary key
FILENAME	VARCHAR(255)	Uploaded file name
DISPLAY_NAME	VARCHAR(255)	Name displayed in MVE
DATE_IMPORTED	TIMESTAMP	Timestamp when file was uploaded
SHA1	VARCHAR(255)	File content hash
DESCRIPTION	VARCHAR(255)	Description of the UCF File

3.3.19 UCF_VCC_RESOURCE_FILES

Field Name	Data Type	Description
RESOURCE_ID	BIGINT	Primary key
SHA1	VARCHAR(255)	File content hash
RESOURCE_TYPE	VARCHAR(255)	Type of Resource. One of UCF_FILE, VCC_FILE, APP_FLS
CONFIGURATION_COMPONENT_ID	VARCHAR(255)	Foreign key of ID of CONFIGURATION_COMPONENT table

3.4 Discovery profiles

The following tables are used to track MVE's discovery profiles.

3.4.1 DISCOVERY_PROFILE

This table represents the heart of MVE's discovery profile.

Field Name	Data Type	Description
ID	BIGINT	Primary key
NAME	VARCHAR(255)	User-supplied name for the profile
RETRIES	INTEGER	Number of times to retry a particular communication attempt with a printer
SNMP_READ_COMMUNITY_NAME	VARCHAR(255)	SNMP Community Name to use when reading
TIMEOUT	BIGINT	Number of milliseconds to wait for a particular communication attempt with a printer to succeed
SNMP_USERNAME	VARCHAR(32)	Username for SNMP communication
SNMP_PASSWORD	VARCHAR(32)	Password for SNMP communication
SNMP_MIN_AUTHENTICATION_LEVEL	VARCHAR(255)	Minimum authentication level for SNMP
SNMP_AUTHENTICATION_HASH	VARCHAR(50)	Hash used for SNMP authentication
SNMP_PRIVACY_ALGORITHM	VARCHAR(50)	Algorithm used for SNMP privacy

3.4.2 DISCOVERY_PROFILE_CI

This table contains the CI-specific pieces of the discovery profile.

Field Name	Data Type	Description
CI_DP_ID	BIGINT	Primary key; foreign key back to DISCOVERY_PROFILE.ID
AUTOMANAGE	SMALLINT/ TINYINT*	Flag indicating whether CIs discovered using this profile should be automatically managed
DESCRIPTION	VARCHAR(4000)	User provided description of the discovery profile.
LAST_RUN	TIMESTAMP	Time when profile was last run
CREDENTIAL_USERNAME	VARCHAR(255)	Credential's user name, if set
CREDENTIAL_REALM	VARCHAR(64)	Credential's realm, if set

Field Name	Data Type	Description
LOGIN_METHOD	VARCHAR(256)	The authentication method used to log in to the printer.
LOGIN_METHOD_NAME	VARCHAR(256)	If the LOGIN_METHOD is either LDAP or LDAP+GSSAPI this is the name of the particular authentication method.
CREDENTIAL_PASSWORD	BLOB	This value is encrypted and not available for use outside MVE.
CREDENTIAL_PIN	BLOB	This value is encrypted and not available for use outside MVE.

*This is required for Microsoft SQL Server.

3.4.3 EXCLUDE_PROFILE_ITEM

This table represents the “exclude” list for a profile. Each excluded item will be a row in this table.

Field Name	Data Type	Description
DISCOVERY_PROFILE_ID	BIGINT	Composite primary key; foreign key back to DISCOVERY_PROFILE.ID
VALUE_	VARCHAR(255)	Composite primary key. This defines what to exclude.

3.4.4 INCLUDE_PROFILE_ITEM

This table represents the “include” list for a profile. Each included item will be a row in this table.

Field Name	Data Type	Description
DISCOVERY_PROFILE_ID	BIGINT	Composite primary key; foreign key back to DISCOVERY_PROFILE.ID
VALUE_	VARCHAR(255)	Composite primary key. This defines what to include.

3.4.5 DISCOVERY_PROFILE_MODEL_CONFIG

This table represents the Assign Configurations portion of a discovery profile.

Field Name	Data Type	Description
ID	BIGINT	Primary key
MODEL	VARCHAR(255)	The model name of the printers to assign the configuration to.

DISCOVERY_PROFILE_ID	BIGINT	Foreign key to DISCOVERY_PROFILE.ID
CI_CONFIGURATION_ID	BIGINT	Foreign key to CONFIGURATION.CONFIGURATION_ID

3.5 ESF

3.5.1 ESF_APPLICATION

This table contains all the eSF applications in all of the eSF deployable packages. There may be many eSF applications in each deployable package.

