
# Software Tool House Inc.

# Meta-Update

# Job Console

# User's Guide


Release 6.25
Updated: 2025-Jan-10

# Preface

## Audience

This document is intended for Remedy ARS and/or ServiceNow Administrators and developers.

It is expected that the reader will have knowledge of the Remedy ARS system and be familiar with workflow development. It would behove the reader to be familiar with his ARS server's platform and scripting tools.

## Limitation of Liability

This program is provided "as-is". We are in no way liable for any losses arising from your use of this program, the sample scripts, or the documentation. It is your responsibility to evaluate this program. It is your responsibility to backup and protect your data. It is your responsibility to evaluate your use of this program for any particular purpose.

This manual does not represent a commitment to maintain any syntax or operation, nor is it warranted to be complete or accurate.

## Copyrights



## Updates

This program and this manual may change from time to time. The latest version is available at our web site: www.softwaretoolhouse.com.

## Comments

Your comments are welcome! Please see: www.softwaretoolhouse.com/support and click **Comments**, or email us at support@softwaretoolhouse.com. We look forward to hearing from you!

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# Document Library

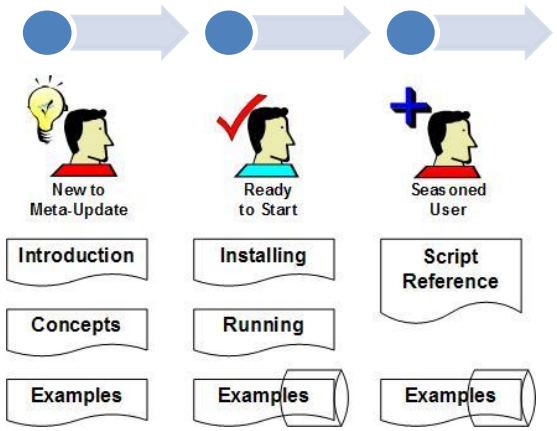
The following documents are included with Meta-Update.

| File | Contents |
|---|---|
| Meta-Update Installation Guide | Meta-Update.and the Job Console installation guide. |
| Meta-Update Users Guide | This is a detailed reference on Meta-Update scripting. It is used by script developers. It covers developing and debugging scripts. |
| Meta-Update Samples Guide | This is a detailed reference on many of the Meta-Update sample scripts. The samples do useful things and this document can be used for learning Meta-Update scripting. Templates for the samples are installed with the Job Console application. |
| Meta-Update Job Console Users Guide<br>*This document.* | This is a detailed reference on developing templates and firing jobs using the Job Console. |
| Meta-Update Release Notes | This highlights changes made in this release of Meta-Update. |
| Trace Daemon Users Guide | The “Trc” version of the binaries communicate with a process called the trace daemon. This is the User Guide for this. |
| Meta-Update Release Notes | This highlights changes made in this release of Meta-Update. |

# Organisation

This document is divided into a sequence of sections.

The diagram to the right outlines which User's Guide sections we recommend as you use Meta-Update more and more.




Here's an overview of the User's Guide sections:

## Introduction

This is a short description of what Meta-Update is and the functions and usage of the Job Colsole. Read it if you are new to Meta-Update, or want to learn what Meta-Update does at a high level. You do not need to be an ARS Administrator or developer to read this section.

## Concepts

It introduces the Meta-Update scripting language and gives a general understanding of what to do to implement a script. It is required reading until familiar with Meta-Update scripting.

## Installing

The installation notes for UNIX and Windows.

## Running

Running Meta-Update and interpreting the output. Developing and debugging scripts.

## Script Reference

This explains how to code Meta-Update scripts in detail. You will need to refer to this section when you don't remember how a specific setting or option is specified.

## Licensing

This explains how the Meta-Update server based licensing works.

## Samples

These samples, which are part of the software distribution and available on the web, are another way to learn how to build scripts. These samples perform different functions and have detailed explanations of the Meta-Update scripts used. Bits of these scripts may be copied and tailored to your scripts.

