
Whitepaper on Database Structure of uniFLOW and Helix PW

Version no: 2.1

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Technologies concerned:


Version 5.1


Version 2.1

Table of Contents

1	Versioning Information	1
2	Structure of uniFLOW Database	3
2.1	Short Description of Each Table in the Database	5
2.2	Details of the Major User Tables	8
2.2.1	AccessControlLists_T.....	8
2.2.2	AllowedCostCenters_T.....	8
2.2.3	ArchivedJobs_T.....	8
2.2.4	ArchiveEntry_T.....	9
2.2.5	ArchiveIndices_T.....	10
2.2.6	BaSystemLog_T.....	11
2.2.7	BudgetTransactions_T.....	12
2.2.8	ConsumerIdentities_T.....	13
2.2.9	CostSavings_T.....	13
2.2.10	Events_T.....	15
2.2.11	GroupMembership_T.....	19
2.2.12	MomSystemTask_T.....	19
2.2.13	ObjectHistory_T.....	20
2.2.14	Order_T.....	20
2.2.15	OrderItems_T.....	21
2.2.16	PrinterCluster_T.....	21
2.2.17	PrintJobHistory_T.....	22
2.2.18	Service_T.....	22
2.2.19	ServiceConsumer_T.....	24
2.2.20	ServiceProvider_T.....	26
2.2.21	ServiceUsage_T.....	27
2.2.22	SingleRowStat_T.....	29
2.2.23	VendingTransactions_T.....	29
3	Sample Query with Enterprise Manager (SQL Server)	30

1 Versioning Information

Version:	2.1		
Date:	July 7th, 2012		
First Draw-up Date:	April 11th, 2008		
Author:	NT-ware Systemprogrammierung GmbH		
Revision history:	Version:	Revision date:	Reviewer:
	1.0	April 11th, 2008	Dirk Tiemeyer
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Technologies concerned:	uniFLOW V5.1, HelixPW 2.1, SQL Server		
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Short Summary:

uniFLOW and Helix PW use a SQL based relational database. This White Paper gives details on the major user tables of the database.

Document Versioning Information:

Version 1.2:

- The table [ServiceUsage_T](#)^[27] has been extended by four more columns as of uniFLOW OM Version 4.0.

Version 1.3:

- Document now describes database usage in both uniFLOW OM and Helix PW
- The description of the structure has been split into two parts: Overview and Details
- The overview now shows a short description of almost every table in the database
- Two columns have been added to the overview to show the availability of each table in uniFLOW OM and/or Helix PW
- The following tables have been added to the detailed description:
 - AccessControlLists_T
 - AllowedCostCenters_T
 - BaSystemLog_T
 - CostSavings_T
 - Events_T
 - GroupMembership_T
 - MomSystemTask_T
 - Order_T
 - OrderItems_T
 - PrinterCluster_T
 - PrintJobHistory_T
 - SingleRowStat_T

Version 1.4:

- Updated versioning to uniFLOW V5.0
- Improved formattings

Version 2.0:

- Added the following new database tables for uniFLOW V5.1
 - [ConsumerIdentities_T](#)^[13]
 - [ObjectHistory_T](#)^[20]
 - [VendingTransactions_T](#)^[29]

Version 2.1:

- Added additional information about SiteAudit in chapter [ServiceUsare_T](#)^[27]

2 Structure of uniFLOW Database

uniFLOW and Helix PW use a SQL based relational database called DsPcDb managed by a relational database management system (RDBMS). It is suitable for use with either Microsoft® SQL Server 2000, SQL Server 2005, MSDE or Microsoft®SQL Server 2005 Express Edition. The database itself is made up of tables and fields as described in the chapter [Details of the Major User Tables](#)^[8]. You will also find a basic [sample query](#)^[30] using the Enterprise Manager (SQL Server) at the end of this Whitepaper.



DO NOT MODIFY ANY RECORDS IN THE DATABASE ITSELF.

!! DB ACCESS IS READ ONLY !!

Any direct changes in the database can and will cause data corruption / inconsistencies.

You can obtain read-only access by creating a second user for the SQL Server with read-only access rights besides the default administrative account.

Generally, we strongly advise you not to make any changes to the database itself, and especially not to delete any fields. Please be aware that any deletions inside the database will limit NT-ware's support to the status pre ante. Before you make any changes, back up your system including database.

*You are permitted to apply any changes to the database **only** in the following application cases:*

- 1. For customizing statistic data for generating Crystal Reports.*
- 2. For adding Printer Management Information at Server Configuration > Printer > Info tab.*

For any changes you apply to the database, ensure NT-ware tech support has recommended to do so beforehand.

- All uniFLOW and Helix PW data (printers, users, cost centers, etc.) are stored as objects for indexing only. The database fields are used only for search and retrieval purposes, they are not intended for storing any actual object data.
- The database structure is dynamic. New database fields can be introduced with a new kernel of the software. This is done automatically in a new release, for instance for a new feature.
- Most of the data is stored in binary form.



