The Workflow Guidebook

Version 1.01 – February 2007

1 Changes

February 15 2007 - Added 3.3 Debugging

1 Data model

1.1 Element types

SP2 has systemtables with corresponding awfelemtypeXX tables for overrides and bespoke work.

1.1.1 Asyselemtype/awfelemtype

Header table of the element type definition.

Has a corresponding table awfelemtype

COLUMN_NAME	VALUE	DESCRIPTION
assembly_name		Assembly name.
attribute_id		Attribute ID.
bflag	1	Action overview enabled for the element type.
	2	Don't aggregate tasks in task list.
	4	Allow no wf state (enables "Leave workflow status unchanged" in the process designer).
	8	E-mail – used by IntellAgent.
	16	From attribute id (element type is based on attribute).
	32	Master file (enables the "Tasks added to Action overview – master file level" in the process designer).
class_name		Class Name.
description		Description.
element_type		Unique code to identify the element type.
exception_rule		Workflow treatment if rule does not exist.
	NW	No workflow.
	UI	Mote to items to follow up.
priority		Not in use.
status	N	Active.
	P	Parked.
	C	Closed.
title_no		Title ID.

1.1.2 Asyselemtypedet/awfelemtypedet

Detail table of the element type definition. Lists all tables included in the element type and the structure of them.

Has a corresponding table awfelemtypedet.

COLUMN_NAME	VALUE	DESCRIPTION
attribute_id		Attribute ID. Used if a table contains various attributes, e.g agldimvalue.
bflag	1	Not in use.
	2	Exclude from check sum.
	4	Table may not always contain rows for a given item.
column_name		Not in use.
databag_id		Not in use.
element_type		Unique code to identify the element type.
entity_assembly		Entity assembly for table.
entity_def		Entity class definition for table.
hist_table		Historical table.
hist_table_det		Historical detail table.
hist_table2		Historical table 2 (currently not in use).
hist_table2_det		Historical detail table 2 (currently not in use).
query		Not in use.
real_table		Name of real table when using a view in element type. The table that contains the wf_state.
sequence_no		Sequence number.
table_det		Name of detail table, this is blank for the lowest level table in the structure. This table must have column wf_state.
table_name		The table name.
title_no		Standard title ID.
treat_code		Treat code. Used if a table contains various transaction types, e.g acrtrans.

1.1.3 **Awfelemtypeitem**

Contains the columns chosen in element type details (WF19).

COLUMN_NAME	VALUE	DESCRIPTION
att_id_col		Column name containing attribute id.
attribute_id		Attribute ID.
bflag	1	Trigger redistribute (New distribution in WF19).
	2	Allow in delay setup.
	4	Allow in rules.
	8	Show in task list.
	16	Show in enquiry.
	32	AO Selection list.
	64	Show in DS mapping.
	128	Log value.
	256	IntellAgent e-mail.
column_name		Column in WF19.
data_item_no		Unique identifier.
data_length		Character length of attribute values.#Values: 1-99.
data_type		Data type of column, same values as found in asyscolumns:
	8	Integer (64 bit.)
	b	Bool.
	c	Fixed length string.
	d	Datetime.
	f	Floating point number.
	g	Guid.
	i	Integer (32 bit).
	l	Long_text/blob.
	m	Money (float).
	r	Blob.
	t	Text.
element_type		Element type.
field_op		Operator in WF19 (used for trigger redistribute).
sequence_no		Sequence number (used for show in tasklist, there can only be one of each value from 1-5).
sequence_no2		Sequence number 2 (used to determine the order of columns chosen for show in enquiry).
table_name		Table name in WF19.
title_no		Standard title ID.

1.1.4 Awfelemtypegrouping

Holds the aggregation definition for an element type, defined in Aggregate (WF26).

COLUMN_NAME	DESCRIPTION
attribute_id	Attribute in WF26 (tip: to aggregate all values for an item use A3 - CLIENT).
element_type	Element type.
sequence_no	SequenceNo in WF26.
type	Grouping type. Values: A - Aggregation in rule.

1.1.5 Asyselemtypemenu/awfelemtypemenu

Holds the available screens and server process for an element type, used in the process designer.