Field	Type	Description
ESF_APP_ID	BIGINT	Primary key
ESF_DP_ID	BIGINT	Foreign key back to ESF_DEPLOYABLE_PACKAGE.ESF_DP_ID
APP_ID	VARCHAR(255)	Application ID of the eSF applications
VERSION	VARCHAR(255)	ESF Application version
DESCRIPTION_URI	VARCHAR(255)	URI to description of ESF Application
FLS_URI	VARCHAR(255)	URI to Flash file

3.5.2 ESF_APPLICATION_LOCALE

This table contains the name and description for each eSF application in all languages supported by MVE.

Field	Type	Description
ESF_APP_LOCALE_ID	BIGINT	Primary key
ESF_APP_ID	BIGINT	Foreign key to ESF_APPLICATION.ESF_APP_ID
LOCALE	VARCHAR(255)	Two character language code.
NAME	VARCHAR(255)	Name of the eSF application in the language indicated by LOCALE.
DESCRIPTION	VARCHAR(510)	Description of the eSF application in the language indicated by LOCALE.

3.5.3 ESF_COMP_DEPLOYABLE_PACKAGE

This table contains one row for each deployable package in use by an MVE configuration.

Field	Type	Description
ESF_COMPONENT_ID	BIGINT	The foreign key to CONFIGURATION_COMPONENT.CONFIGURATION_COMPONENT_ID
ESF_DP_ID	VARCHAR(255)	The foreign key to ESF_DEPLOYABLE_PACKAGE.ESF_DP_ID

3.5.4 ESF_DEPLOYABLE_PACKAGE

This table represents all the deployable packages uploaded to the MVE library.

Field	Type	Description
ESF_DP_ID	BIGINT	Primary key
NAME	VARCHAR(255)	Name of the deployable package
PART_NUMBER	VARCHAR(255)	Part number of the deployable package
PART_REVISION	VARCHAR(255)	Part revision of the deployable package
LICENSE_REQUIRED	SMALLINT/ TINYINT*	Flag indicating whether a license is required for the deployable package
URI	VARCHAR(255)	URI of the deployable package
DATE_IMPORTED	TIMESTAMP	Date the deployable package was imported
VERSION	VARCHAR(255)	Version of the deployable package
DESCRIPTION	VARCHAR(255)	Description of the deployable package

*This is required for Microsoft SQL Server.

3.5.5 ESF_DEPLOYABLE_PACKAGE_LOCALE

This table contains the name and description for each deployable package in all languages supported by the MVE.

Field	Type	Description
ESF_DP_LOCALE_ID	BIGINT	Primary key
ESF_DP_ID	BIGINT	Foreign key to ESF_DEPLOYABLE_PACKAGE.ESF_DP_ID
LOCALE	VARCHAR(255)	Two character language code.
NAME	VARCHAR(255)	Name of the deployable package in the language indicated by LOCALE.
DESCRIPTION	VARCHAR(2048)	Increased Description length from 510 to 2048

3.5.6 ESF_DP_SUPPORTED MODELS

This table contains one row for each model supported by a deployable package in the MVE library.

Field	Type	Description
ESF_DP_ID	BIGINT	Foreign key back to ESF_DEPLOYABLE_PACKAGE.ESF_DP_ID
SUPPORTED_MODEL	VARCHAR(255)	Model name of printer supported by the deployable package

3.5.7 ESF_LICENSE

This table represents the licenses for eSF applications available in the MVE library.

Field	Type	Description
ESF_LICENSE_ID	BIGINT	Primary key
PRINTER_SERIAL	VARCHAR(255)	Serial number of the printer the license is tied to
PART_NUMBER	VARCHAR(255)	Part number of the package the license is tied to
PART_REVISION	VARCHAR(255)	Part revision of the package the license is tied to
LICENSE_TYPE	VARCHAR(255)	One of TRIAL, PRODUCTION
FILE_NAME	VARCHAR(255)	Filename of the license binary
DEPLOYED	SMALLINT/TINYINT*	Flag indicating whether the license has been deployed or not

*This is required for Microsoft SQL Server.

3.5.8 RAWESFAPPFILE

This table represents the raw eSF application file details available in the MVE library.

