Meta-Archive

Meta-Update Archiving Solution

This presentation describes the Meta-Archive, the Meta-Update Archiving Solution.

It comprises Instructions for use and configuration, and describes the scripts.

Software Tool House Inc.

Ben Chernys

2015-Sep-30

Release 5.56

Objectives

ITSM Archiving Pain Points, Challenges. Requirements
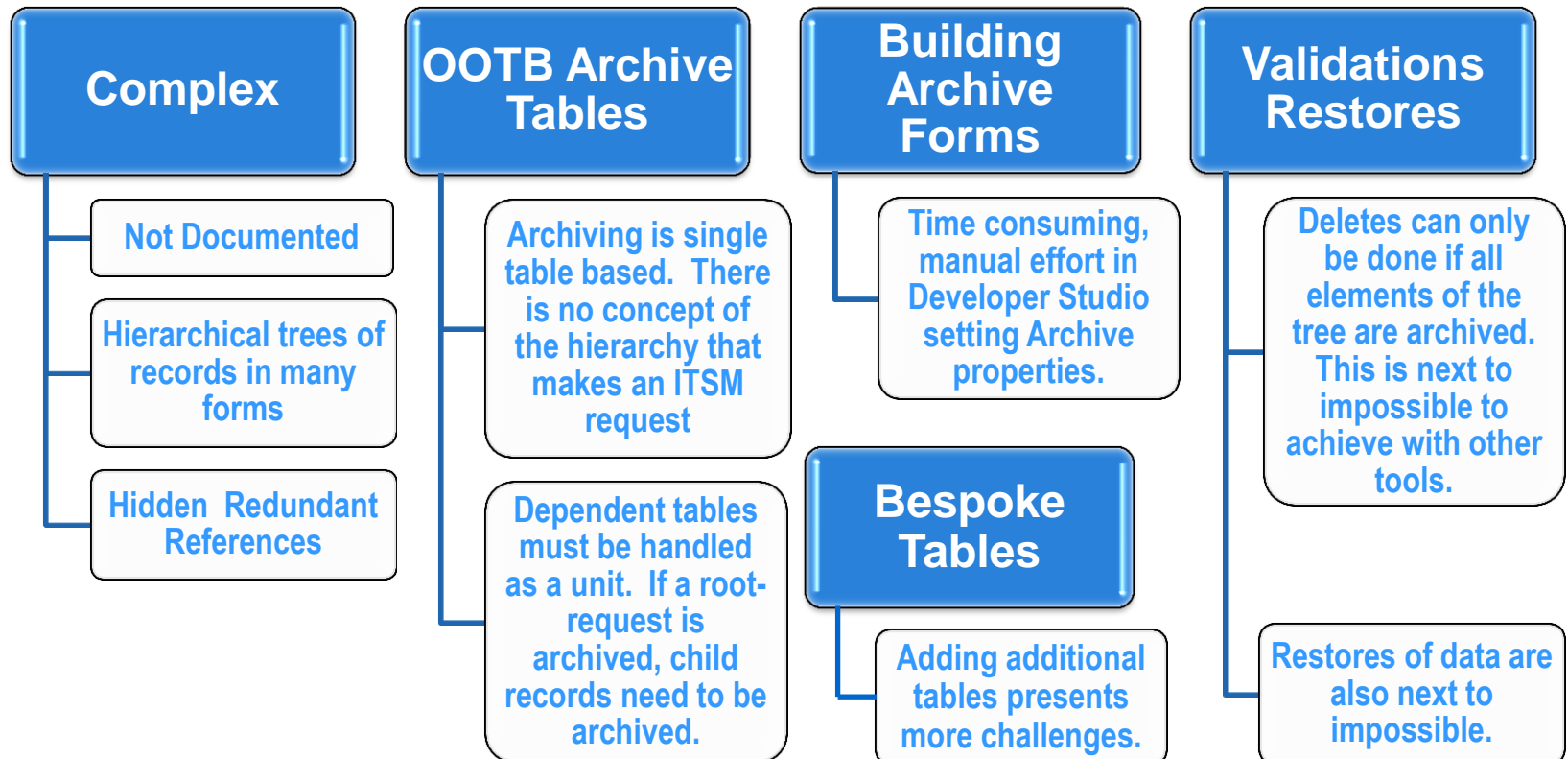
Meta-Update In A Nutshell

Meta-Update Archiving Solution

Configuration Files
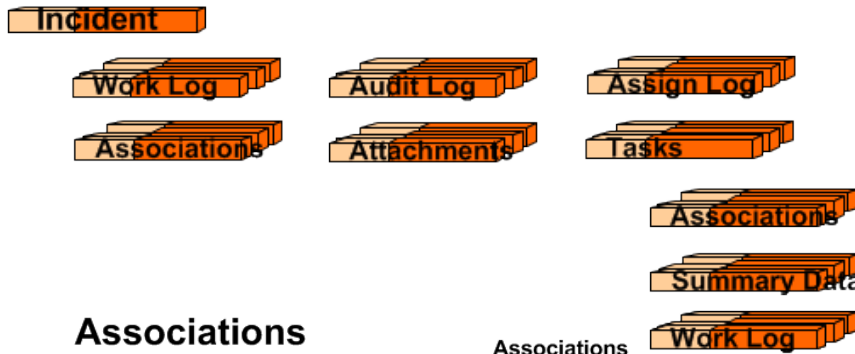
Archiving Forms: Creating and Administering

Archiving and Restoring

More Information, Next Steps

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ITSM Archiving Pain Points

Complex

- Not Documented
- Hierarchical trees of records in many forms
- Hidden Redundant References

OOTB Archive Tables

Archiving is single table based. There is no concept of the hierarchy that makes an ITSM request

Dependent tables must be handled as a unit. If a root-request is archived, child records need to be archived.

Building Archive Forms

Time consuming, manual effort in Developer Studio setting Archive properties.

Bespoke Tables

Adding additional tables presents more challenges.

Validations Restores

Deletes can only be done if all elements of the tree are archived. This is next to impossible to achieve with other tools.
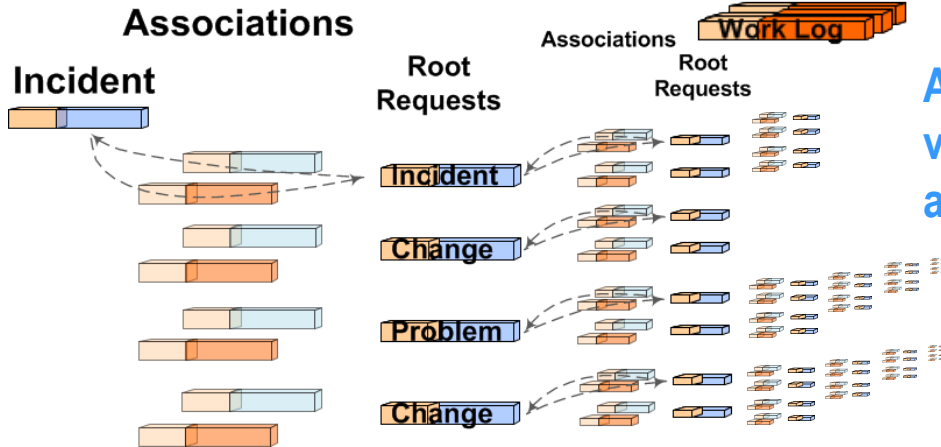
Restores of data are also next to impossible.

ITSM Archiving Requirements

An ITSM Incident is a complex tree of records in many forms and levels.

Archival must treat a single Root Request and its tree of records as *one unit*.