COLUMN_NAME	VALUE	DESCRIPTION
element_type		Unique code to identify the element type.
entry_flag	0	Screen is not entry screen.
	1	Screen is entry screen.
menu_id_office		The menu id of the screen in Smart client. This is the screen that will be opened when clicking in the task list.
menu_id_web		The menu id of the screen in Self Service. This is the screen that will be opened when clicking in the task list.
menu_ref		Unique id, referenced in awfprocfunction.
s_usage		Usage: • WFS – Screen (user step), • WFR – Report (system step), • REG – registration screen for document type, • BATCH – server process for document type, • AO – action overview screen.
title_no		Standard title ID.

1.1.6 Asyselemtypemap/awfelemtypemap

Holds mapping information between element type and registration screen/server process.
Used when loading documents to document archive and sending to registration screen for data
entry, e.g. scanning invoices to enter in VP10.

COLUMN_NAME	DESCRIPTION
data_item_no	Unique identifier.
element_type	Element type.
field_name	Name of the field in the screen.
func_name	Name of the screen: Link to asysfunction. Name of the screen or report VP10, EI02 etc.
func_type	Menu function type. Link to asysfunction.
populate_seq_no	The sequence to populate the fields in. More than one field may have the same populate_seq_no.

1.2 Process definition

1.2.1 Awfversion

Determines which version of a process is active.

COLUMN_NAME	DESCRIPTION
Active_flag	Set to 1 for the active version.
Date_from	When the version was set active.
Date_to	When the version was superseded by a newer version.
Description	Comment when the version was committed.
Node_id	Process node_id.
Version_no	The process version.

1.2.2 Awfprocess

The process tree, processes and steps are stored here.

COLUMN_NAME	VALUE	DESCRIPTION
Action_type		Not in use on this table.
Allow_change		"Users allowed to change data" in the Other tab on a user step.
Allow_single		
Auth_type		Not in use.
Auto_app		"Automatic approval" in the Other tab on a user step.
Availability		"Set available for manual use" in general tab on user step.
Bflag		Not in use.
Condition_id		Not in use.

COLUMN_NAME	VALUE	DESCRIPTION
Description		Description on step boxes in process designer, also shown in general tab.
Do_single_check		"Perform single user involvement…" in other tab on user step.
First_flag		Set to 1 for the first step in a process, as well as the topmost item on each branch in the process tree. **If no nodes have this flag set for a process or a branch in the process tree then nothing gets drawn in the process designer.**
Fraud_detection		Not in use (is always turned on).
Func_name		Not in use.
Func_type		Not in use.
Head_app		"Allow processing on header level" in other tab on user steps Instructions – "Step instructions" in instructions tab on user steps.
Limit_check		Not in use.
Limit_check2		Not in use.
Log		"Tasks added to Action overview – transaction level" on general tab for user steps.
Log_master		"Tasks added to Action overview – master file level" on general tab for user steps.
Long_info		"Description" in general tab for system and user steps.
Next_id		Points to the next node_id in the process tree or process:
	1	The end.
	2	Split node, multiple next nodes found in target_id in awfprocsplit.
Next_join_id		Not in use.
Node_id		Identifies a node (either an item in the process tree, or a step in a process).
Node_type	0	Folder.
	1	Process.
	2	Not in use.
	3	User step.

COLUMN_NAME	VALUE	DESCRIPTION
	4	System step.
	5	Delay.
	6	Or split
	7	And split.
	8	Or join (not shown in process designer).
	9	And join.
	10	Sync step.
	11	Subprocess.
No_wfstate		"Leave workflow status unchanged" on general tab for processes, only allowed to change for element types with bflag 4 (currently only RES).
Parent_id		Points to the parent node in the process tree, points to the process for steps in a process.
Previous_id		Points to the previous node_id in the process tree or process:
	1	No previous node.
	2	Multiple nodes point to this, check which nodes have next_id equal to this node's node_id.
Prev_join_id		Not in use
Rule_group_id		"Connect to rule group" on general tab in user step.
Show_all		"Display entire transaction" on other tab in user step.
Simpl_rules		Not in use.
Single_check		"Include in single user involvement check" on other tab in user step.
Status	N	Normal.
	P	Parked process on general tab for process.
Stop_distr		"Pause distribution after this step" on other tab in user step.

COLUMN_NAME	VALUE	DESCRIPTION
Subprocess		"Use as sub-process only" on general tab for process. **If this is selected no distribution will be generated for this process unless it is used as a sub process, and nothing will be shown in the log (SP2 will log that the sub process is skipped when distributing).**
Target_id		Not in use.
Treatment1		"Treatment if change triggers new rule" on other tab in user step.
	NND	No new distribution.
	RED	Redistribute within step.
	FRD	Full redistribution.
	(blank)	Treated as redistribute within step.
Treatment2		Not in use.
Validation_code		"User validation on save" on other tab in user step.
	P	Enter password.
Variant		Not in use.
Version_no		The process version.