Note for uniFLOW users:

We strongly advise you to access the uniFLOW database (DsPcDb) with read-only access rights. The quickest way to do this is to access the database through uniFLOW at

<Server IP Address>/pwserver/techdispdb.asp or

<server name>/pwserver/techdispdb.asp.

For further information on using the database in uniFLOW please refer to the uniFLOW User Manual.



Note for users of Helix PW and/or Helix PW Essential:

We strongly advise you to access the Helix PW database (DsPcDb) with read-only access rights. The quickest way to do this is to access the database through Helix PW at

<Server IP Address>/Helixserver/techdispdb.asp or

<server name>/Helixserver/techdispdb.asp.

For further information on using the database in Helix PW and/or Helix PW Essential please refer to the Helix PW Administrator Manual.

2.1 Short Description of Each Table in the Database

The following list provides a short description of the tables existing within the database.

Database Tables	Field Types of respective Tables	Avlb. in uniFLOW	Avlb. in Helix PW
AccessControlLists_T ^[8]	All Access Control Lists (ACL) are stored in this table. (ACL overview only)	✓	✓
ActivePrintJobs_T	All active print/copy jobs of the system are stored in this table (uniFLOW OM up to V2.2). Starting with uniFLOW OM V3.0 all active print/copy jobs are stored in the file system to fasten the access to this information, so this table is no longer in use.	✓	✓
AllowedCostCenters_T ^[8]	This table show the available Cost Centers configuration for users and groups.	✓	✓
ArchivedJobs_T ^[8]	Details about archived jobs, such as Cardinality, Amount Paid, Job and User Name.	✓	✓
ArchiveEntry_T ^[9]	Time details of archived jobs, such as Time archived and Time expiring. In uniFLOW: Used in Archive with WQM, Internet Gateway, Print Processor "Archive Job!", SPP/MEAP. In Helix PW and Helix PW Essential: Used in Library with Operator Dashboard, Web Submission, Print Processor "Archive Job!".	✓	✓
ArchiveIndices_T ^[10]	Stores index data for archive entries, as well as folder and ACL entries.	✓	✓
BaSystemLog_T ^[11]	Is used for storing logging information of the kernel, in uniFLOW as well as in Helix PW. It is related to the webpages named in the Note for uniFLOW users ^[3] and in the Note for Helix PW users ^[3] .	✓	✓
BudgetTransactions_T ^[12]	All transactions in connection with budget.	✓	✓

Database Tables	Field Types of respective Tables	Avlb. in uniFLOW	Avlb. in Helix PW
ConfigObjects_T	This table includes one entry for the general configuration of uniFLOW and Helix PW only. It cannot be used for reporting at all!	✓	✓
ConsumerGroupLinks_T	(Unused)	✓	✓
ConsumerIdentities_T ^[13]	This table stores the details for the multiple identities. It basically maps the identity details (like type, value, default flag) to an object (e.g. user / cost center).	✓	✓
CostSavings_T ^[13]	Print Jobs and all data in connection with jobs and cost savings.	✓	✓
Events_T ^[15]	This table is used to store Money Loader events / actions.	✓	✓
GroupMembership_T ^[19]	All group membership configurations. (Answering questions like "Which user belongs to which group?")	✗	✓
MomSystemTasks_T ^[19]	General information related to tasks in uniFLOW / Helix PW.	✓	✓
ObjectHistory_T ^[20]	Confidential	✓	✓
Order_T ^[20]	All jobs that have been submitted via the Helix PW Web Submission.	✗	✓
OrderItems_T ^[21]	Job list per order for Helix PW Web Submission jobs.	✗	✓
PrinterCluster_T ^[21]	General printer cluster related information.	✓	✓
PrintJobHistory_T ^[22]	All relevant information of changing the print Job Status.	✓	✓
Service_T ^[22]	"Articles" and "Formats/Products" of Price Profiles, such as Fax A4, Stapling, and all data in connection with these, such as: <ul style="list-style-type: none"> • Which printer used a particular service (ServiceProvider_T) and hence which user/group/cost center was involved. • Has the data been successfully synchronized with another main server (uniFLOW or Helix PW). 	✓	✓

Database Tables	Field Types of respective Tables	Avlb. in uniFLOW	Avlb. in Helix PW
ServiceConsumer_T ^[24]	<p>All entities (Users, Cost Centers, Groups) consuming, in uniFLOW and Helix PW, i.e. printing, copying, scanning, faxing and the appertaining information, such as:</p> <ul style="list-style-type: none"> • Address information • Fingerprint information (uniFLOW only) 	✓	✓
ServiceProvider_T ^[26]	All printer related information, such as Asset Management Information and pricing profiles	✓	✓
ServiceUsage_T ^[27]	<p>Print/Copy/Fax/Scan Jobs and all data in connection with jobs, e.g.</p> <ul style="list-style-type: none"> • Which printer was used? • Which article and/or product was used (Service_T)? • Which amount was paid? • What was the name of the job? • What was the name of the user/group/cost center, who/which submitted the job (linked to ServiceConsumer_T)? <p>This table is not always used, for special projects SingleRowStat_T might be used instead.</p>	✓	✓
SingleRowStat_T ^[29]	<p>Print/Copy/Fax/Scan Jobs and all data in connection with jobs, e.g.</p> <ul style="list-style-type: none"> • Which printer was used? • What was the name of the job? • What was the name of the user who submitted the job? <p>Please note this is a special format. If this table is enabled all accounting information will be stored within this table. The ServiceUsage_T won't be used further on. (For special projects only)</p>	✓	✓
VendingTransactions_T ^[29]	This table stores details about the communication via the EAI interface.	✓	✓