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# Document Conventions

Typefaces and conventions and icons are used in this document to add specific meaning as follows:

| Icon & Type Conventions | Meaning |
|---|---|
|  | Windows specific. Does not apply to Linux. |
|  | Linux specific. Does not apply to Windows. |
|  | Applies to BMC Remedy ARS server sessions. Cannot be used for, or Does not refer to, ServiceNow sessions.. |
|  | Applies to ServiceNow sessions. Cannot be used for , or does not refer to BMC Remedy ARS server sesions. |
|  | Caution. Failure to follow recommended actions may cause data loss. |
| | |
| `Courier Bold` | **`Courier Bold`** indicates a command you can enter. For example:<br>  **`set SthApiRetry=90-92 0 60 93 0 30`**<br>  **`export SthApiRetry=90-92 0 60 93 0 30`** |
| | |

# Table of Contents

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# Introduction

# Introduction

Thank you for selecting Meta-Update. With Meta-Update, creating repeatable imports, migrations and batch operations on your ARS and ServiceNow data is a snap.

Meta-Update is a data transformation tool that combines the concept of “streams” of data with procedural logic.

It is a tool to quickly create repeatable, validated batch operations on Remedy, ServiceNow and external data.

Please see the Meta-Update User's Guide for a complete description of Meta-Update.

The **Meta-Update Job Console** is a BMC Remedy Application used to fire Meta-Update jobs on any server or workstation, and then communicate the results to the person that fired the job.

Meta-Update Jobs are defined in **Templates**. These define required and default arguments, usage instructions, a server script file, and other attributes of Meta-Update Jobs.

When the user fills all required arguments, he fires the job which places it in a queue.

A **Job Queue server**, also a Meta-Update script, is started on the Remedy server or any other box.

It queries the queue, starting jobs in a fixed number of slots, and deleting directories when told to.

All sample scripts and different configurations of Meta-Archive and Meta-Databot are set up as templates. These may be used when the Job Console is installed on the server.

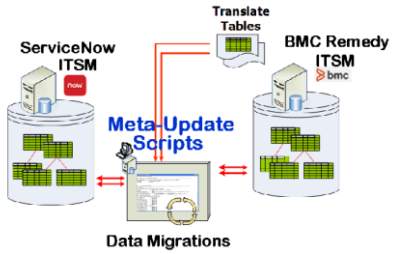



**Figure 1 Meta-Update Overview**

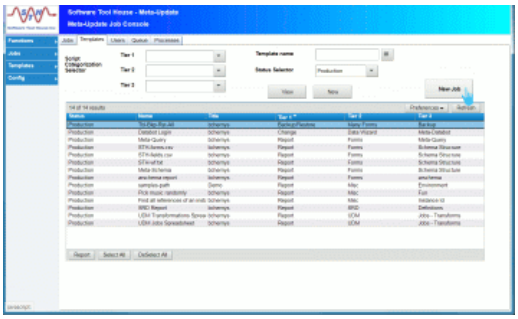


**Figure 2 Templates - Job Control App**

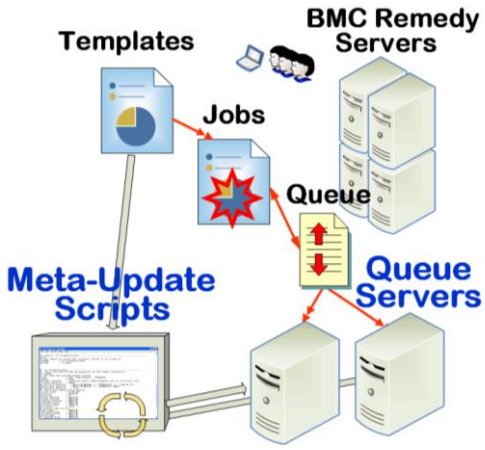



**Figure 3 Job Console Overview**

# Concepts

# Concepts

# Overview

Meta-Update Job Control is a BMC Remedy Application.