Field	Type	Description
ID	BIGINT	Primary key
FILENAME	VARCHAR(255)	Name of the package file

DISPLAY_NAME	VARCHAR(255)	Display name of the package file
DATE_IMPORTED	TIMESTAMP	Timestamp of when the package is imported
SHA1	VARCHAR(255)	SHA1 hash of the package
DESCRIPTION	VARCHAR(255)	Description of the package
APP_ID	VARCHAR(255)	Application ID of the package
VERSION	VARCHAR(255)	Version of the package

3.5.9 APP_FLS_RESOURCE_FILES

This table represents the association of eSF applications file available in the MVE library with configuration.

Field	Type	Description
RESOURCE_ID	BIGINT	Primary key
SHA1	VARCHAR(255)	SHA1 hash of the package
RESOURCE_TYPE	VARCHAR(255)	Type of the Resource File. One of: UCF_FILE, VCC_FILE, APP_FLS
CONFIGURATION_COMPONENT_ID	BIGINT	Foreign key with ID column of CONFIGURATION_COMPONENT

3.6 Certificate management

The following tables deal with MVE's list of certifications to be verified.

3.6.1 ENROLLMENT_STATUS

The following table lists down data of the issued certificates.

Field Name	Data Type	Description
ENROLLMENT_STATUS_ID	BIGINT	Primary key
CERTIFICATE_ENROL_STATUS	VARCHAR(255)	Certificate enrolment status like Issued, pending, failed
CERT_ENROL_TRANSACTION_ID	VARCHAR(255)	Transaction id for certificate enrolment
CERT_SUBJECT_IDENTITY	VARCHAR(255)	Subject identity of the certificate
CERT_SERIAL_NUMBER	VARCHAR(255)	Serial number of the certificate issued
PRINTER_ID	BIGINT	Reference printer
DEFAULT_CERT_REVISION_NO	VARCHAR(255)	Revision number of the certificate renewed
DEFAULT_CERT_RENEWAL_DATE	VARCHAR(255)	Renewal date of the certificate

CERTIFICATE_FRIENDLY_NAME	VARCHAR(255)	Friendly name of the certificate
CERTIFICATE_USED_FOR	VARCHAR(255)	Association of the named certificate. One of: DEFAULT, HTTPS, WIRELESS, IPSEC, UNASSIGNED

3.6.2 CA_CERT_REVOCATION_COMP_LIST

The following table lists down information about the revoked certificates.

Field Name	Data Type	Description
ID	BIGINT	Unique identifier
SERIAL_NUMBER	VARCHAR(255)	Serial number of the certificate present in the revocation list primary key
CERTIFICATE_SUBJECT	VARCHAR(255)	Subject of the revoked certificate
REVOCATION_DATE	TIMESTAMP	Revocation date
ISSUER	VARCHAR(255)	Issuer of the revoked certificate
REVOCATION_REASON	VARCHAR(255)	Revocation reason

3.6.3 NAMED_CERTIFICATE_SETTINGS

The following table lists down the name and association of named certificate.

Field Name	Data Type	Description
CERT_SETTING_ID	BIGINT	Unique identifier
FRIENDLY_NAME	VARCHAR(255)	Friendly name of the named certificate
CERT_USED_FOR	VARCHAR(255)	Association of the named certificate. One of: DEFAULT, HTTPS, WIRELESS, IPSEC, UNASSIGNED
CONFIGURATION_COMPONENT_ID	BIGINT	Foreign key associated with ID of CONFIGURATION_COMPONENT table

3.6.4 PRINTER_CERTIFICATE

The following table represents the details of named certificate.

Field Name	Data Type	Description
CERTIFICATE_ID	BIGINT	Unique identifier
CERTIFICATE_FRIENDLY_NAME	VARCHAR(255)	Friendly name of the certificate
CERTIFICATE_COMMON_NAME	VARCHAR(255)	Common name of the certificate
CERTIFICATE_ISSUER_NAME	VARCHAR(255)	Name of the Issuer of the certificate

CERTIFICATE_SIGNING_STATUS	VARCHAR(255)	Signing status of the certificate. One of: SIGNED, INVALID_CERT, NO_CA, REVOKED, UNKNOWN
CERTIFICATE_VALID_FROM	TIMESTAMP	Time from when the certificate is valid
CERTIFICATE_VALID_TO	TIMESTAMP	Time up to which the certificate is valid
CERTIFICATE_SIGNATURE	VARCHAR(8190)	Signature of the certificate
CERTIFICATE_SERIAL_NUMBER	VARCHAR(255)	Serial number of the certificate
TYPE	VARCHAR(255)	Type of the certificate. One of: DEFAULT, HTTPS, WIRELESS, IPSEC, UNASSIGNED
PRINTER_ID	BIGINT	Foreign key associated with ID of CONFIGURATION_COMPONENT table

3.6.5 ENROLLED_CERTIFICATE_TYPE

The following table shows the relationship between certificate and enrolment status.