An ITSM Incident may be associated to a variety of other root requests. These are also associated to other root requests.
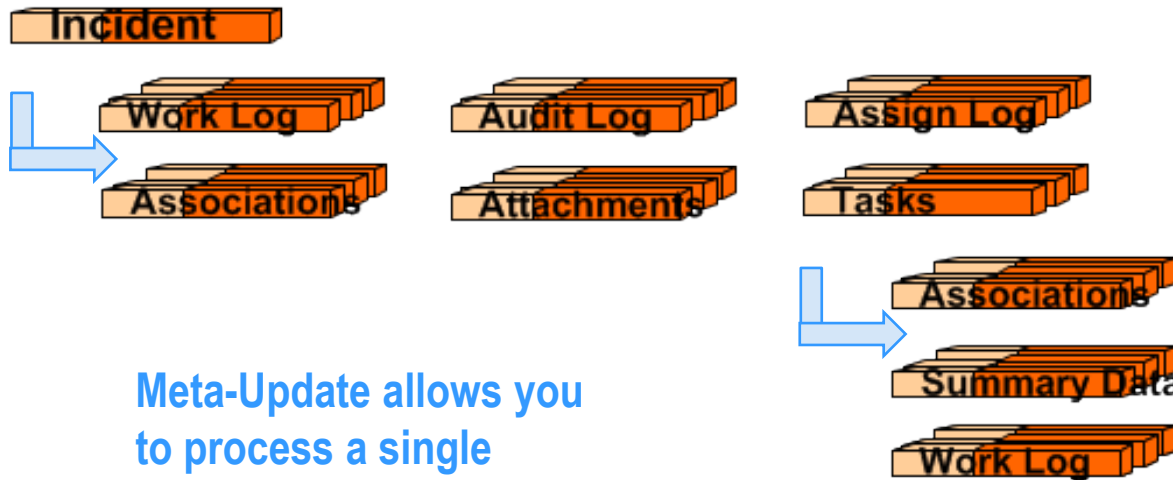
Only if *all* these requests are "archivable", can the original Incident be archived.

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Archiving ITSM Requests

➤ An ITSM Incident is a complex tree of records in many forms and on many levels

A single Incident has children records in Work, Audit, Assignment Logs, Associations, and Tasks.

Each Task has child records in other forms making another tree of records.

Meta-Update allows you to process a single Incident and its tree of records as *one unit*.

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Archiving ITSM Requests

➤ An ITSM Incident may be associated to a variety of other root requests. These requests are also associated to other requests. Only if **all** these requests are "archivable", can the original be considered archivable.
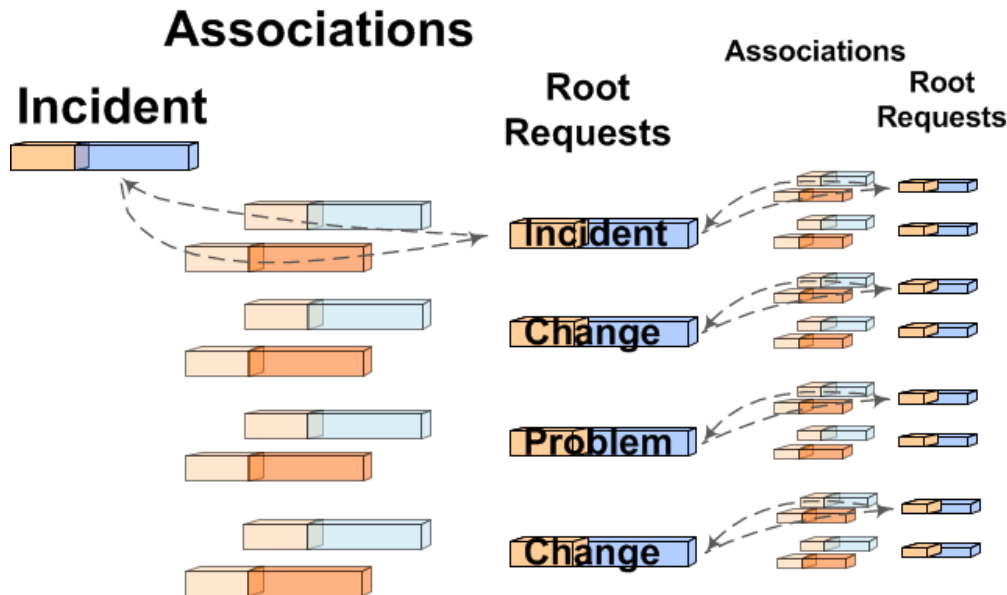
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ETL – Extract Transform Load – Scripting tool

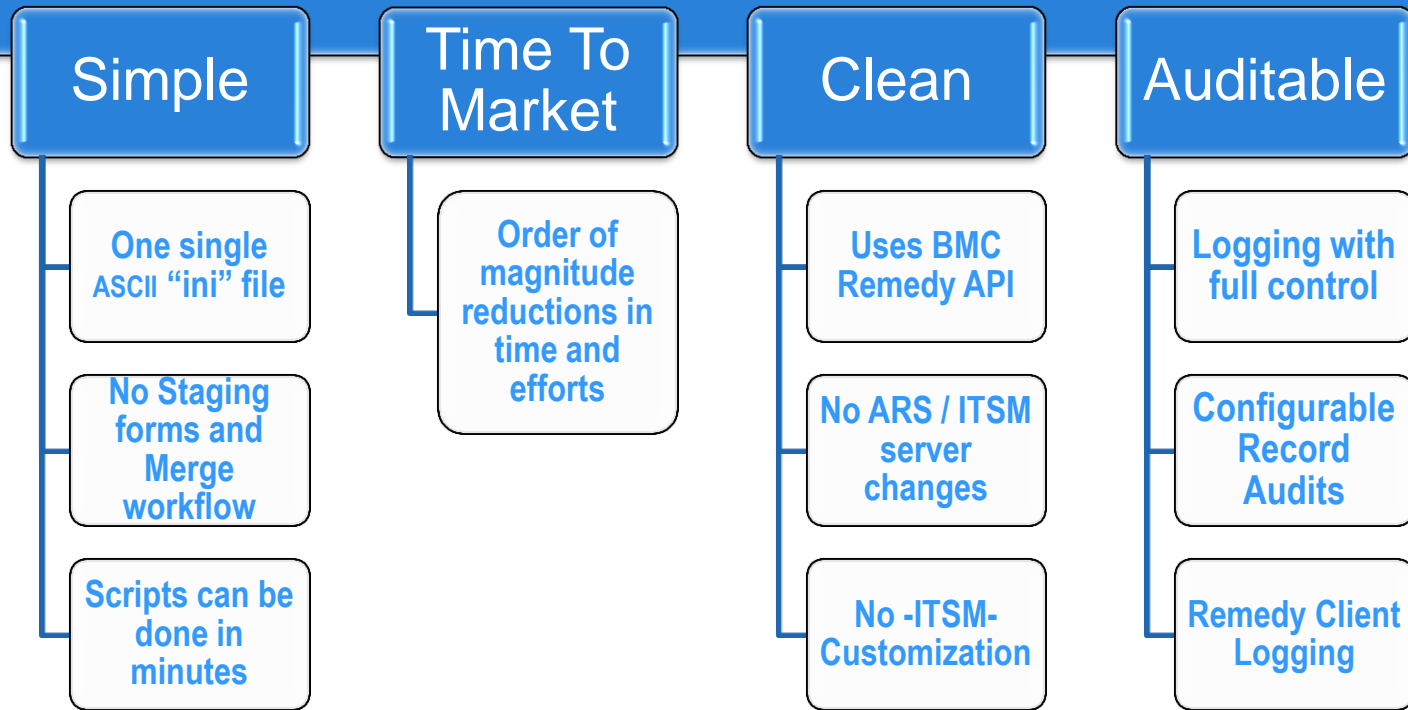- **Meta-Update allows *any* BMC Remedy administrator / developer to automate *any* ETL data operation – in record time.**

with no staging forms, no workflow, no customizations, no server changes.

with no need for API or programming skills.