The purpose of Job Control is to fire and control Meta-Update scripts and other Jobs and to communicate the results back to the user that fired the job.

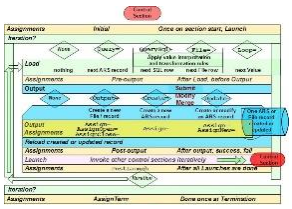


**Figure 4 Flow of a Meta-Update section**

Meta-Update script files must be readable by a Queue Server. A Queue Server can be started on a Remedy server or any other machine with IP access to the Remedy Server.

Meta-Update scripts can be developed and tested on any workstation or server.

Once tested and promoted, they are copied to the Queue Servers. This can be under a Source Version control system.

Please see the Meta-Update User's Guide for a complete reference to Meta-Update scripting.

All Meta-Update Job Console users must be Remedy Administrators and must be set to allow Meta-Update use and rights.

**Job Templates** are defined for available scripts.

A job template specifies a script, a script path, and required or optional arguments.

Different templates may be created for a single script with different argument values and defaults.

A **Job** is created from a **Template**. Arguments are checked and once ready, a job can be ***fired***.

A fired job enters a **Job Queue** and waits its turn.

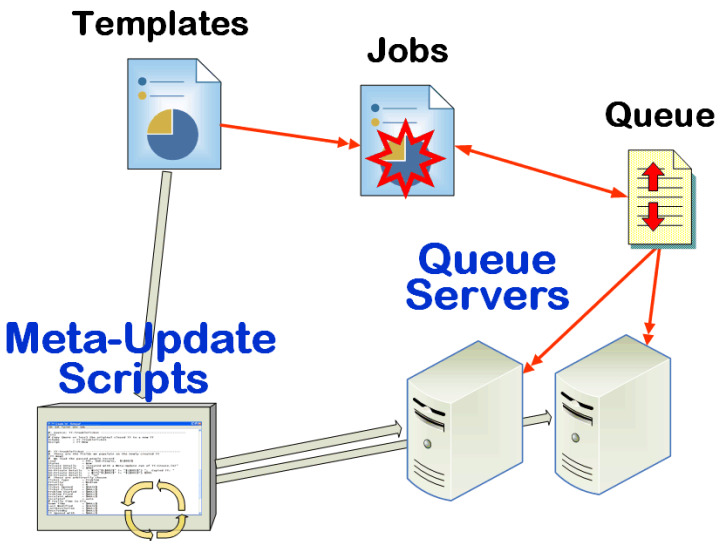



**Figure 5 Job Console Overview**

A **Job Queue Process** may be run on a Remedy server, another server, or any workstation with connectivity to the Remedy server.

Each **Job Queue Server** uses a configurable number of slots to run jobs simultaneously. That way, even with long running jobs, other jobs will continue.

The primary interface for users is the J**ob**. If the script is so configured, progress bars indicate a Job's status.