Field Name	Data Type	Description
TYPE_ID	BIGINT	Unique identifier
ENROLLMENT_STATUS_ID	BIGINT	Foreign key of ID column of ENROLLMENT_STATUS table
TYPE	VARCHAR(255)	Type of the certificate. One of: DEFAULT, HTTPS, WIRELESS, IPSEC, UNASSIGNED

3.7 Authentication and authorization

The following tables are used by MVE's user authentication and authorization mechanism.

3.7.1 MASTER_ROLE

This table contains all the roles supported by MVE.

Field Name	Data Type	Description
ID	BIGINT	Primary key
ROLE_NAME	VARCHAR(255)	Name of the role

3.7.2 USERS

This table holds all of MVE's internal user accounts.

Field Name	Data Type	Description
ID	BIGINT	Primary key
USER_NAME	VARCHAR(15)	User-supplied user name
USER_PASS	VARCHAR(1024)	User-supplied password
ENABLED	SMALLINT/ TINYINT*	Flag indicating whether this account is currently enabled
NAME	VARCHAR(255)	User-supplied full name
LAST_LOGIN	TIMESTAMP	When the last login was attempted
LOGIN_ATTEMPT	BIGINT	Current number of attempts made at a successful log in
REFRESH_TOKEN	VARCHAR(1024)	

*This is required for Microsoft SQL Server.

3.7.3 USER_ROLE

This table holds the association of users to roles.

Field Name	Data Type	Description
ID	BIGINT	Primary key
USER_NAME	VARCHAR(15)	Foreign key back to USERS.USER_NAME
ROLE_NAME	VARCHAR(30)	Foreign key back to MASTER_ROLE.ROLE_NAME

3.8 Security settings

The following tables deal with information related to security settings in a configuration. As the Security Configuration information is encrypted for data safety, unavailable outside of MVE and not useful in the scope of this document, the details of these tables will be omitted.

SEC_ACCESS_CONTROL

SEC_AUTH_GROUP

SEC_BUILDING_BLOCK

SEC_BUILDING_BLOCK_SETTINGS

SEC_COMPONENT_MISC_SETTINGS

SEC_INTERNAL_ACCOUNT

SEC_INTERNAL_ACCOUNT_GROUPS

SEC_INTERNAL_ACCOUNT_SETTINGS

SEC_SECURITY_TEMPLATE

SEC_SECURITY_TEMPLATE_BBS

SEC_SECURITY_TEMPLATE_GROUPS

CAESAR2_LOCAL_ACCOUNTS

CAESAR2_MISC_SETTINGS
 CAESAR2_KRB_SETUP
 CAESAR2_COMP_LOCAL_ACCTS
 CAESAR2_LOCAL_ACCOUNT_GROUPS
 CAESAR2_GROUPS
 CAESAR2_COMP_GROUPS
 CAESAR2_GROUP_PERMISSIONS
 CAESAR2_KRB_SETUP_PERMISSIONS
 CAESAR2_COMP_PUBLIC_PERMS
 CAESAR2_LDAP_SETUPS
 CAESAR2_COMP_LDAP_SETUPS
 CAESAR2_LDAP_SEARCH_OBJECTS
 CAESAR2_LDAP_SETUP_GROUPS
 CAESAR2_LDAP_SERVER_INFO
 CAESAR2_LDAP_DEVICE_CREDS
 CAESAR2_SOLUTION_ACCTS
 CAESAR2_LDAP_ADDRESS_BOOKS
 CAESAR2_LDAP_SEARCH_ATTRS
 CAESAR2_COMP_SOLN_ACCTS
 CAESAR2_SOLUTION_ACCT_GROUPS

3.8.1 CAESAR2_MISC_SETTINGS

Field Name	Data Type	Description
MINIMUM_PASSWORD_LENGTH	SMALLINT/ TINYINT*	Added new miscellaneous setting under Advanced Security Component
PROTECTED_FEATURES	VARCHAR(255)	Added new miscellaneous setting under Advanced Security Component
PRINT_PERMISSION_PRINT	VARCHAR(255)	Added new miscellaneous setting under Advanced Security Component
PRINT_PERMISSION_BROWSER	VARCHAR(255)	Added new miscellaneous setting under Advanced Security Component
PRINT_PERMISSION_CONTROL_PANEL	VARCHAR(255)	Added new miscellaneous setting under Advanced Security Component

*This is required for Microsoft SQL Server.