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Easy, Quick, Robust —
Savings for any Remedy shop

Simple

- **One single ASCII "ini" file**
- **No Staging forms and Merge workflow**
- **Scripts can be done in minutes**

Time To Market

- **Order of magnitude reductions in time and efforts**

Clean

- **Uses BMC Remedy API**
- **No ARS / ITSM server changes**
- **No -ITSM- Customization**

Auditable

- **Logging with full control**
- **Configurable Record Audits**
- **Remedy Client Logging**

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Installation & Running

> Meta-Update must be licensed and installed for the Archive server.

> The Archiving scripts and config files are a separate zip file which must be expanded.

> Validate the configuration spread sheet for your ITSM release and environment. If you make changes, generate the CSVs.

You can fill in our Meta-Update **Trial Request** form and participate in our **Live Install** service. Meta-Update will then be installed, tested and ready for Archiving.

```
Meta-Update\scripts\Meta-Archive\*
```

You're Ready!

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Type	File Name	Expect Customer Configuration	Description
spreadsheet	Arch-Cfg-ITSM-810.xlsx cfg-arch-root.csv cfg-arch-tree.csv cfg-arch-assoc.csv cfg-arch-excl.csv	Yes	This is the main Archiving configuration file. You can use it to change the Archive table names, the ages for Archiving and Associations, to add your own tables, to disable modules of ITSM that you are not using. You may create copies for your different customers should they have differing retention requirements. You can automatically generate the CSV files when you are ready.
spreadsheet	Archive-Cfg-Csv-Tbls.xlsm cfg-tbl-csv-map.csv	Yes	This is an optional Archiving CSV Naming mapping file. This is only used when archiving to CSV files and only if specified.
script	100-Arch-Cfg.ini	Yes	This script fragment contains user configurations for Meta-Archive. For example, archive targets of CSVs or identical forms on alternate servers may be selected. You also set Date formats and a global delete flag. As delivered, this is set to Archive to archive forms only, date format of "mdy" (US), no Deletes performed.
script	115-Arch-SrcServer.ini	Yes	This script fragment is the "Source" (or production) server information. As delivered, this is the same as the "Target" (or archive) server. Identical forms on a single server is not possible.

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Type	File Name	Expect Customer Configuration	Description
script	350-Arch-FormsAdmin.ini	No	This script builds all configured Archive forms. It is run once only per environment or when new forms are added to the configuration. It can be used to check the status of all Archive forms. It will skip any forms already built if run more than once.
script	500-Arch.ini	No	This script performs archives and restores. During the initial run, when there is a large backlog of records that must be archived, it is expected that Meta-Update Job Automation will be used to fire this script job. For testing of script or configuration changes, this script will be fired manually.
script	590-Arch-Del.ini	No	Some archive target options require that the deletes be performed separately. If so, this script performs archive deletes as listed the delete log generated from a Meta-Archive run. This can be added to Meta-Update Job Automation.
document	Meta-Update_Job_Automation_Users_Guide.pdf		Meta-Update Job Automation User Manual.
script	000-Jctl.ini	No	This script does Meta-Update Job Automation and controls series of Meta-Update jobs based on a Meta-Update Job Automation spreadsheet.
spreadsheet	Arch-Jobs-sample.xlsx	Yes	This is a sample Meta-Update Job Automation spreadsheet for Meta-Archive. It is expected that for the initial backlog run that this would be configured for the customer's specific data requirements.
script - included files	000-Jctl-Sync.ini 910-Arch-CfgRd.ini 920-Arch-Assoc-Do.ini 930-Arch-Upd-Csv.ini	No	These scripts are included by the scripts above.

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Script Configurations

100-Arch-Cfg.ini

➢ **100-Arch-Cfg.ini** contains User configurations for date formats, global deletions, CSV separators, archiving targets. Please review and edit this file.

```
📄 100-Arch-Cfg.ini
#   Meta-Update and this script are (c) copyright 1996-2015 by Software Tool House Inc.
#   Meta-Archive and Meta-Update are trademarks of Software Tool House Inc.
#
#   File:       100-Arch-Cfg.ini
#
#           This Meta-Update script fragment contains the User modifiable configurations
#             for Meta-Archive.
#
#           Comments start with a hash at the start of a line and are ignored.
#
# Configuration assignments           These are User configurations and choices.
#                                     Please review.  For example, as delivered,
#                                     Archiving does NOT delete records.
#
#----------------------
```

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Script Configurations

100-Arch-Cfg.ini

➢ Set the date formats and CSV separator.

➢ The Archive script does NOT delete records as they are archived. This simplifies testing.

```
#----------------------
#   Cfg,    QryDateFormt    char      the Remedy Query Date format.  One of:
#                                     mdy | dmy | ymd
#
@Cmd            = Ref,   Cfg,     QryDateFormat,      mdy
#----------------------
#   Cfg,    CsvDelim        char: CSV delimiter:   "," or ";"
#
@Cmd            = Ref,   Cfg,     CsvDelim,          ","
#----------------------
#   Cfg,    Del             bool: 0 No deletes; 1 deletes after a tree is archived
#
@Cmd            = Ref,   Cfg,     Del,              0
#----------------------
```

This is based on the locale of the machine running Meta-Update. In, the EU, for example, "**dmy**" will be used for dates and "**;**" may be used as a separator.

Required date format can be tested with Meta-Query.

The global **Cfg, Del** flag must be changed to 1 to perform any deletes at all. For testing the default of 0 is normal.

Script Configurations

100-Arch-Cfg.ini

➤ Select Archiving targets. Multiple targets can be selected except Forms and Archives are mutually exclusive.

```
#-----------------------
#   Cfg,     ArchOutCsv       bool: 1 in addition to archive forms, output to CSV is also done
#                                   0 no output to CSV is done
#                                   The AttachFname setting will be used to store attachments to the file system
#   Cfg,     ArchOutArch      bool: 1 output to archive forms on the target server
#                                   The Read and Target servers may be the same or different or the same
#   Cfg,     ArchOutForm      bool: 1 output to identical forms (with possible new names) on the target server
#                                   This means that the ReadServer and the Target server MUST (if not new names)
#                                   be different servers.  This is checked.
#   Cfg,     ArchOutFormNmEq bool: 1 ignore the "Archive Name" config fields; Forms have the same name but
#                                     be on different servers
#                                   0 use Archive Name configs for OutForm - may be the same server
@Cmd         = Ref,   Cfg,    ArchOutCsv,        1
@Cmd         = Ref,   Cfg,    ArchOutArch,       1
@Cmd         = Ref,   Cfg,    ArchOutForm,       0
#                                   not used yet - assumed true
@Cmd         = Ref,   Cfg,    ArchOutFormNmEq,   1
#
#    For ArchOutCsv there are a bunch of other configs plus the -mapTblCsv argument
#   Cfg,     ArchOutCsvNm    bool: 1 output file names include -start and -max
#
@Cmd         = Ref,   Cfg,    ArchOutCsvNm,      1
#-----------------------
```

Csv target creates CSV files and attachment files and can be selected with one of Arch or Form.

Form and Arch are mutually exclusive.

If Form is selected, the target server is the archive server and must be different than the source server.

If Arch is selected the target server and the source server must be the same server.