2.2 Details of the Major User Tables

This chapter provides a detailed explanation of the tables introduced in the previous chapter.

2.2.1 AccessControlLists_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	Identification GUID of record itself.
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.
Name	nvarchar	ACL Name.

2.2.2 AllowedCostCenters_T

Column Name / Database Field	Data Type	Description/Application
UserID	uniqueidentifier	Identification GUID of the user or group object.
CostCenterID	uniqueidentifier	Identification GUID of the cost center object.

2.2.3 ArchivedJobs_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	Identification GUID of record itself.
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.
Cardinality	int	Cardinality of archived print job.
AmountPaid	float	Costs of archived print job.
JobName	nvarchar	Name of archived document in uniFLOW Archive or in Helix PW Library.
UserName	nvarchar	Name of user who archived job.

2.2.4 ArchiveEntry_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	Identification GUID of record itself.
JobID	uniqueidentifier	Identification GUID of Archived Job within record.
ParentEntry	uniqueidentifier	GUID of parent folder.
OrderInParent	int	Obsolete.
TimeArchived	datetime	The date when the job was added to the archive.
TimeExpiring	datetime	The date when the job will be removed from the archive.
ArchiveFlags	int	Shows whether Archive entry will be removed by archive maintenance task 1: Archive entry will not be removed.

2.2.5 ArchiveIndices_T

Column Name / Database Field	Data Type	Description/Application
IndexID	uniqueidentifier	Identification GUID of record itself.
IndexType	int	Type of Index 0: Main index ?: Additional indices defined in 'Module Config' -> 'Document Archive'
[Value]	nvarchar	Name of folder or archived file.
ArchiveEntry	uniqueidentifier	GUID of archive main folder and sub-folder names always displayed as {00000000-0000-0000-0000-00000000} and of archived jobs linking to the Identification GUID of ArchiveEntry_T.
Parent	uniqueidentifier	GUID of main folders and sub-folders and of jobs archived.
TimeExpiring	datetime	The date when the folder/subfolder/jobs will be removed from the archive.
Modified	datetime	The date when the folder/subfolder/jobs was last modified.
ACL	uniqueidentifier	GUID of ACL of record.
SyncFlag	int	Synchronization with Internet Gateway and Web Submission: 0: item (job or folder) is not synchronized 1: item (job or folder) is synchronized

2.2.6 BaSystemLog_T

Column Name / Database Field	Data Type	Description/Application
EntryTime	datetime	Event time.
EntryType	int	Internal entry type.
JobID	uniqueidentifier	GUID if the job.
Description	nvarchar	Job log description.
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.
ServerName	nvarchar	The name of the server where uniFLOW or Helix PW is running.
LogData1	nvarchar	Additional job log description.
LogData2	nvarchar	Additional job log description.
EntryID	int	Increased number.

2.2.7 BudgetTransactions_T

Column Name / Database Field	Data Type	Description/Application		
TransactionTime	datetime	Date and time when transaction took place.		
TransactionType	int	Bit mask showing the type of transaction.		
		Type HEX	Type DEC	Description
		0x00000000	0	Normal debit
		0x00000001	1	Canceled debit
		0x00000002	2	not used
		0x00000003	3	Budget reset value (used with 'additive' budgets)
		0x10000000	268435456	Consolidated budget amount (to speed up balance)
		0x10000001	268435457	Consolidated budget after reset (used with 'resetting' budgets)
Amount	float	Amount of budget transaction/ consolidated value.		
Entity	uniqueidentifier	GUID of service consumer.		
Service	uniqueidentifier	GUID of service.		
ServiceUsage	uniqueidentifier	GUID of service usage .		
TransactionData	nvarchar	User name of operator changing balance from UI, or MoneyLoader transaction data, or Credit card payment transaction data.		