3.9 Views and data export

The following tables deal with information about Views in MVE and fields included in each view.

3.9.1 DATA_EXPORT_TEMPLATE

This table contains information about Views in MVE.

Field Name	Data Type	Description
DATA_EXPORT_ID	BIGINT	Primary key
NAME	VARCHAR(255)	The name of the view
DEFAULT_TEMPLATE	SMALLINT/ TINYINT*	Whether or not this is the default view to be shown when initially logged in, only one view can have this value set to true.
LANGUAGE_CODE	VARCHAR(255)	Deprecated
INCLUDE_HEADER	SMALLINT/ TINYINT*	Deprecated
WRAP_FIELDS	SMALLINT/ TINYINT*	Deprecated
DESCRIPTION	VARCHAR(4000)	The description of the view
IS_SYSTEM	SMALLINT/ TINYINT*	Indicator if this is a system view that cannot be edited or deleted
IDENTIFIER_FIELD	VARCHAR(255)	The identifier field chosen for this view

*This is required for Microsoft SQL Server.

3.9.2 DATA_EXPORT_FIELDS

This table contains the fields included in each view.

Field Name	Data Type	Description
FIELD_INDEX	Integer	Primary key
FIELD	VARCHAR(255)	Name of the field to be included in the view
DATA_EXPORT_ID	BIGINT	Foreign key to DATA_EXPORT_TEMPLATE.DATA_EXPORT_ID

3.10 Event manager

The following tables deal with information related to creating and managing events.

3.10.1 ALERT

This table contains all of the alerts MVE supports.

Field Name	Data Type	Description
ID	BIGINT	Primary key
NAME	VARCHAR(255)	The textual name of the alert. For example "Supply Alert"
SEVERITY	VARCHAR(255)	For example, "ERROR"
CATEGORY	VARCHAR(255)	For example, "SUPPLIES"

3.10.2 ASSIGNED_EVENTS

This table links Events with their assigned Configuration Items.

Field Name	Data Type	Description
CI_ID	BIGINT	Composite primary key; refers to CONFIG_ITEM.CI_ID
EVENT_ID	BIGINT	Composite primary key; refers to EVENT.EVENT_ID
EVENT_REGISTRATION_STATE	VARCHAR(255)	One of: REGISTERED or NOT_REGISTERED

3.10.3 DESTINATION

This table represents an action within the Event Manager module.

Field Name	Data Type	Description
ID	BIGINT	Primary key
DESTINATION_TYPE	VARCHAR(31)	The type, currently either e-mail or shell/command. Depending on the type, not all columns will apply
NAME	VARCHAR(255)	User-supplied name of the destination
EMAIL_BODY	VARCHAR(255)	E-mail body text
EMAIL_CC	VARCHAR(255)	E-mail CC list
EMAIL_FROM	VARCHAR(255)	E-mail From text
EMAIL_SUBJECT	VARCHAR(255)	E-mail Subject text
EMAIL_TO	VARCHAR(255)	E-mail To text
COMMAND_PATH	VARCHAR(255)	Full path to command to execute
COMMAND_PARAMS	VARCHAR(255)	Any parameters to send to the command
DESCRIPTION	VARCHAR(4000)	Optional user description of this action
LAST_MODIFIED	Timestamp	Date when action was last edited

3.10.4 EVENT

This table contains user-created events, which consist of a name, a description, and a collection of alerts to include.

Field Name	Data Type	Description
NAME	VARCHAR(255)	User-supplied name of the event
DESCRIPTION	VARCHAR(255)	User-supplied description of the event
EVENT_ID	BIGINT	Primary key
TRIGGER_DESTINATIONS	VARCHAR(255)	One of: on_active_only or on_active_and_clear
GRACE_PERIOD_ENABLED	SMALLINT/ TINYINT*	Flag indicating whether grace period is enabled
GRACE_PERIOD_MINUTES	INTEGER	Number of minutes for the grace period
LAST_MODIFIED	TIMESTAMP	When event was last edited

*This is required for Microsoft SQL Server.

3.10.5 EVENT_ALERTS

This table links an Event to the collection of alerts it includes.

Field Name	Data Type	Description
EVENT_ID	BIGINT	Composite primary key; refers to EVENT.EVENT_ID
ALERT_ID	BIGINT	Composite primary key; refers to ALERT.ALERT_ID

3.10.6 EVENT_DESTINATIONS

This table links an Event to an associated action.