Script Configurations

115-Arch-SrcServer.ini

➢ Set source server access info.

```
115-Arch-SrcServer.ini

#   Meta-Update and this script are (c) copyright 1996-2015 by Software Tool House Inc.
#   Meta-Archive and Meta-Update are trademarks of Software Tool House Inc.
#
#   File:       115-Arch-SrcServer.ini
#
#           This Meta-Update script fragment contains the Archive Source Server addressing and
#             sign-on args for Meta-Archive.
#
#           As delivered, this is the same server as the licensed target server.
#
#           Comments start with a hash at the start of a line and are ignored.
#

Server      = $ ENV,  ArsSvrAdmin  $
Port        = $ ENV,  ArsPort      $
User        = $ ENV,  ArsUsr       $
Password    = $ ENV,  ArsPwd       $
```

This is the same as the target archive server and uses environment variables as set by `SthLic.cmd`

`SthLic.cmd` can be modified to set other variables such as `ArsArchSvr` so that sets of server pairs are defined for environments such as Dev, QA, Prod.

Meta-Archive Introduction

This spreadsheet is a configuration for the **Meta-Archive Scripts** for the OOTB ITSM 8.1 for the **Incident, Change, Problem, Known Error, Release, Work Order** root requests. This sheet may be adapted to include your own forms or for other root requests.

Contents

Instructions and Settings

This explains the other sheets in detail. Please read this page to adapt this for other modules or your own customized tables.

Config

Use this sheet to set the archive table names (in formulas) and to create appropriate CSV extract files (with a macro).

root

This sheet defines root forms. All Root Form requests to be archived should be listed in this sheet. Records are queried from these forms and all dependent records (given by the "tree" sheet) are archived for requests returned by this query.

tree

This sheet describes the tree of forms and linking fields from the root forms. It can specify forms on two levels. The first level is directly related to a root form and the second level is related to a form on the first level. An example is a Task. A Task has its own set of forms with records related to only the Task form, hence these forms are on level 2.

assoc

This sheet describes the associations and linking fields from the root forms. A root request can only be archived if and only if all its associated root requests can be archived. This sheets configures association rules and tables.

exclusions

This sheet lists individual Customer companies that will be excluded by the script with this configuration file.

Meta-Update

Meta-Update is used to automate any ARS / ITSM data **ETL - Extract, Transform, Load** operation:

— without staging forms, workflow, or any server changes at all
— without any programming skills at all
— in a language your ARS admin already speaks

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Archive configuration for ITSM 8.1.0

Want more information about Meta-Update? Please click the following links:

Management Summary Presentation

Learning Meta-Update

Trial License Request

Live Install

Contents | Instructions | Config | root | tree | assoc | exclusions | Change Log

config	Set global configuration arguments and generate CSV files.
ITSM Release	Used in formulas related to the CMDB table changes
Archive Name	Specifies an Archive form name suffix for formulas in the root and tree sheets
🔘	Specify a path and name and press the button to generate CSV files.

root	Describes each "Root Request" such as Incidents, Problems, Changes, or the CMDB that participate in archiving.
Delete Flag	Should be 1. No deletions of any kind will happen if the root's Delete Flag is not 1; records will still be archived.
Archive Qualification	A qualification that is appended to the archive qualification. It is used to restrict the records to be archived. It used as " ... and (qual)" in the query qualification. Use of "@date@" in the text will be replaced with the archive date age setting and the Date Field will not be used.
Date Field	Name or Id of the date field used to determine records to archive.
Archive Form	The name of the archive form for this Root Request form. The script, 350-
Age	Age of root requests eligible for archiving.
Company Field	If a root request can have customer company specific ages, this specifies the

tree	Describes the tree of forms making up a root request
Level	Must be 1 or 2
Root Form	One of the above forms in the root sheet.
Source Form	The name of a child form of the Upper Form.
Enable	If 1 will participate in the archive script. If 0, table (and all its children) ignored.
Delete Flag	If this form is enabled and the Delete Flag set to 1 then records will be deleted
Upper Form	If the level is 1, this form must equal the Root-Request form. If the level is 2 it must equal one of the level 1 source forms on a *preceding* row.
Source Field	The name of a field that will be queried and makes the dependency against the upper form - the upper form's value on the source form. A query is formed like: `'$Source Field$' = "$Upper Field$"`.
Upper Field	The name of the upper form's field who's value will be in the dependent forms field. A query is formed like: `'$Source Field$' = "$Upper Field$"`.
Archive Form	The name of the archive form for this Source form. The script, 350-`ArchAdmin.ini` will set and reset archive form properties to manage your archive forms according to this configuration sheet.

assoc	Describes the root requests' associations to be validated as ready to be archived before archiving the root request.
Root Form	One of the above forms in the root sheet.
Enable	If 1 will participate in the archive script. If 0,table ignored.
Src Asc Form	The Root Form's Association form.
Tgt Form	When Associated, the value and name of the associated root request form in the association record.
Src Tgt Form Value	A value that in the above field of the **Src Asc Form** that indicates and association with the **Src Tgt Form**.
Src Tgt Form Value	A value that in the above field of the **Src Asc Form** that indicates and association with the **Src Tgt Form**.
Src Asc Id Field	The field of the **Src Asc Form** that contains the source root request id.
Age	Age of root requests eligible for archiving. Set to a formula copying root ages.

CMDB	Lists classes that participate in archiving.
	Specifies class based archive form namess. Used to select classes for archiving and to generate Archive forms from the class Joins.

Exclusions	Lists any companies that should be excluded from this Config file.
Company	Required. If this configuration is for general use - that is a specific company's config file would have 'Company' = "x" added to all Root Queries - then exclude

General Tips

Handling different types of the same root requests

Say you have two different requirements for Incidents depending on the Incident Priority. For example, for one Priority, you may want to archive after three years and for the rest after one year.

The easiest way to do this is to save two copies of this spreadsheet and generate two different sets of CSVs with the qualifications being changed to exclude and include the special company. That is, add the text "'Priority' = "xxx"" and 'Priority' != "xxx" to the incident qualification.

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Config

`Arch-Cfg-ITSM-810.xlsm`

Archive Table Names

Please specify a suffix for Source table names used when naming the Archive table.

Archive Table Name Suffix: -ARC

Suffix used in root and tree sheet formulas for the Archive Table Names. Once built, should not be changed.

Export to CSVs

Please specify an output file "prefix" such as `C:\cfg\cfg-arch`

With `C:\cfg\cfg-arch`, files will be: `C:\cfg\cfg-arch-root.csv`, `C:\cfg\cfg-arch-tree.csv`, `C:\cfg\cfg-arch-assoc.csv`, and, `C:\cfg\cfg-arch-excl.csv`.

Directory `C:\cfg\` must exist before the button is pressed.

Simply copy a directory from Windows explorer and add a file "prefix" such as "cfg-arch-uni-restore", or ,"test-1".

Output files' prefix: `e:\Dta\BST\Dev\Mupd\dev\proj\Unisys\2014-02-14-Arch\cfg-arch-uni-restore`

Press the button to the left to export the files.

With the example, these four files will be created:

```
cfg-arch-root.csv
cfg-arch-tree.csv
cfg-arch-assoc.csv
cfg-arch-excl.csv
```

Unless you start Excel in a specific directory, it is best that an explicit path be specified for the file name prefix.

Make as many of these sets of four files as you need.

You can set up different companies, ages, forms, associations, as needed.

Save copies of the spreadsheet with generated files' prefix for reference.

Macros must be enabled to produce the four CSV files.

Config

Archive Table Names

Please specify a suffix for Source table names used when naming the Archive table.

Archive Table Name Suffix: -ARC

Suffix used in root and tree sheet formulas for the Archive Table Names. Once built, should not be changed.

ITSM Release

Some table entries have a formula in the enabled column depending on this release number. and should conform to BMC release numbering.

ITSM Release 8.1

Enter "8.1", "7.6.04" as needed. Used in root & tree sheet formulas for the CMDB.