1.2.3 Awfprocsplit

Used by OR/AND splits to branch processes.

COLUMN_NAME	VALUE	DESCRIPTION
Action_code		"Action" in OR-split setup tab for OR split branches.
Bflag	1	Unused.
	2	Unused.
	4	"Else" in OR-split setup tab for OR split branches.
	8	"Rollback" in OR-split setup tab for OR split branches.
Description		"Description" in OR-split setup tab for OR split branches.
Element_type		"Element type" in OR-split setup tab for OR split branches.
Node_id		Identifies the split node.
Rule_id		The rule that must match to take this OR split branch.

COLUMN_NAME	VALUE	DESCRIPTION
Sequence_no		Used to uniquely identify a branch.
Target_distr		"Recipient" in OR-split setup tab for OR split branches:
	R	Rule.
	I	Workflow initiator.
	L	Last owner of task.
Target_id		The node_id that this branch points to.
Version_no		Identifies process version.

1.2.4 Awfprocelemtype

Connects element_types to a process.

COLUMN_NAME	DESCRIPTION
Element_type	The element type.
Node_id	The process node_id.
Version_no	The process version.

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1.2.5 Awfprocfunction

Connects functions (screens or reports) to user and system steps.

COLUMN_NAME	DESCRIPTION
Action_type	"Action type" on general tab for user steps.
Element_type	"Element type" on general tab for user and system steps.
Menu_ref	"Function" on general tab for user and system steps. Points to the menu_ref in awfelemtypemenu (asyselemtypemenu in SP2).
Menu_ref_ao	"Action overview function" on general tab for user and system steps. Points to the menu_ref in awfelemtypemenu (asyselemtypemenu in SP2).
Node_ id	The step that this function is connected to.
Variant	"Variant" on general tab for user and system steps.
Version_no	The process version.

1.2.6 Awfprocaction

Connects actions to a user step.

COLUMN_NAME	DESCRIPTION
Action_code	The action code.
Description	Not in use.
Node_id	The step that this action is connected to.
Sequence_no (SP2 only)	Controls the sequence of actions.
Version_no	The process version.

1.2.7 Awfprocdelay

Stores delay step properties.

COLUMN_NAME	VALUE	DESCRIPTION
Bflag	1	Set the first time a delay node with new_flag set is run.
Distr_type		Not in use.
Element_type		"Element type" on Delay tab for delay steps.
End_time		Not in use.
Event_id		Not in use.
Last_run		When the delay node last was checked by the workflow service.
New_flag		"New items only" on Delay tab for delay steps.
Node_id		The delay step node_id.
Number_1		"Number" on Delay tab for delay steps.
Run_interval		"Minutes" on Delay tab for delay steps
Start_time		Not in use.
Time_type		Not in use.
Time_unit		"Time unit" on Delay tab for delay steps.
	D	Days.
	H	Hours.
	M	Minutes.
	W	Weeks.
Version_no		The process version.

1.2.8 Awfprocdelaydet

Stores rows in the spread in delay step properties.

COLUMN_NAME	VALUE	DESCRIPTION
Attribute_id		"Attribute" on Delay tab for delay step.
Column_name		"Column name" on Delay tab for delay step.
Column_name2		"Based on" on Delay tab for delay step.
Delay_type		"Type" on Delay tab for delay step.
	1	Time.
	2	Column.
	3	Attribute/relation.
Element_type		"Element type" on Delay tab for delay steps.
Field_no		Not in use.
Field_op		Not in use.
Node_id		The delay step node_id.
Operator1		"Operator" on Delay tab for delay steps.
Rel_attr_id		"Relation" on Delay tab for delay steps.
Sequence_no		Uniquely identifies the row within the delay.
Table_name		"Column name" or "Based on" on Delay tab for delay step.
Time_type		"Time type" on Delay tab for delay step.
	A	After.
	B	Before.
Time_unit		"Time unit" on Delay tab for delay step.
	D	Days.
	H	Hours.
Value		"Value" on Delay tab for delay step.
Version_no		The process version.

1.2.9 Awfprocdeadlines

The deadlines connected to a user step.