2.2.8 ConsumerIdentities_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	
ClassData	image	
ConsumerID	uniqueidentifier	
IdentityCategory	int	
IdentityType	nvarchar	
Value	nvarchar	
DefaultIdentity	int	
Visibility	int	

2.2.9 CostSavings_T

Column Name / Database Field	Data Type	Description/Application
UsageBegin	datetime	The time the job was started (e.g. copy).
UsageEnd	datetime	The time the job was stopped (e.g. copy).
ServiceProviderInput	uniqueidentifier	GUID, linking the input printer.
ServiceProvider	uniqueidentifier	GUID, linking the output printer.
ServiceConsumer	uniqueidentifier	GUID, linking the user.
ServConsGroup	uniqueidentifier	GUID, linking the group.
ServConsProject	uniqueidentifier	GUID, linking the cost center / project.
JobName	nvarchar	The name of the print job (for jobs).
UserName	nvarchar	The name of the user (for jobs).
FormatCode	int	See "Service_T"."ServiceCode".
Pages	int	Amount of total pages.
PagesColor	int	Amount of colored pages.
PagesDuplex	int	Amount of duplex pages.
Costs	float	Effective costs.
CostsSaved	float	Effective savings.

Column Name / Database Field	Data Type	Description/Application		
CostsSavedPot	float	Potential savings.		
Type	int	Bit mask holding info about how savings were realized.		
		Type HEX	Type DEC	Description
		0x00000001	1	Duplex
		0x00000002	2	Forced Black & White
		0x00000004	4	RBR
		0x00000008	8	IRBR
		0x00010000	65536	Manual Deletion
		0x00020000	131072	Maintenance Deletion
		0x00040000	262144	License Exceeded Deletion
		0x00080000	524288	Unknown User Deletion
		0x00100000	1048576	ACL Deletion
		0x00200000	2097152	Budget Exceeded Deletion
		0x00400000	4194304	Product Availability Deletion
		TypePot	int	Bit mask holding information how potential savings will be realized.
Type HEX	Type DEC			Description
0x00000001	1			Duplex
0x00000002	2			Forced Black & White
0x00000004	4			RBR
0x00000008	8			IRBR
0x00010000	65536			Manual Deletion
0x00020000	131072			Maintenance Deletion
0x00040000	262144			License Exceeded Deletion
0x00080000	524288			Unknown User Deletion
0x00100000	1048576			ACL Deletion
0x00200000	2097152			Budget Exceeded Deletion
0x00400000	4194304			Product availability Deletion

2.2.10 Events_T

Column Name / Database Field	Data Type	Description/Application		
Time	datetime	Time stamp of the triggered event.		
Device	uniqueidentifier	GUID of the device (empty for MoneyLoader).		
SerialNumber	nvarchar	The serial number of the device that this event entry pertains to. This may be the serial number of a money loader or a printer.		
DeviceType	int	The type of device this entry pertains to, currently: 0 - Printer / MFD 1 - Money Loader 2 - MIND / microMIND		
EventType	int	An integer value defining the event ID. Currently: 0 - Other 1 - Status Change 2 - Toner Cartridge Change Detected 3 - Notification Sent (a notification has been sent)		
Status	int	Bit mask showing Money Loader status:		
		Type HEX	Type DEC	Description
		0x40000000	1073741824	Removing Funds
		0x00000001	1	Printer General Error
		0x00000002	2	Printer Paper Is Empty
		0x00000004	4	Printer Paper Is Low
		0x00000008	8	Printer Paper At Printer Exit
		0x00000010	16	Printer Nor Paper At Print Head
		0x00000020	32	Printer Head Is Up
		0x00000040	64	Printer Cutter Time Out
		0x00000080	128	Printer Toner Empty
		0x00000100	256	Money Source Offline
		0x00000200	512	Money Source Reset
		0x00000400	1024	Money Source Safe Jam
0x00000800	2048	Money Source Unsafe Jam		

Column Name / Database Field	Data Type	Description/Application																													
		0x00001000	4096 Money Source Stacker Full																												
		0x00002000	8192 Money Source Fraud																												
		0x00004000	16384 Door Open																												
StatusEx	nvarchar	<p>An Event Parameter, that depends on the EventID configured. For a Status Change Event, a bitmask value (representing the complete printer status, containing multiple individual statuses) is stored, where the individual bits represent the following information:</p> <table border="1"> <tr> <td>GenericIdle</td> <td>0x1000000000000000</td> </tr> <tr> <td>GenericBusy</td> <td>0x2000000000000000</td> </tr> <tr> <td>GenericError</td> <td>0x4000000000000000</td> </tr> <tr> <td>GenericOffline</td> <td>0x8000000000000000</td> </tr> <tr> <td>StandBy</td> <td>0x0000000000000001</td> </tr> <tr> <td>WarmUp</td> <td>0x0000000000000002</td> </tr> <tr> <td>DoorOpen</td> <td>0x0000000000000004</td> </tr> <tr> <td>PaperJam</td> <td>0x0000000000000008</td> </tr> <tr> <td>NoToner</td> <td>0x0000000000000010</td> </tr> <tr> <td>TonerLow</td> <td>0x0000000000000020</td> </tr> <tr> <td>TonerDisposalFull</td> <td>0x0000000000000040</td> </tr> <tr> <td>PaperOut</td> <td>0x0000000000000080</td> </tr> <tr> <td>DeviceLocked</td> <td>0x0000000000000100</td> </tr> <tr> <td>FinisherFull</td> <td>0x0000000000000200</td> </tr> </table>		GenericIdle	0x1000000000000000	GenericBusy	0x2000000000000000	GenericError	0x4000000000000000	GenericOffline	0x8000000000000000	StandBy	0x0000000000000001	WarmUp	0x0000000000000002	DoorOpen	0x0000000000000004	PaperJam	0x0000000000000008	NoToner	0x0000000000000010	TonerLow	0x0000000000000020	TonerDisposalFull	0x0000000000000040	PaperOut	0x0000000000000080	DeviceLocked	0x0000000000000100	FinisherFull	0x0000000000000200
GenericIdle	0x1000000000000000																														
GenericBusy	0x2000000000000000																														
GenericError	0x4000000000000000																														
GenericOffline	0x8000000000000000																														
StandBy	0x0000000000000001																														
WarmUp	0x0000000000000002																														
DoorOpen	0x0000000000000004																														
PaperJam	0x0000000000000008																														
NoToner	0x0000000000000010																														
TonerLow	0x0000000000000020																														
TonerDisposalFull	0x0000000000000040																														
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FinisherFull	0x0000000000000200																														