Simply copy a directory from Windows explorer and add a file "prefix" such as "cfg-arch-uni-restore", or ,"test-1".

Export to CSVs

Please specify an output file "prefix" such as C:\cfg\cfg-arch

With this example, files will be: `cfg-arch-root.csv`, `cfg-arch-tree.csv`, `cfg-arch-html.csv`, `cfg-arch-assoc.csv`, and, `cfg-arch-excl.csv` - located in folder: C

Directory C:\cfg\ must exist before the button is pressed.

Output files' prefix: e:\Dta\Meta-Archive\cfg-arch

Make as many of these sets of four files as you need.

You can set up different companies, ages, forms, associations, as needed.

Save copies of the spreadsheet with generated files' prefix for reference.

Press the button to the left to export the files.

With the current setting, these files will be created:
```
e:\Dta\Meta-Archive\cfg-arch-root.csv
e:\Dta\Meta-Archive\cfg-arch-tree.csv
e:\Dta\Meta-Archive\cfg-arch-asc.csv
e:\Dta\Meta-Archive\cfg-arch-cmdb.csv
e:\Dta\Meta-Archive\cfg-arch-html.csv
e:\Dta\Meta-Archive\cfg-arch-excl.csv
```

Macros must be enabled to produce the CSV files.

Meta-Update Archive Configuration

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`Arch-Cfg-ITSM-810.xlsm`

Root Request Configuration

The root sheet is the set of ITSM root requests.
These are the Archive configurable items.

Form	Enable	Delete Flag	Archive Qualification	Date Field	Archive Form	Age
HPD:Help Desk	1	1	((('Status' = "Closed" and 'Closed Date' < "@date@") or ('Status' = "Cancelled" and 'Cancelled Date' < "@date@")) and not ('VIP' = "Yes"))	Closed Date	HPD:Help Desk-ARC	1y
CHG:Infrastructure Change	1	1	(('Change Request Status' = "Closed" and 'Closed Date' < "@date@") or ('Change Request Status' = "Cancelled" and 'Last Modified Date' < "@date@") or ('Change Request Status' = "Rejected" and 'Last Modified Date' < "@date@"))	Completed Date	CHG:Infrastructure Change-ARC	1y
PBM:Problem Investigation	1	1	(('Investigation Status' = "Closed" amd 'Closed_Date' < "@date") or ('Investigation [...] and ('Last Modified [...] or ('Investigation Status' [...] st Mod [...] stigati [...] st Mod	Closed_Date	PBM:Problem Investigation-ARC	1y
			s' = "Cl [...] elled"		C	1y

Add **('Company' = "xx")** to the qualifications as needed except on the *default* sheet.

Fill in Company exclusions only on the *default* sheet.

Qualification errors will cause the script to fail.

Validate qualifications with **SthMqry.exe**.

Check or modify the Age and Archive Qualification fields.

You may make copies of the spreadsheet with different qualifications and ages as needed.

The Date Field is ignored when the Qualification includes @date@ which becomes Now – Age.

| ▶ ▶| | Contents | Instructions | Config | root | tree | assoc | exclusions | Change Log |

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Arch-Cfg-ITSM-810.xlsm

Tree Configuration

The tree sheet describes, for each root request, the set of level one and two forms and how they are related.

Incident

Work Log   Audit Log   Assign Log

Associations   Attachments   Tasks

Associations
Summary Data
Work Log
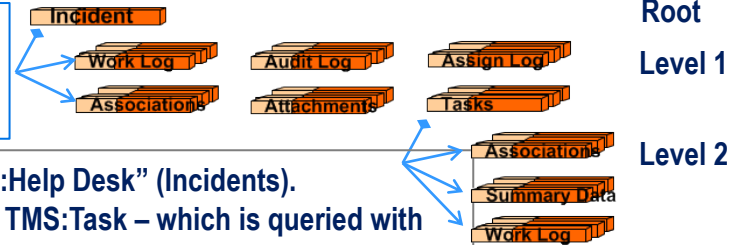
Root

Level 1

Level 2

- The root is "HPD:Help Desk" (Incidents).
- A level 1 form is TMS:Task – which is queried with Incident's data.
- A level 2 form is TMS:WorkInfo – which is queried from TMS:Task's data.

Root Form	Lvl	Source Form	Enable	Delete Flag	Source Field	Upper Field	Archive Form	Source Field View
HPD:Help Desk	1	HPD:Associations	1	1	Request ID02	Incident Num	HPD:Associations-ARC	Request_I
HPD:Help Desk	1	HPD:Attachments	1	1	Incident Number	Incident Num	HPD:Attachments-ARC	Incident_I
HPD:Help Desk	1	HPD:Help Desk Assignment	1	1	Incident Entry ID	1	HPD:Help Desk	Incident_E
HPD:Help Desk	1	HPD:Help Desk Audit Log	1	1	Incident Number	Incident Num	HP	
HPD:Help Desk	1	HPD:HelpDesk_AuditLogSys	1	1	Original Request ID	Incident Num	HP	
HPD:Help Desk	1	HPD:Impacted Areas	1	0	Incident Number	Incident Num	HP	
HPD:Help Desk	1	HPD:IncidentInterface_Crea	1	1	Incident Number	Incident Num	HP	
HPD:Help Desk	1	HPD:WorkLog	1	1	Incident Number	Incident Num	HP	
HPD:Help Desk	1	PBM:Investigation	0	1	Request ID01	Incident Num	PBN	
HPD:Help Desk	1	PBM:Solution DB				Incident Num	PBM:Solution DB	Request_IC
HPD:Help Desk	1	TMS:Association				179	TMS:Association-ARC	RootRequ
HPD:Help Desk	1	TMS:Task				179	TMS:Task-ARC	RootRequ
HPD:Help Desk	1	TMS:Variable				179	TMS:Variable-ARC	RootRequ
HPD:Help Desk	2	TMS:AuditLog				179	TMS:AuditLog-ARC	Audit_Rec
HPD:Help Desk	2	TMS:TaskEffort				179	TMS:TaskEffort-ARC	TaskInstar
HPD:Help Desk	2	TMS:WorkInfo				179	TMS:WorkInfo-ARC	TaskOrTas

Add rows for any customized forms you may have.

Field name errors will cause the script to fail.

Validate field names with SthMsch.exe.
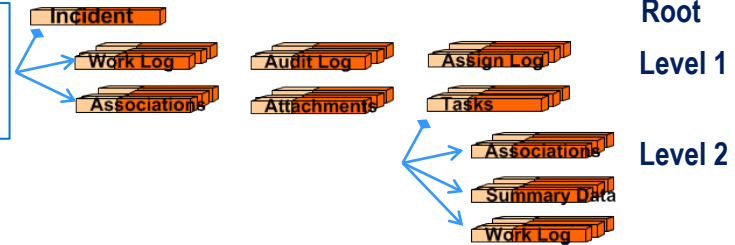
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`Arch-Cfg-ITSM-810.xlsm`

Tree Configuration

The tree sheet describes, for each root request, the set of level one and two forms and how they are related.

Root

Level 1

Level 2

Normal data tables that can contain child records are configured in the tree form.

Join forms may also be configured, even though the tables making up the join forms will also be configured.

Joins may not have required "Core" fields. Remedy generated Archive forms do. Meta-Archive assigns a dot "." for such text fields and the current time for such date fields.