COLUMN_NAME	VALUE	DESCRIPTION
Action_code		"Perform" on Deadlines tab for user steps.
	RM	Reminder.
	AP	Approve.
	ES	Escalate.
		User defined action codes.
Column_name		"Based on" on Deadlines tab for user steps.
Field_no		Not in use.
Include_parked		"P" on Deadlines tab for user steps.
Involve		"Involve" on Deadlines tab for user steps
	USR	User.
	SUP	Supervisor.
Last_run		When the deadline last was checked.
Node_id		The step the deadline applies to.
Number_1		"Number" on Deadlines tab for user steps.
Schedule_id		Only used in SP2, stores schedule_id for scheduled deadlines
Time_type		"Time type" on Deadlines tab for user steps.
	A	After.
	B	Before.
	R	Running.
	S	Scheduled (SP2 only).
Time_unit		"Time unit" on Deadlines tab for user steps.
	D	Days.
	H	Hours.
	M	Minutes.
	W	Weeks.
Type		"Type" on Deadlines tab for user steps.
	STEP	Step.
	TASK	Task.
Version_no		The process version.

1.2.10   Awfprocrole

Users and roles that have been stored in the manual distribution tab for a user step.

COLUMN_NAME	DESCRIPTION
Node_id	The node_id.
Role_id	A role or user tied to the user step.
Version_no	The process version.

1.2.11   Awfuseraction

Contains user defined actions, defined in User defined action (WF22).

COLUMN_NAME	VALUE	DESCRIPTION
Action_code		Action code in WF22 (must be at least three characters).
Availability		General in WF22.
Description		Description in WF22.
Element_type		Element type in WF22.
Node_id		Not in use.
Status		Not in use.
Sys_act_code		Behaviour in WF22.
	AP	Positive.
	RJ	Negative.

1.3 Rules

1.3.1 Awfrulegroup

This is where we store our rule groups.

COLUMN_NAME	VALUE	DESCRIPTION
Description		"Rule group" in WF09.
Group_type		Is this a distribution rule or an OR-split rule.
	D	Distribution.
	O	OR split (not displayed in WF09, configured on OR split branches).
Rule_group_id		Uniquely identifies the rule group.
Status		Topmost "Status" in WF09.
	N	Normal
	C	Closed
Version_no		The process version, only used for OR split rule groups.

1.3.2 Awfrule

Header properties for rules are stored here.

COLUMN_NAME	VALUE	DESCRIPTION
Date_from		"Date from" in WF09.
Date_to		"Date to" in WF09.
Description		"Rule" in WF09.
Field_no		"Rule based on" in WF09, these values are retrieved from awffield.
Group_type		No longer used.
Priority		"Priority" in WF09.
Rule_group_id		The rule group this rule belongs to.
Rule_id		The rule_id that uniquely identifies this rule.
Status		The bottommost "Status" in WF09.
	N	Normal.
	C	Closed.
Version_no		The process version, only used for OR split rules.

1.3.3 Awfruledet

Data specification and routing for rules.

COLUMN_NAME	VALUE	DESCRIPTION
Att_parent_no		Not used.
Attribute_id		"Attribute" in WF09.
Att_val_from		Not in use.
Att_val_op		Topmost "Operator" in WF09.
	=	Like.
	!=	Not like.
	<>	Between.
	!<>	Not between.
	>	Greater than.
	>=	Greater than or equal to.
	<	Less than.
	<=	Less than or equal to.
	()	In list.
	!()	Not in list.
Att_val_to		Not in use.
Att_value		"Value" in WF09, also used to store table_name for rules based on columns (SP1, table_name is used in SP2).

COLUMN_NAME	VALUE	DESCRIPTION
Column_name		"Column name" in WF09.
Element_type		"Element type" in WF09.
Field_op		Bottommost "Operator" in WF09.
Number_from		Not in use.
Number_to		Not in use.
Priority		"Seq" in WF09.
Recip_type		Not in use.
Recipient		"Recipient" in WF09.
Recipient_group		Not in use.
Rel_attr_id		"Relation" or "Via relation" in WF09.
Rel_val_from		Not in use.
Rel_val_to		Not in use.
Rel_val_op		"Operator" in WF09.
Rel_value		"Value" in WF09.
Rule_id		Uniquely identifies a rule.
Rule_type		Bflag.
	1	Routing.
	2	Not in use.
	4	Attribute.
	8	Relation.
	16	Not in use.
	32	From function recipient.
	64	From flexi field group recipient.
	128	Not in use.
	256	Not in use.
	512	Not in use.
	1024	Element type.
	2048	From list recipient.
	4096	Roles from list recipient.
	8192	From attribute recipient.
	16384	From column recipient.
	32768	Recipient from element type (SP2).
	65536	"Aggregate" in OR-split setup tab (requires patch on SP1).
Sequence_no		Uniquely identifies a detail row within a rule.
String_from		Bottommost "Value" in WF09.
String_to		Not in use.
Table_name		Not in use SP1, stores table name for element type rules in SP2.