Column Name / Database Field	Data Type	Description/Application												
		<table border="1"> <tr> <td>FinisherDoorOpen</td> <td>0x000000000000 000400</td> </tr> <tr> <td>FinisherJam</td> <td>0x000000000000 000800</td> </tr> <tr> <td>OutputJam</td> <td>0x000000000000 002000</td> </tr> <tr> <td>DeepStandBy</td> <td>0x000000000000 008000</td> </tr> <tr> <td>RecoveredEmergency</td> <td>0x000000000000 010000 (indicates, that the printer has been recovered from a Server/Network Offline status)</td> </tr> <tr> <td>DeviceConfigChanged</td> <td>0x000000000000 020000 (indicates a change in the device)</td> </tr> </table>	FinisherDoorOpen	0x000000000000 000400	FinisherJam	0x000000000000 000800	OutputJam	0x000000000000 002000	DeepStandBy	0x000000000000 008000	RecoveredEmergency	0x000000000000 010000 (indicates, that the printer has been recovered from a Server/Network Offline status)	DeviceConfigChanged	0x000000000000 020000 (indicates a change in the device)
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RecoveredEmergency	0x000000000000 010000 (indicates, that the printer has been recovered from a Server/Network Offline status)													
DeviceConfigChanged	0x000000000000 020000 (indicates a change in the device)													
StatusChange	nvarchar	For a Status Change Event, this specifies the individual printer status a corresponding record pertains to. Regarding possible values, the same coding as in the "StatusEx" attribute is used (see above).												
Description	nvarchar	Any textual description that may accompany the event. E.g. detailed status information, an e-mail address of a notification that was sent or other.												
AssocEntity	nvarchar	If the event is associated with any other entity, this is given here.												
TotalCounter	int	For events which pertain to printer devices (DeviceType = 0) and status change events (EventType = 1), this attribute will contain the device's total counter value from the point in time when the status change was observed. This will make it possible to evaluate the number of clicks between certain statuses (e.g. paper jams, etc.).												
ManufacturerInfo	nvarchar	Any manufacturer specific information, such as an 'E-Error' for Canon devices, or others can be stored in here.												

Column Name / Database Field	Data Type	Description/Application
SystemServerName	nvarchar	

2.2.11 GroupMembership_T

Column Name / Database Field	Data Type	Description/Application
UserID	uniqueidentifier	Identification GUID of the user.
GroupID	uniqueidentifier	Identification GUID of the group.

2.2.12 MomSystemTask_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	Identification GUID of the task.
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.
Name	nvarchar	The name of the task.
Type	nvarchar	The name of the task type.
LastExecution	datetime	Last execution time.
NextExecution	datetime	Next execution time.
LastExecutionResult	int	Return value of the task: -1: never executed 0: Last execution OK 1: Last execution failed 2: Other failures 3: Executing
LastError	nvarchar	Error Message returned by the task itself.
MachineName	nvarchar	Machine name.

2.2.13 ObjectHistory_T

Column Name / Database Field	Data Type	Description/Application
Version	bigint	confidential
ID	uniqueidentifier	confidential
ClassData	image	confidential
ObjectType	nvarchar	confidential
ObjectName	nvarchar	confidential
Modified	datetime	confidential
ModifiedBy	nvarchar	confidential
Description	nvarchar	confidential

2.2.14 Order_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	Identification GUID of the order.
Time	datetime	Time of job creation.
UserID	uniqueidentifier	Identification GUID of the user.
Number	nvarchar	The order number.
Status	int	The job status: 0: no processing 1: accepted 2: in production 3: in delivery 4: completed
Visibility	int	The job visibility: 0: visible (still available) 1: deleted (no longer active)
CardTransaction	uniqueidentifier	Filled in case of a credit card transaction.
PaymentMethod	nvarchar	The uses payment method for this order: Budget Invoice Credit Card Payment (PayPal) Credit Card Payment (Worldpay)

2.2.15 OrderItems_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	Identification GUID of the job.
OrderID	uniqueidentifier	Identification GUID of the related order.
Name	nvarchar	Name of the job.
AmountPaid	float	Job price.
CopyCount	int	Copy count.
VAT	float	Value added tax (VAT), or goods and services tax (GST).