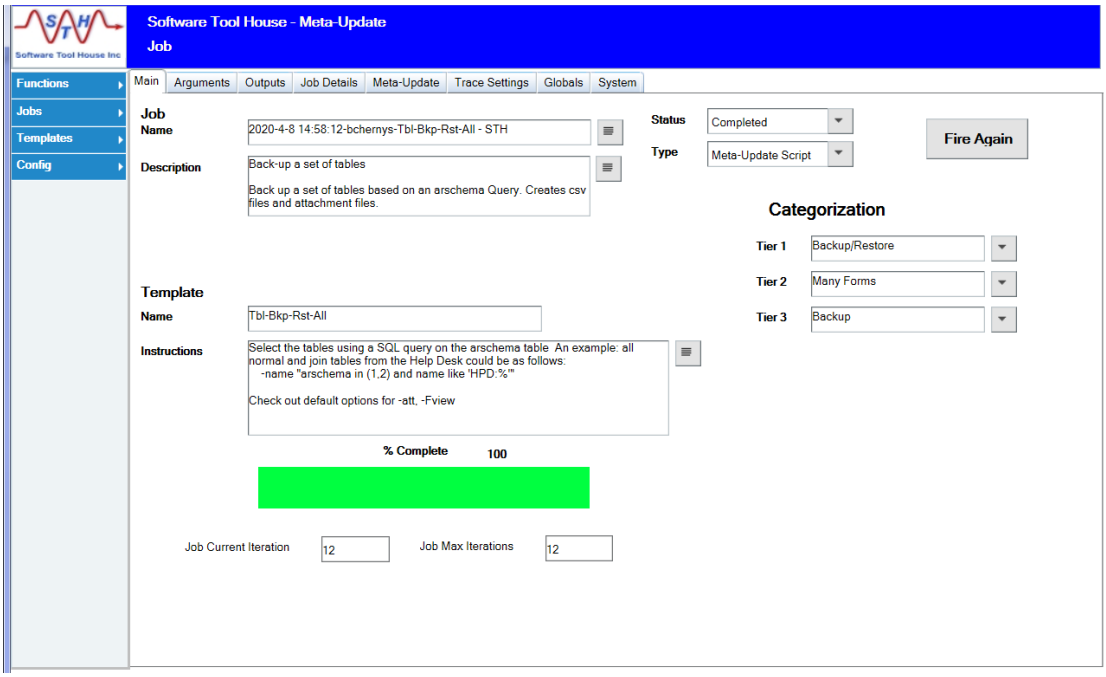



**Figure 6 A Completed Job Showing Progress Bar**

When a Job completes, **Output Files** are loaded as attachments and the slot is free to run another job. These files may also remain on the server at the control of the job Template.

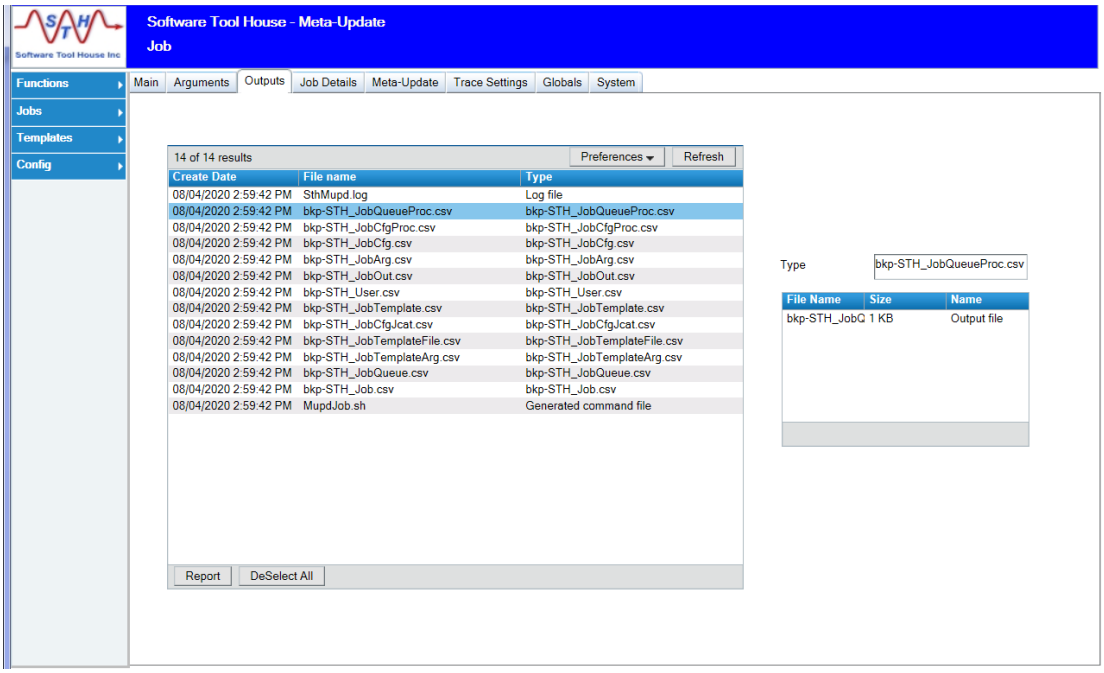



**Figure 7 Job Outout Files**

The primary interface for administrators and script developers is the **Job Template**.