COLUMN_NAME	VALUE	DESCRIPTION
Value_from		Not in use.
Value_to		Not in use.
Version_no		Process version for OR split rules.

1.3.4 Awffield

Generic column mapping, used in "Rule based on" in WF09.

COLUMN_NAME	DESCRIPTION
Field_no	Uniquely identifies the field.
Title_no	The column title.

1.3.5 Awfcolumns

Maps generic columns to specific columns.

COLUMN_NAME	DESCRIPTION
Field_no	Uniquely identifies the field.
Wf_column_name	The column to map the generic column to.
Wf_table_name	Table name, can be blank.

1.4 User information

1.4.1 Awfalternate

Contains definition of supervisors and substitutes, defined in the Alternates tab of Workflow user information (WF15).

COLUMN_NAME	VALUE	DESCRIPTION
Act_date_from		Active from date in WF15, used only for substitutes.
Act_date_to		Active to date in WF15, used only for substitutes.
Alternate_type		The type of alternate.
	SUP	Supervisor.
	SUB	Substitute.
Attribute_id		Attribute in WF15.
Bflag		Find alternate in WF15, determines how the recipient is found.
	4	Attribute value recipient.
	8	Via relation recipient.
	2048	Recipient chosen in list.
Date_from		Date from in WF15.
Date_to		Date to in WF15.
Recipient		Alternate in WF15.
Recurrence_id		Not in use.
Rel_attr_id		Via relation in WF15.
Role_id		Role in WF15.
Sequence_no		Used in unique key.
Wf_user_id		User in WF15.

1.4.2 Awfuserdetail

Contains definition of amount limits, defined in the User detail tab of Workflow user information (WF15).

COLUMN_NAME	VALUE	DESCRIPTION
Amount_limit	Limit	Initiated in WF15 (how much you can approve on items you have entered yourself).
Amount_limit2	Limit	Allocated costs in WF15 (how much you can approve when your resource_id or user_id is in the accounting string).
Element_type		Element type in WF15.
Mail_flag		Not in use.
Role_id		Role in WF15.
WF_user_id		User in WF15.

1.5 Workflow map

1.5.1 Awfobjectmap

Connection between workflow and items on workflow.

COLUMN_NAME	DESCRIPTION
Check_sum	Used to check for changes in the item on workflow.
Composite_key	For debug purposes.
Oid	Uniquely identifies an item on workflow.
Map_table_name	The map table that contains the workflow item key columns.
Wf_group	Groups different items on workflow (i.e. rows in an invoice).

1.5.2 Awfmaphead

Corresponds to the process level in awfprocess/process definition.

COLUMN_NAME	VALUE	DESCRIPTION
Action_code		The last action in the workflow map.
Bflag (SP2)	1	Sub process.
	2	Comments in map.
Distr_date		when the map was distributed.
Element_type		Element type of the item.
Finished_date		When the map was finished.
Initiator		The user that distributed the workflow map.
Map_head		Uniquely identifies a workflow map.
Node_id		The node_id of the process node.
Oid		Uniquely identifies an item on workflow.
Version_no		The version of the process node.
Wf_group		Groups different items on workflow (i.e. rows in an invoice).
Wf_status	ABO	Aborted.
	ACT	Active.
	DEC	Deactivated.
	FIN	Finished.
	FNS	Finished (sub process).
	TMD	Timed out.
	WTN	Waiting.

1.5.3 Awfmap

Corresponds to a step in awfprocess/process definition

COLUMN_NAME	VALUE	DESCRIPTION
Bflag	1	Changes in map.
	2	Delay triggered before map active (No longer used.).
	4	Speculative distribution.
	8	Redistributed.
	16	Comments in map (SP2).
Distr_date		When the map was distributed.
Distr_user		The user that distributed the map.
Element_type		Element type of the item.
Finished_date		When the map was finished.
Last_deadline		When the last deadline triggered for the map.
Logged_values		Stores values chosen for logging in element type details.
Long_info		Stores distributor comments.
Map_group		Used together with next_map to tie together the steps within the map_head.
Map_head		Uniquely identifies an instance of a process.
Map_id		Uniquely identifies an instance of a step in a process.
Next_map		Points to the next map_group within the map_head.
	1	No more maps.
	2	Paused distribution.
Node_id		The node_id of the step.
Oid		Uniquely identifies an item on workflow.
Ready_date		When the map was made active.
Step_type	A	And split.
	D	Delay.
	G	Sub process.
	M	Manual user step.
	N	And join.
	O	Or split.
	P	User step.
	R	Or join.