Field Name	Data Type	Description
EVENT_ID	BIGINT	Composite primary key; refers to EVENT.EVENT_ID
DESTINATION_ID	BIGINT	Composite primary key; refers to DESTINATION.DESTINATION_ID

3.10.7 PRINTER_EVENT_ACTIVE_CONDITIONS

This table represents the active conditions/alerts for printers with events that trigger that condition/alert. Multiple conditions will be multiple rows, all pointing to the same PRINTER_ID.

Field Name	Data Type	Description
ACTIVE_CONDITION_ID	BIGINT	Primary key
LOCATION	VARCHAR(255)	For example, "Tray 1"
MESSAGE	VARCHAR(255)	For example, "Tray Missing"
TYPE	VARCHAR(255)	For example, "Intervention Required"
CI_ID	BIGINT	Refers to CONFIG_ITEM.ID
DESTINATION_TASK_ID	VARCHAR(80)	Foreign key back to SYSTEM_LOG.TASK_ID

3.11 Miscellaneous

The following tables provide useful storage but do not fit into any of the previous table categories.

3.11.1 APPLICATION_SETTINGS

This table currently holds all the MVE system settings. The values are encrypted and not available outside of MVE.

Field Name	Data Type	Description
ID	BIGINT	Primary key
SETTING_KEY	VARCHAR(255)	Preference name
SETTING_VALUE	VARCHAR(8190)	Preference value

3.11.2 BOOKMARK

This table contains all saved searches of MVE. They are currently stored as BLOBs; therefore, they cannot be edited outside of MVE.

Field Name	Data Type	Description
ID	BIGINT	Primary key
DEFAULT_SEARCH	SMALLINT/ TINYINT*	Flag indicating whether this bookmark is one of the defaults that ships with MVE
NAME	VARCHAR(255)	User-supplied name of the bookmark
SEARCH_CRITERIA	BLOB SUB_TYPE 0	The binary representation of the bookmark
DESERIALIZABLE	SMALLINT/ TINYINT*	Indicates whether the saved search is deserializable
DESCRIPTION	VARCHAR(4000)	Optional user entered description of the saved search

*This is required for Microsoft SQL Server.

3.11.3 Liquibase and Hibernate Tables

Liquibase and Hibernate are third party libraries that MVE uses to help maintain the database. The following tables are used by these libraries. They do not contain any significant printer data so their contents will not be detailed here.

- DATABASECHANGELOG
- DATABASECHANGELOGLOCK
- HIBERNATESEQUENCE
- All tables whose names begin with HT_.

3.11.4 SMTP_CONFIGURATION

This table contains configuration for the Simple Mail Transfer Protocol, which allows MVE uses, when necessary, to send e-mails. Currently, there will be only one row.

Field Name	Data Type	Description
ID	BIGINT	Primary key
FROM_ADDRESS	VARCHAR(255)	The e-mail address that sent e-mails should be "from"
LOGIN_ID	VARCHAR(255)	User ID for the SMTP server
LOGIN_PASSWORD	VARCHAR(255)	Password associated with the user ID for the SMTP server
LOGIN_REQ	SMALLINT/ TINYINT*	Flag indicating whether or not the SMTP server requires a login
SMTP_PORT	BIGINT	The port of the SMTP server
SMTP_SERVER	VARCHAR(255)	The hostname/IP of the SMTP server
SMTP_ENABLE	SMALLINT/ TINYINT*	Flag indicating whether SMTP is enabled or not

*This is required for Microsoft SQL Server.

3.11.5 SYSTEM_LOG

This table can get very large. It contains all of the system log messages that are produced as MVE carries out its tasks.

Field Name	Data Type	Description
LOG_ID	BIGINT	Primary key
TIMESTAMP_	TIMESTAMP	Time the message was logged

TASKID	BIGINT	Task instance that generated the message
TASKNAME	VARCHAR(50)	Task that generated the message
LEVEL_	INTEGER	DEBUG, INFO, etc.
MESSAGE_	VARCHAR(8000)	The actual log message
USER_NAME	VARCHAR(255)	User name of the user who performed the action
IP_ADDRESS	VARCHAR(50)	Client IP address

4 Quartz DB

4.1.1 QRTZ_FIRED_TRIGGERS

Field Name	Data Type	Description
SCHED_TIME	BIGINT	Added new column for Scheduled Time

5 Notices

Edition notice

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