					Upper Field
				Incident Number	
				Incident N...	
HPD:Help Desk	1	HPD:Help Desk Assignment	1	1	Incident Entry ID	1
HPD:Help Desk	1	HPD:Help Desk Audit Log	1	1	Incident Number	Incident N...
HPD:Help Desk	1	HPD:HelpDesk_AuditLogSys	1	1	Original Request ID	Incident N...
HPD:Help Desk	1	HPD:Impacted Areas	1	0	Incident Number	Incident N...
HPD:Help Desk	1	HPD:IncidentInterface_Crea	1	1	Incident Number	Incident N...
HPD:Help Desk	1	HPD:WorkLog	1	1	Incident Number	Incident N...
HPD:Help Desk	1	PBM:Investigation	0	1	Request ID01	Incident N...
HPD:Help Desk	1	PBM:Solution DB	1	1	Request ID01	Incident N...
HPD:Help Desk	1	TMS:Association	1	1	RootRequestInstanceID	179
HPD:Help Desk	1	TMS:Task	1	1	RootRequestInstanceID	179
HPD:Help Desk	1	TMS:Variable	1	1	RootRequestInstanceID	179
HPD:Help Desk	2	TMS:AuditLog	1	1	Audit Record Instance ID	179	TMS:AuditLog-ARC	Audit_Rec
HPD:Help Desk	2	TMS:TaskEffort	1	1	TaskInstanceID	179	TMS:TaskEffort-ARC	TaskInstar
HPD:Help Desk	2	TMS:WorkInfo	1	1	TaskOrTaskGroupInstance	179	TMS:WorkInfo-ARC	TaskOrTas

Meta-Update Archive Configuration

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Arch-Cfg-ITSM-810.xlsm

Associations Configuration

The assoc sheet describes the set of associations to other root requests. This ensures records can only be archived when not associated to other root requests that are not ready for archiving.

Associations
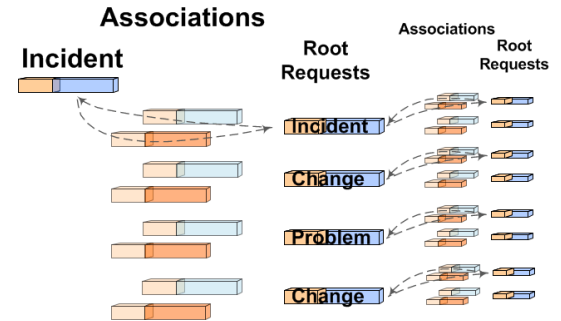
Root Form	Level	En ab l	Src Asc Form	Tgt Form	Age	Src Tgt Form Field	Src Tgt Form Value	Tgt Asc Form	Src Asc ID Field	Src Src ID Fiel	Tgt Form ID Field	Tgt Form Status Field	Status Value Names	Status Values
HPD:Help Desk	1	1	HPD:Associations	PBM:Problem	1d	Form01 R	Problem	PBM:Problem Investigation						
HPD:Help Desk	1	1	HPD:Associations	PBM:Solution	1s	Form01 R	Solution	PBM:Solution DB Associations						
HPD:Help Desk	1	1	HPD:Associations	CHG:Infrastructure Change	1y	Form01 R	Infrastruc	CHG:Associations						
HPD:Help Desk	1	1	HPD:Associations	HPD:...				...ns						

Check or modify the Age fields.

Add rows for any customized forms you may have.

Field name errors will cause the script to fail.

Validate field names with SthMsch.exe.

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`Arch-Cfg-ITSM-810.xlsm`

Used for Multi-tenancy.

Exclusions Configuration

In multi-tenancy environments, you can code one configuration for the default customer and as many as you need to handle other customers.

The exclusions sheet is only used for the default configuration to exclude archiving records from these companies.

Company specific configurations have added Company Qualification in their Root sheet.

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Root Request Configuration
The root sheet is the set of ITSM root requests. These are the Archive configurable items.

Form	Enable	Delete Flag	Archive Qualification	Date Field	Archive Form	Age
HPD:Help Desk	1	1	((('Status' = "Closed" and 'Closed Date' < "@date@') or ('Status' = "Cancelled" and 'Cancelled Date' < "@date@")) and not ('VIP' = "Yes"))	Closed Date	HPD:Help Desk-ARC	1y
CHG:Infrastructure Change	1	1	(('Change Request Status' = "Closed" and 'Closed Date' < "@date@") or ('Change Request Status' = "Cancelled" and 'Last Modified Date' < "@date@") or ('Change Request Status' = "Rejected" and 'Last Modified Date' < "@date@"))	Completed Date	CHG:Infrastructure Change-ARC	1y
PBM:Problem Investigation	1	1	(('Investigation Status' = "Closed" amd 'Closed_Date' < "@date") or ('Investigation ... and ('Last Modified ... or ('Investigation Status' ... st Modified Date' < ... stigation Status' = ... Modified Date' <	Closed_Date	PBM:Problem Investigation-ARC	1y
			... = "Closed" or 'Known ... lled" or 'Known Error	Archive Date	PBM:Known Error-ARC	1y

Add ('Company' = "xx")
to the qualifications as needed except on the *default* sheet.

Fill in Company exclusions only on the *default* sheet.

Contents / Instructions / Config / root / tree / assoc / exclusions / Change Log

Company	Enable
Calbro Services	1
Company1	1
Company2	1

The exclusions sheet is only used for the Default configuration.

Records found to be from these companies are not archived.

Running Archive

Preparing the command prompt
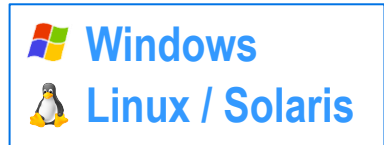
Help on setting up and using a Command Prompt.
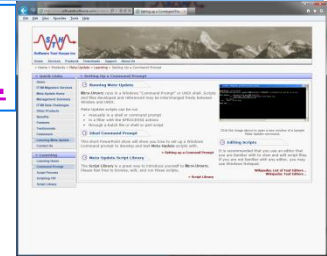
➢ Set PATH

```
path D:\Apps\SoftwareToolHouse\bin;%path%

export PATH=/apps/STH/bin:$PATH
export LD_LIBRARY_PATH=/apps/STH/bin:$LD_LIBRARY_PATH
```

➢ Set Script Path

```
set      SthScriptPath=D:\Dta\Dev\Arch\Scripts\500-
         Archive\Include;%SthScriptPath%

export SthScriptPath=~/Dev/Arch/MupdScripts/500-
         Archive/Include:$SthScriptPath
```

➢ Change to your working directory

```
cd       D:\Dta\Dev\Arch\wrk
cd       ~/wrk
```

➢ Set Meta-Update Licensing

```
SthLic.cmd      dev
. SthLic.sh      dev
```

Help on generating your SthLic file on next page.

Build your SthLic.cmd file

Running

➢Run SthLicUpd to build your SthLic.cmd (or .sh) file. This file will set environment variable for you. You may also encrypt ARS User passwords or edit the generated file.

Do this on your machines.

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Build your SthLic.cmd file

➢ **Run** `SthLicUpd.exe` **to build your** `SthLic.cmd` **(or** `SthLic.sh`**) file. This file will set environment variables.**

Do this on your machines.

➢ **This needs to be run once when you open a new command or terminal window**

➢ **Run** `SthLicUpd.exe` **to encrypt other ARS server passwords if needed.**

```
e:\qqq> SthLicUpd.exe   Prompt   -licpath .\   -out .\SthLic.cmd

SthLicUpd        Version 1.00
        (c) Copyright 1996-2012 by Software Tool House Inc.
        www.softwaretoolhouse.com
..got 2 license files

..for server   1 - sthv1
  Please enter a short name such as dev or prod or nothing to continue [] > dev
  Enter another short name for the server or nothing when done [] >
  Enter the connection address for the server [sthv1] >
  Enter the connection address for the Admin server if different [sthv1] >
  Enter an RPC port or 0 if using port mapper [0] > 2501
  Enter the ARS user id > Demo
  Enter the password for ARS user Demo; use '-' for none > .
  Would you like the password encryped? [Y] >
```

Step 1: Build Archive Forms

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➢ Run Forms Admin script with **set**, **reset**, **check**.