COLUMN_NAME	VALUE	DESCRIPTION
	S	System step.
	Y	Sync step.
Version_no		The version of the step.
Wf_group		Groups different items on workflow (i.e. rows in an invoice).
Wf_status	ABO	Aborted.
	ACT	Active.
	DEC	Deactivated.
	FIN	Finished.
	SKP	Skipped.
	TMD	Timed out.
	TRG	Triggered delay (no longer used).
	WTN	Waiting.

1.5.4 Awftask

Corresponds to a task for a user within a step instance.

COLUMN_NAME	VALUE	DESCRIPTION
Action_code		The action taken on the task, two letter codes are system defined actions, others are defined in **awfuseraction.**
	AT	Auto approved.
	AB	Aborted.
	AP	Approved.
	ES	Escalated.
	FW	Forwarded.
	PA	Parked, will be replaced by a real action code when the item no longer is parked.
	RJ	Rejected.
	SP	Split, this action code will only be seen in awftask for SP1. From SP2 onwards a real action code must be set on split rows.
Action_date		When the action was taken.
Active	1	If the task still is valid.
Bflag	1	First task in map.
	2	Comments in map (SP2).
Col?_descr		Description for a column chosen to be displayed in the task list in element type details.

COLUMN_NAME	VALUE	DESCRIPTION
Col?_dt		Data type for a column chosen to be displayed in the task list in element type details.
Col?_value		Value for a column chosen to be displayed in the task list in element type details.
Comments		Comment from when task was performed.
Distr_date		When the task was distributed.
Distr_type		How the task was generated.
	E	Escalated.
	F	Forwarded.
	I	Workflow initiator.
	M	Manually added.
	O	Last owner of task.
	R	Rule.
	U	Items to follow up.
Distr_user		User that distributed the task.
Element_type		Element type of the item.
Last_deadline		When the last deadline triggered for the task.
Lock_id		Used to detect concurrent updates of the same task.
Logged_values		Stores values chosen for logging in element type details.
Long_info		Gives information about how the task was generated.
Map_id		Uniquely identifies an instance of a step in a process.
Next_id		Points to the next task_group in the step.
	0	No next map.
Node_id		The node_id of the step.
Version_no		The version of the step.
Orig_task_id		The task_id of the predecessor task if escalated or forwarded.
Orig_user		The user that the rule found, may not be the same as wf_user_id due to fraud_detection, escalation or forwarding.
Ready_date		When the task was set to wf_status active.

COLUMN_NAME	VALUE	DESCRIPTION
Real_user		The user that performed the task.
Role_id		The role that received the task, blank if no role.
Task_group		Used together with next_id to tie together the tasks within the map_id.
Task_id		Uniquely identifies (together with map_id) a task within a step instance.
Oid		Uniquely identifies an item on workflow.
Wf_group		Groups different items on workflow (i.e. rows in an invoice).
Wf_status	ABO	Aborted.
	ACT	Active.
	AUT	Automatically approved.
	ESC	Escalated.
	DAC	Deactivated (not found in the database, shown in the workflow map when the column active is 0 for a row).
	FIN	Finished.
	FWC	Finished with changes.
	FWD	Forwarded.
	REJ	Rejected.
	TMD	Timed out.
	WTN	Waiting.
Wf_user_id		The recipient of the task, the user that is supposed to perform the task.

1.5.5 Awftaskrule

Corresponds to a rule data specification row for a task

COLUMN_NAME	DESCRIPTION
Att_parent_no	Unused.
Attribute_id	The attribute matched by the rule.
Att_value	The attribute value matched by the rule.
Field_no	The field matched by the rule.
Map_id	Uniquely identifies an instance of a step in a process.
Rel_attr_id	The attribute of the relation matched by the rule.
Rel_value	The relation value matched by the rule.
Rule_id	The rule that was matched.
Rule_type	The rule type that was matched.