2.2.16 PrinterCluster_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	Identification GUID of the printer cluster.
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.
Name	nvarchar	The name of the printer cluster.
MomSyncFlag	bit	Synchronization between main servers (uniFLOW or Helix PW): false: no synchronization true: yes, synchronization has taken place

2.2.17 PrintJobHistory_T

Column Name / Database Field	Data Type	Description/Application
JobID	uniqueidentifier	Identification GUID of the job itself.
Time	datetime	The time the changes has been done.
UserName	nvarchar	The name of the user who changes the job status.
FieldName	nvarchar	The JT Field Name which has been updated.
OldValue	nvarchar	The value of the JT field before the update.
NewValue	nvarchar	The value of the JT field after the update.
Description	nvarchar	Additional information related to the update e.g. update reason.

2.2.18 Service_T

Column Name / Database Field	Data Type	Description		
ID	unique identifier	Identification GUID of record itself.		
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.		
Name	nvarchar	Name of "Articles" and "Formats / Products" of Price Profiles, such as Print Color A4.		
ServiceProvider	unique identifier	Identification GUID of printer this service belongs to, may link to a pricing profile.		
ServiceCode	int	Type HEX	Type DEC	Description
		0x00000000	0	None / empty
		0xFFFFFFFF	-1	General
		0x00010001	65537	copy A4
		0x00010002	65538	copy A3
		0x00010003	65539	copy B4
		0x00010004	65540	copy B3
		0x00020001	131073	copy colour A4
		0x00020002	131074	copy colour A3
		0x00020003	131075	copy colour B4

Column Name / Database Field	Data Type	Description
		0x00020004 131076 copy colour B3
		0x00030001 196609 print A4
		0x00030002 196610 print A3
		0x00030003 196611 print B4
		0x00030004 196612 print B3
		0x00040001 262145 print colour A4
		0x00040002 262146 print colour A3
		0x00040003 262147 print colour B4
		0x00040004 262148 print colour B3
		0x00080001 52429 finishing option Cutter
		0x00080002 524290 finishing option Sorter
		0x00080003 524291 finishing option Hole Punching
		0x00080004 524292 finishing option Stapling
		0x00080005 524293 finishing option Binding
		(others on request)
ProviderIndex	int	Index of the service within the provider.
Visibility	int	0: visible (still available) 1: deleted (no longer active, but still available in statistics for example).
MomSyncFlag	bit	Synchronization between main servers (uniFLOW or Helix PW): false: no synchronization true: yes, synchronization has taken place.
Modified	datetime	Last time the service was modified.

2.2.19 ServiceConsumer_T

Column Name / Database Field	Data Type	Description
ID	uniqueidentifier	Identification GUID of record itself.
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.
Name	nvarchar	Name of Users, Cost Centers, Groups.
Login	nvarchar	Login name
AddressOne	nvarchar	"Street" of users' default address, invoice address, and delivery address. "Description" of "Groups". "Description" of "Cost Center".
AddressTwo / Zip / City /	nvarchar	Details of users' default address, invoice address, and delivery address.
Fax / Memo /	nvarchar	Details of user's default address.
PayConID	nvarchar	This number is used for Users, Groups or Cost Centers for identification purposes: Terminal / Chip Identification.
UserTypeEx	int	0 / 2: normal users 4096: cost center 4097: group 4098: agent/clerk 4099: branch 4100: invoice address 4101: delivery address
DefaultCostCenter	uniqueidentifier	Identification GUID of standard cost center.
DefaultGroupID	uniqueidentifier	Identification GUID of standard group.
HasBioData	int	0: no fingerprint read in 1: fingerprint read in
Visibility	int	0: visible (still available) 1: deleted (no longer active, but still available in statistics for example)
SAPName	nvarchar	Identical with Field 'Host Login'. Alternative user name for second account used for e.g. SAP printers.
PinCodeHash	nvarchar	Show PIN number entered in GUI in 'hash'.

Column Name / Database Field	Data Type	Description
MomSyncFlag	bit	Synchronization between main servers (uniFLOW or Helix PW): false: no synchronization true: yes, synchronization has taken place
LinkedConsumerID	uniqueidentifier	Links to a user's ID in the table ServiceConsumer_T referring for example to a delivery address.
Modified	datetime	Last time when users, cost centers, or groups were modified.
CustomProp_IGStatus	nvarchar	Status of Internet Gateway user, or Web Submission user: no entry: - none - 0: IG Account Available, but Deactivated 2: User Data Accepted by Operator 3: User Data Declined by Operator 4: Resend "User Data Accepted" 5: Resend "User Data Declined " 6: User data declined, invalid login name 7: User data declined, invalid login details
CustomProp_IGLOGIN	nvarchar	In uniFLOW: Login name for Internet Gateway account as entered in uniFLOW GUI. In Helix PW and Helix PW Essential: Login name for Web Submission account as entered in Helix PW GUI.