`350-Arch-FormsAdmin.ini`

The **set** operation places a load on the server and should be done off peak hours.

It may take an hour or more to complete.

STH & customer tests on various server releases have shown a possibility of ARS Server crashes!

This seems better in 8.1.

```
Cmd Box

2010-05-03    9:07:35.38
e:\Dta>


  SthMupd 350-Arch-FormsAdmin.ini Do –cmd set
                                 -fle cfg-arch
```

The Meta-Update script sets the archive properties of configured forms causing the archive forms to be built for root forms and their trees.

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Step 2: Remove Archive Links

`350-Arch-FormsAdmin.ini`

➢ Run Forms Admin script with **set**, *reset*, **check**.

The **reset** operation, while *not* placing a load on the server, should be done off peak hours.

STH & customer tests on various server configurations have indicated a possibility of ARS Server crashes!

```
Cmd Box
2010-05-03    9:07:35.38
e:\Dta>


    SthMupd 350-Arch-FormsAdmin.ini Do -cmd reset
                               -fle cfg-arch
```

The Meta-Update script sets the archive properties of configured forms to None severing the links between the source and archive forms for root forms and their trees.

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Step 3: Check Archive Forms

350-Arch-FormsAdmin.ini

➢ Run Forms Admin script with

set, **reset**, *check*.

```
Cmd Box                                                              _ □ ✕
2010-05-03    9:07:35.38
e:\Dta>


  SthMupd 350-Arch-FormsAdmin.ini Do –cmd check
                                  -fle cfg-arch




  The Meta-Update script simply issues
  messages to the screen and logs.
  Ensure all Statuses are "Ok".
```

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Step 4a: Configuring Archive Delete

500-Arch.ini

➢ The Archive script, as delivered, does NOT delete records as they are archived.   This is to allow adequate testing.

To change this, edit the script so that the value of Del is 1.

```
#------------------------------------------------------------------.cfg
[Cfg]
# Configuration assignments
#
# Output Tags
#    Cfg,      Del                  bool: 0 No deletes; 1 deletes after a tree is archived
#
@Cmd         = Ref,    Cfg,     Del,               0



#------------------------------------------------------------------.main
[Main]
[Do]
```

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Step 4: Perform an Archive

500-Arch.ini

➢ Run the Archive script with
arch, **restore**.

```
Cmd Box                                                                    _ □ ×
2010-05-03   9:07:35.38
e:\Dta>


SthMupd 500-Arch.ini Do        -cmd arch
                               -fle cfg-arch
                               -qry   "1=1"


Use Meta-Update to copy data from the
source forms to the archive forms, and if
configured, to delete the data from the
source forms.
```

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Step 5: Review Archive Output

500-Arch.ini

➢ The Archive script produces three CSV output files with each run in addition to the Meta-Update log file.

All deleted records

pfx–**del.csv**

Root Form	Root Id	Root 179	Del Form	Del Id
HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	TMS:WorkInfo	TAS000000000016
HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	TMS:Task	TAS000000000017
HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	HPD:WorkLog	WLG000000000023
HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	HPD:Impacted Areas	HIA000000000023
HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	HPD:Help Desk	INC00000000025
HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	TMS:Task	TAS000000000014
HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	HPD:WorkLog	WLG000000000021
HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	HPD:Impacted Areas	HIA000000000021
HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	HPD:Help Desk	INC00000000023
HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	TMS:WorkInfo	TAS000000000013
HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	TMS:WorkInfo	000000000000004
HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	TMS:Task	TAS000000000009
HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	HPD:WorkLog	WLG000000000015
HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	HPD:Impacted Areas	HIA000000000015
HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	HPD:Help Desk	INC000000000017

Records with associations not ready for archive

pfx–**not-arch.csv**

Root Form	Root Id	Root 179	Asc Form	Asc Form Id	Msg
HPD:Help Desk	INC_CAL_1000005	AG001	PBM:Problem Investigation	PBI_CAL_1000004	root had non archivable association
HPD:Help Desk	INC_CAL_1000003	AG001	PBM:Problem Investigation	PBI_CAL_1000003	root had non archivable association
HPD:Help Desk	INC_CAL_1000002	AG001	PBM:Problem Investigation	PBI_CAL_1000002	root had non archivable association
HPD:Help Desk	INC_CAL_1000001	AG001	PBM:Problem Investigation	PBI_CAL_1000001	root had non archivable association

Records archived or restored

pfx–**idlog.csv**

Time	Server	Cntl section	Assign section	User	Schema	Key	Operation	Op2	Result
2013-11-17 16:38	cent	Do-arch-Upd		Demo	HPD:Help Desk-ARC	INC000000000002	Create	Merge	OK
2013-11-17 16:38	cent	Do-arch-x		Demo	HPD:Impacted Areas-ARC	HIA000000000002	Create	Merge	OK
2013-11-17 16:38	cent	Do-arch-x		Demo	HPD:WorkLog-ARC	WLG000000000002	Create	Merge	OK
2013-11-17 16:38	cent	Do-arch-l2		Demo	TMS:Task-ARC	TAS000000000002	Create	Merge	OK
2013-11-17 16:38	cent	Do-arch-l2		Demo	TMS:Task-ARC	TAS000000000003	Create	Merge	OK
2013-11-17 16:40	cent	Do-arch-Upd		Demo	HPD:Help Desk-ARC	INC000000000003	Create	Merge	OK
2013-11-17 16:40	cent	Do-arch-x		Demo	HPD:Impacted Areas-ARC	HIA000000000003	Create	Merge	OK
2013-11-17 16:40	cent	Do-arch-x		Demo	HPD:WorkLog-ARC	WLG000000000003	Create	Merge	OK
2013-11-17 16:41	cent	Do-arch-l2		Demo	TMS:Task-ARC	TAS000000000004	Create	Merge	OK
2013-11-17 16:41	cent	Do-arch-Upd		Demo	HPD:Help Desk-ARC	INC000000000004	Create	Merge	OK

Archive Output: Id Log

500-Arch.ini

➢ Standard Meta-Update Id Log file.

	Time	Server	Cntl section	Assign section	User	Schema	Key	Operation	Op2	Result
2	2013-11-17 16:38	cent	Do-arch-Upd		Demo	HPD:Help Desk-ARC	INC000000000002	Create	Merge	OK
3	2013-11-17 16:38	cent	Do-arch-x		Demo	HPD:Impacted Areas-ARC	HIA000000000002	Create	Merge	OK
4	2013-11-17 16:38	cent	Do-arch-x		Demo	HPD:WorkLog-ARC	WLG000000000002	Create	Merge	OK
5	2013-11-17 16:38	cent	Do-arch-l2		Demo	TMS:Task-ARC	TAS000000000002	Create	Merge	OK
6	2013-11-17 16:38	cent	Do-arch-l2		Demo	TMS:Task-ARC	TAS000000000003	Create	Merge	OK
7	2013-11-17 16:40	cent	Do-arch-Upd		Demo	HPD:Help Desk-ARC	INC000000000003	Create	Merge	OK
8	2013-11-17 16:40	cent	Do-arch-x		Demo	HPD:Impacted Areas-ARC	HIA000000000003	Create	Merge	OK
9	2013-11-17 16:40	cent	Do-arch-x		Demo	HPD:WorkLog-ARC	WLG000000000003	Create	Merge	OK
10	2013-11-17 16:41	cent	Do-arch-l2		Demo	TMS:Task-ARC	TAS000000000004	Create	Merge	OK
11	2013-11-17 16:41	cent	Do-arch-Upd		Demo	HPD:Help Desk-ARC	INC000000000004	Create	Merge	OK
12	2013-11-17 16:41	cent	Do-arch-x		Demo	HPD:Impacted Areas-ARC	HIA000000000004	Create	Merge	OK

Archive Output: Not Archived Log

500-Arch.ini

➢ Logs all root requests that are ready to be archived and are associated with root requests that are not ready for archive.