COLUMN_NAME	DESCRIPTION
Sequence_no	Used to identify a taskrule row within a task.
Task_id	Uniquely identifies (together with map_id) a task within a step instance.
Value_1	The numeric value that was matched by the rule (if any).

1.5.6 Awfmapconn

Ties together maps for connected rows

COLUMN_NAME	DESCRIPTION
Map_head	One of the maps being connected.
Map_head2	The other map being connected.

1.5.7 *fin

When workflow is finished for all rows in a wf_group the workflow is moved to these tables.

1.5.8 *histr

Not yet in use, same concept as the *fin tables

1.5.9 *wtn

Used by initial delay nodes in processes to keep track of which rows have already been processed. These tables are named by appending wtn to the table name (i.e. acutrans -> acutranswtn). They consist of the unique index in the main table (client, voucher_no, sequence_no for acutrans), as well as node_id.

1.6 Workflow service

1.6.1 Awftrans

The work table for the workflow service.

COLUMN_NAME	VALUE	DESCRIPTION
Trans_guid		Uniquely identifies a work item in awftrans.
Trans_head		Used to group multiple work items.
Status	N	Normal.
	E	Error, by default the workflow service will try to process this row every 15 minutes (controlled by WF_READ_E_TRANS_INTERV – see release notes for more).
Wf_action		The action the workflow service is to perform.
	ADDSTEP	A step has been manually added to a distribution.
	ALERT	Something has been distributed online; the service sends the alert.
	CHANGETRD	Changes have been done on a data row that trigger a full redistribution.
	DEADLINE	A deadline has been exceeded.
	DELAY	A delay point has been reached; this work item will not be executed until start_time is reached.
	DISTRIBUTE	Something is to be distributed.
	FLUSHCACHE	Flushes the caches.
	FWC	Changes have been done on a data row that may trigger a redistribution according to the properties of the step.
	FWCOTHER	Changes have been done on a row in another process.
	INITSUBP	A subprocess has been reached.
	MANDISTR	A save in manual distribution (currently only from VP10).
	MAPFIN	A map (step instance) is finished.
	MESSAGE	Used for communication between service instances in a cluster.
	MOVETOFIN	Moves all workflow items to the *fin tables for a wf_group.
	SETACTION	An action has been set on a task.

COLUMN_NAME	VALUE	DESCRIPTION
	SETFINTST	A distribution has been finished; wf_state will be updated if the wf_group is finished.
	SPLIT	Something has been split.
	SYNC	A synchronisation step has been reached.
	SYSTPFIN	A system step is finished.
	SYSTPSTART	A system step will be started.

1.6.2 Awftransdet

Details for the work items in awftrans.

1.6.3 Awfservice

Used by the workflow service for load balancing, contains one row for each running workflow instance.

COLUMN_NAME	VALUE	DESCRIPTION
Bflag	1	Service instance processes deadlines.
	2	Service instance processes delays.
End_time		When other workflow services in the cluster will consider this service dead unless the timestamp is updated.
Last_update		Last time this workflow instance updated its awfservice row.
Lock_id		Used to detect concurrent updates.
Process_id		The process id of the workflow service (SP2).
Range_from		The start of the range of wf_groups processed by this service.
Range_to		Then end of the range of wf_groups processed by this service.
Server_name		The machine name where the service is running.
Service_id		A string guid uniquely identifying the service instance.
Start_time		When the service instance was started.

COLUMN_NAME	VALUE	DESCRIPTION
Status	N	Active.
	T	Terminated normally.
	E	The service instance end_time has expired, another service has set status E and the workload will be redistributed.

1.7 Items that are on workflow

1.7.1 *map

All items that are on workflow are assigned a guid that is stored in these map tables. The map tables are named by appending map to the table name (i.e. acrtrans -> acrtransmap). The map tables consists of the unique index in the main table (client, voucher_no, sequence_no for acrtrans), as well as the void column with an unique index on both.

1.7.2 Workflow item tables

The table in an element type that has blank table_det column in asys/wfelemtype will normally have a wf_state column. Unless "Leave workflow status unchanged" has been selected for å process this column will be updated to W while an item is on workflow. If it is rejected while it is on workflow it will be set to R. When all the awfmaphead rows with the same wf_group are done the wf_state will be updated to N,T or C according to what happened in the workflow.