2.2.20 ServiceProvider_T

Column Name / Database Field	Data Type	Description
ID	uniqueidentifier	Identification GUID of record itself.
Name RoutingGroup PrinterName ServerName	nvarchar	Normal fields as displayed at Server Configuration > Printer > General Tab.
MgmtData_CustomerNumber / MgmtData_MonthlyVolume / MgmtData_ContractStart / MgmtData_ContractEnd / MgmtData_Serial / MgmtData_Location / MgmtData_AssetNumber / MgmtData_Hostname / MgmtData_MacAddress / MgmtData_ModelName /	nvarchar	Normal fields as displayed at Server Configuration > Printer > Info Tab.
PayConSerialNo	nvarchar	Serial Number of PayCon / MIND, etc.
PayConIpAddress	nvarchar	IP address of IPC PayCon / PC100 / ICS Money Loader / MIND.
ProviderType	int	1: Price Profile 4: Printer
PricingProfile	uniqueidentifier	Link to ID of a pricing profile in ServiceProvider_T.
HidePrinterFromWqm	int	1: meaning 'yes, hidden in WQM/RQM' 0: meaning 'no, not hidden WQM/RQM' as displayed at Server Configuration > Printer > General Tab.
Visibility	int	0: visible (still available) 1: deleted (no longer active, but still available in statistics for example).
MomSyncFlag	bit	Synchronization between main servers (uniFLOW or Helix PW): false: no synchronization true: yes, synchronization took place
Modified	datetime	Last time the service provider was modified.

2.2.21 ServiceUsage_T

Column Name / Database Field	Data Type	Description
ID	uniqueidentifier	Identification GUID of record itself.
ServiceProvider	uniqueidentifier	GUID, linking the printer.
Service	uniqueidentifier	GUID, linking the service.
ServiceConsumer	uniqueidentifier	GUID, linking the user.
ServConsGroup	uniqueidentifier	GUID of standard group.
ServConsProject	uniqueidentifier	GUID, linking the cost center / project.
ParentService	uniqueidentifier	GUID, reference to the ServiceUsage_T.ID field of the "mainservice" if this is a "subservice".
CardNumber	int	Is for example used when reading out and storing a counter value; the number of the respective counter is displayed here. (For records relating to consumables information (determined via SiteAudit), this field stores the ID of a consumable.)
ClassData	image	A BLOB for variable-length binary data containing all information of one data record in binary form.
UsageBegin	datetime	The time the service was started (e.g. copy).
UsageEnd	datetime	The time the service was stopped (e.g. copy).
Cardinality	int	The number of times the service was used (e.g. 5 A3 copies).
AmountPaid	float	The price of the service usage.
JobName	nvarchar	The name of the print job (for jobs). (For records relating to consumables information (determined via SiteAudit), this field stores the type/description of a consumable.)
UserName	nvarchar	The name of the user (for jobs). (For records relating to consumables information (determined via SiteAudit), this field stores the predicted replacement date of a consumable.)
JobTicketField	nvarchar	Extra fields, gathered from the JT. (For records relating to consumables information (determined via SiteAudit), this field stores data about the current status of a consumable (remaining pages).)

Column Name / Database Field	Data Type	Description
JobTicketFieldTwo	nvarchar	Maps the fields 'JT_DbLookupField', 'JT_DbLookupFieldTwo', etc. onto a database field. (For records relating to consumables information (determined via SiteAudit), this field stores data about the current status of a consumable (used level).)
JobTicketFieldThree	nvarchar	Usage: Extra project numbers, descriptions, indexes, etc. (For records relating to consumables information (determined via SiteAudit), this field stores data about the current status of a consumable (remaining level).)
CopyCount	int	Number of copies made.
NonChargeable	int	Determines if a job will be charged: 0 = job will be charged 1 = job won't be charged
NonChargeReason	nvarchar	Reason why the particular job will not be charged.
MomSyncFlag	bit	Synchronization between main servers (uniFLOW or Helix PW): false: no synchronization true: yes, synchronization has taken place
AltPrice0	float	Contains values of Amount and Price of Alternative Price Profile 0.
AltPrice1	float	Contains values of Amount and Price of Alternative Price Profile 1.
AltPrice2	float	Contains values of Amount and Price of Alternative Price Profile 2.

2.2.22 SingleRowStat_T

Column Name / Database Field	Data Type	Description/Application
EntryTime	datetime	The time the service was stopped (e.g. copy).
UserName	nvarchar	The name of the user (for jobs).
JobName	nvarchar	The name of the print job (for jobs).
PrinterName	nvarchar	The name of the printer.
ServerName	nvarchar	The name of the server the printer is configured for.
FormatCode	int	See "ServiceCode" of the "Service_T".
TotalPages	int	The amount of total pages.
DuplexPages	int	The amount of duplex pages.
ColorPages	int	The amount of colored pages.
InputTray	smallint	The paper tray number.