Root Form	Root Id	Root 179	Asc Form	Asc Form Id	Msg
HPD:Help Desk	INC_CAL_1000005	AG001	PBM:Problem Investigation	PBI_CAL_1000004	root had non archivable association
HPD:Help Desk	INC_CAL_1000003	AG001	PBM:Problem Investigation	PBI_CAL_1000003	root had non archivable association
HPD:Help Desk	INC_CAL_1000002	AG001	PBM:Problem Investigation	PBI_CAL_1000002	root had non archivable association
HPD:Help Desk	INC_CAL_1000001	AG001	PBM:Problem Investigation	PBI_CAL_1000001	root had non archivable association

500-Arch-130-11624.not-arch

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Archive Output: Delete Log

500-Arch.ini

➢ Logs all records that were deleted.

	A	B	C	D	E	F
1	**Root Form**	**Root Id**	**Root 179**	**Del Form**	**Del Id**	
2	HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	TMS:WorkInfo	TAS000000000016	
3	HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	TMS:Task	TAS000000000017	
4	HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	HPD:WorkLog	WLG000000000023	
5	HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	HPD:Impacted Areas	HIA000000000023	
6	HPD:Help Desk	INC_CAL_1000023	AG00123F73CF5Eqc4TSQ_uMxAgcUQB	HPD:Help Desk	INC000000000025	
7	HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	TMS:Task	TAS000000000014	
8	HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	HPD:WorkLog	WLG000000000021	
9	HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	HPD:Impacted Areas	HIA000000000021	
10	HPD:Help Desk	INC_CAL_1000021	AG00123F73CF5Eqc4TSQgeMxAgbUQB	HPD:Help Desk	INC000000000023	
11	HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	TMS:WorkInfo	TAS000000000013	
12	HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	TMS:WorkInfo	000000000000004	
13	HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	TMS:Task	TAS000000000009	
14	HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	HPD:WorkLog	WLG000000000015	
15	HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	HPD:Impacted Areas	HIA000000000015	
16	HPD:Help Desk	INC_CAL_1000015	AG00123F73CF5Eqc4TSQvOExAgYUQB	HPD:Help Desk	INC000000000017	

Note inverse order of deletions.

Controlling Archiving

`000-Jctl.ini`

➢ Meta-Update Job Automation may be used to enhance performance by breaking up the Archive jobs by server, record chunking, multi-tenancy, and/or root requests.

➢ Jobs are set in a Jobs configuration file. The Job Control script fires and controls processes based on the jobs file.

➢ See Meta-Update Job Automation User's Guide for details on Job Automation.

Meta-Update_Job_Automation_Users_Guide.pdf

Meta-Update Archive Configuration

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Arch-Jobs-sample.xslx

Job Automation: Sample Jobs file

Jobs are set in a Jobs configuration file. The Job Control script fires and controls processes based on the jobs file.

Formulas set up record chunking.

A second sheet, ArchCfgs, is used in a formula for the –fle argument.

⚡ **All jobs with the same Lvl & Seq are fired simultaneously.**

Some experimentation is needed to determine the optimum mix in any given server environment.

	Lvl	Seq	Enable	Job Classes	Skip When No Cla	ARS Table Name	Job File Source	Job File	Script File	Script Section	Company	Chunk-Num	Chunk	Archive Config File	Args	Notes
7	1	1	1			HPD:Help D	100-Hpd	100-Hpd_dft-05	500-Arch	Do	_	5	5000	e:\D(	-start 5000 -max 1000 -c	
8	1	2	1			HPD:Help D	100-Hpd	100-Hpd_dft-06	500-Arch	Do	_	6	6000	e:\D(	-start 6000 -max 1000 -c	
9	1	2	1			HPD:Help D	100-Hpd	100-Hpd_dft-07	500-Arch	Do	_	7	7000	e:\D(	-start 7000 -max 1000 -c	
17	1	3	1			HPD:Help D	100-Hpd	100-Hpd_dft-15	500-Arch	Do	_	15	15000	e:\D(	-start 15000 -max 1000 -	
18	1	3	1			HPD:Help D	100-Hpd	100-Hpd_dft-16	500-Arch	Do	_	16	16000	e:\D(	-start 16000 -max	
19	2	1	0			CHG:Infras	200-Chg	200-Chg_dft	500-Arch	Do	_			e:\D(	-start 0000 -max	
20	2	1	0			PBM:Proble	310-Pbml	310-Pbml_dft	500-Arch	Do	_			e:\D(	-start 0000 -max	
21	2	1	0			PBM:Known	320-PbmE	320-PbmE_dft	500-Arch	Do	_			e:\D(	-start 0000 -max	
22	2	1	0			PBM:Soluti	320-PbmS	320-PbmS_dft	500-Arch	Do	_			e:\D(	-start 0000 -max 0000 -c	
23	2	1	0			RMS:Relea	400-Rel	400-Rel_dft	500-Arch	Do	_			e:\D(	-start 0000 -max 0000 -c	
24	2	1	0			WOI:WorkC	500-Woi	500-Woi_dft	500-Arch	Do	_			e:\D(	-start 0000 -max 0000 -c	
25	2	2	0			HPD:Help D	110-Hpd	110-Hpd_calbro	500-Arch	Do	Calbro Services			e:\D(	-start 0000 -max 0000 -c	
26	2	2	0							Do	Calbro Services			e:\D(	-start 0000	
27	2	2	0							Do	Calbro Services			e:\D(	-start 0000	
28	2	2	0							Do	Calbro Services			e:\D(	-start 0000	
29	2	2	0							Do	Calbro Services			e:\D(	-start 0000	
30	2	2	0							Do	Calbro Services			e:\D(	-start 0000	
31	2	2	0							Do	Calbro Services			e:\D(	-start 0000	
32	2	3	0							Do	Biosphere			e:\D(	-start 0000 -max 0000 -c	
33	2	3	0							Do	Biosphere			e:\D(	-start 0000 -max 0000 -c	
34	2	3	0							Do	Biosphere			e:\D(	-start 0000 -max 0000 -c	
35	2	3	0							Do	Biosphere			e:\D(	-start 0000 -max 0000 -c	
36	2	3	0			PBM:Soluti	300-PbmS	300-PbmS_biosp	500-Arch	Do	Biosphere			e:\D(	-start 0000 -max 0000 -c	

Company	Config	Job File Name
_		_dft
Calbro Services	_Calbro	_calbro
Biosphere	_Biosphere	_biosphere

Contents / Help / Config / Jobs / ArchCfgs / Change History

Firing Sets of Archive Jobs

➢ Run the Job Automation script with the Jobs file

500-Arch.ini

Arch-Jobs-sample.xslx

```
Cmd Box                                                                        _ □ ✕
2010-05-03   9:07:35.38
e:\Dta>


 Wrk\2014-05-28> SthMupd 000-Jctl.ini Do -fle Arch-Jobs-sample.csv




   All jobs in the file will be run in batches.
   Each will produce a output files based on
   the Job Name.
```

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➢ **Binaries, trial licenses, User's Guide available on the web.**

➢ **Pick up a trial license with our Live Install and Scripting 101 presentation**

➢ **Download the Scripting 101 presentation and the Meta-Update User's Guide**

➢ **Look at the samples in the Script Library**

➢ **Contact Us at www.softwaretoolhouse.com**

We Thank You for Your Time

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