COLUMN_NAME	VALUE	DESCRIPTION
Wf_state	(blank)	No workflow
	A	Row upgraded from 5.4
	C	Row is rejected, workflow is finished.
	N	No workflow.
	T	Row is approved, workflow is finished
	R	Row is rejected, but workflow is not finished yet. This will change to W once the row is approved by someone in the workflow
	U	Row is in "Items to follow up"
	W	Row is on workflow
	X	Row is not yet sent to workflow

2 Known Issues

2.1 Caching

Element type setup, and most other fixed data is cached. If changes are made to these values then either restart the servers, or make sure that the caches are flushed.

To flush the cache in the workflow service, run this SQL:

MSSQL:

Insert into awftrans (wf_action,status,trans_guid,wf_group) values ('FLUSHCACHE','N',newid(),'X').

Oracle:

Insert into awftrans (wf_action,status,trans_guid,wf_group) values ('FLUSHCACHE','N', sys_guid(),'X').

2.2 Element type details

Changing what data is displayed in the task list is *not advisable* when there are active workflows (configured by selecting "Task list" in WF19 – Element type details). Changing this only takes effect for new items (after caches have been flushed). The only way of making old items be displayed correctly and avoiding errors because of inconsistencies between setup and actual values is to run SQL updates with joins to set the correct information in awftask.

2.3 Delay nodes

New delay nodes in a process will not be used right away. Delay nodes are processed by a background thread in the workflow service, and by default this thread will check every 30 minutes if there are new delay nodes to check (controlled by WF_DELAY_RELOAD_INTERVAL).

A given row in a table will only be picked up by an initial delay node once for a given workflow process. This is controlled by the *wtn tables. This means that having an initial

delay node to trigger a process that can happen more than once is a bad idea (i.e. it will not work).

2.4 Deadlines

The workflow service has a background thread that checks deadlines. This thread will by default check every 30 minutes if there are new deadlines to check (controlled by WF_TIMER_RELOAD_INTERVAL). It will only check deadlines for steps that are active, so if you have deadlines that are very short for demo purposes you will need to adjust this.

2.5 Counters

If invoice manager upgrade has been run incorrectly or if workflow setup has been copied between clients then you may run into a situation where the counters that control rule_id (WF_RULE) and node_id (WFPROCESS_NEXTNODE) get out of sync with what is in the database. If new nodes in awfprocess have node_ids less than 10.000 you probably have a problem.

2.6 Process designer is blank

We have had cases where the process designer tree is completely blank. This is caused by no rows in awfprocess with parent_id -1 having first_flag set. We think this happens if you move processes or branches in the process tree. This has been patched, but there have been reports after that as well. We are not sure if this is caused by unpatched clients or if there still are bugs in the code that causes this.

The same thing can happen for a process in the process designer canvas, i.e. no rows have first_flag set, so no process is drawn.

3 Tips and tricks

3.1 Logging

To get query logging in the workflow log you can either set the common parameter WF_LOGLEVEL to "console=4", or set the business server property WF_LOGLEVEL to "console=4". After you have set this parameter you must restart the workflow service.

The different values possible are:

- "console=1" – Errors
- "console=2" – Warnings
- "console=3" – Information
- "console=4" – Queries

There is a bug in SP1 that makes it necessary to set some additional parameters to get query logging. Create these common parameters with the values specified below and restart the workflow service, but make sure you turn them off after you are done recreating the problem because they force the workflow service to not use worker threads:

Name: WF_MAX_THREADS, **value:** 1
Name: WF_SERVICE_ASYNC, **value:** -1

3.2 Aggregation

To aggregate all the values in an item (e.g. all the rows in an invoice), set WF26 to aggregate on CLIENT (A3).

3.3 Debugging

To debug what the workflow service does step by step you can start the workflow service from the command line:

WorkflowService -sDEBUGU serverdatasourcename

This will make the workflowservice only process rows in awftrans that have status U (you can choose any letter you like, except N or E). New awftrans rows get status N so these will not be processed until you manually update their status to U. This will enable you to check in the workflow tables when a given status is updated, rows are inserted or deleted or anything else that you need to figure out. Stop the workflow service by typing EXIT (in all caps) and hitting return. When you run the workflow service in this way you will not get anything in the workflow log. It will not check deadlines or delay nodes, and you will not find a row in awfservice for the running instance. This means that if there is a normal workflow service running against the database it will not be disturbed, but you need to be quick when you update the status from N to something else for new rows or the normal workflow service will pick them up.

To debug deadlines use this switch: -**sDEADLINE**.
This will run through one pass of checking deadlines and then stop.

To debug delay nodes use this switch: -**sDELAY**.
This will run through one pass of checking delay nodes and then stop.