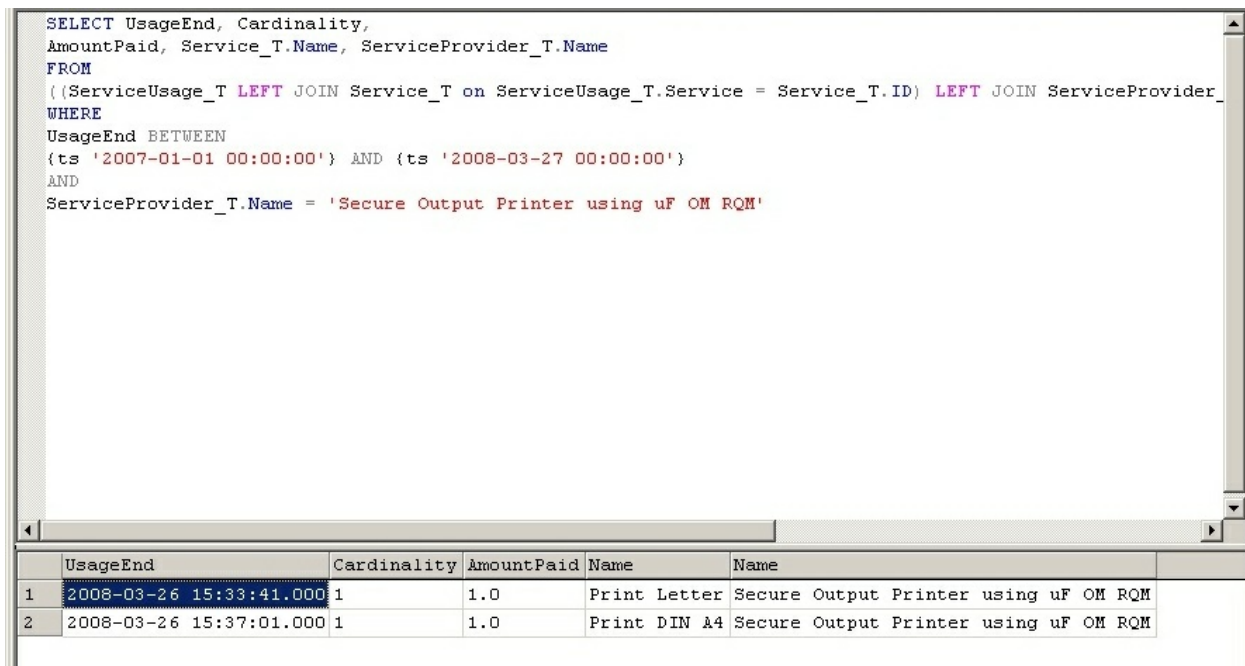
2.2.23 VendingTransactions_T

Column Name / Database Field	Data Type	Description/Application
ID	uniqueidentifier	
ClassData	image	
ConsumerID	uniqueidentifier	

3 Sample Query with Enterprise Manager (SQL Server)

To show you the strength residing within the database and the asset of running any kind of query you can devise, please find below a sample query and the report thus generated. The report gives details on the name of the services used and the amount paid for print jobs printed between January 1st 2007 and 31st March 2008 with the printer of the name "Secure Output Printer using uF OM RQM".

```
SELECT UsageEnd, Cardinality,
AmountPaid, Service_T.Name, ServiceProvider_T.Name
FROM
((ServiceUsage_T LEFT JOIN Service_T on ServiceUsage_T.Service = Service_T.ID) LEFT
JOIN
ServiceProvider_T on ServiceUsage_T.ServiceProvider = ServiceProvider_T.ID)
WHERE
UsageEnd BETWEEN
{ts '2007-01-01 00:00:00'} AND {ts '2008-03-31 00:00:00'}
AND
ServiceProvider_T.Name = 'Secure Output Printer using uF OM RQM'
```



```
SELECT UsageEnd, Cardinality,
AmountPaid, Service_T.Name, ServiceProvider_T.Name
FROM
((ServiceUsage_T LEFT JOIN Service_T on ServiceUsage_T.Service = Service_T.ID) LEFT JOIN ServiceProvider_
WHERE
UsageEnd BETWEEN
{ts '2007-01-01 00:00:00'} AND {ts '2008-03-27 00:00:00'}
AND
ServiceProvider_T.Name = 'Secure Output Printer using uF OM RQM'
```

	UsageEnd	Cardinality	AmountPaid	Name	Name
1	2008-03-26 15:33:41.000	1	1.0	Print Letter	Secure Output Printer using uF OM RQM
2	2008-03-26 15:37:01.000	1	1.0	Print DIN A4	Secure Output Printer using uF OM RQM