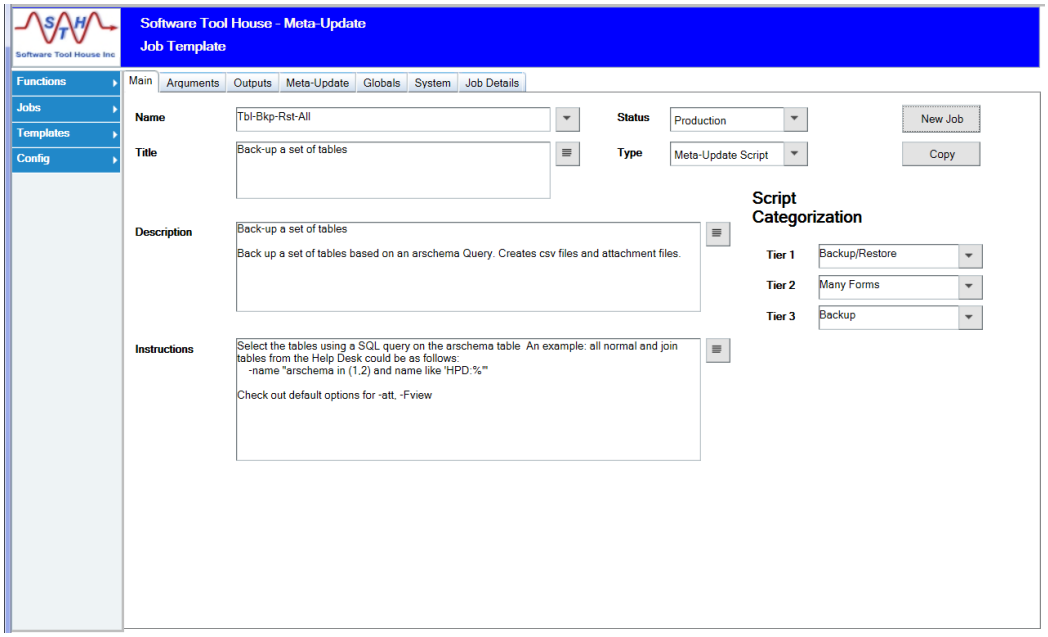



**Figure 8 Job Template**

A single **Job Template** specifies a Meta-Update script, its location on a **Queue Server**, arguments, standard script features used, default trace levels, and help information.

Each **Job** is fired by a **Job Template**.

**Job Templates** may also define jobs running Meta-Schema and Meta-Query as well as other batch or binaries..

Some jobs will communicate progress to Job Control. Scripts need to enable this.

Job Control users must be Remedy administrators. These are defined in a form and only those users so defined are allowed to use Job Control.

There several roles available of users of the Meta-Update Job Console:

| | |
|---|---|
| Script Manager | Can place templates into production usage. Can modify script permissions and categorizations. |
| Script User Admin | Specifies users and groups rules for the Job Console |
| Script Developer | Can modify scripts on the server and build templates. |
| Script User | Can run scripts |

# Users

Meta-Update Queue Servers Login Names must be Remedy Administrators. The Meta-Update Job Console application additionally enforces Role based rights through workflow. Remedy.

Some common BMC Remedy functions require Administrator rights. For example Query SQL.

It is possible for non-administrators to execute some of the sample scripts, specifically those that don't do SQL queries.

For this reason, the Meta-Update Server Queue runs under a fixed license and Administrator Remedy User Name.

It is often desireable to have a specific user used for Meta-Update functions. Multiple Queue servers can be started on multiple machines using this common login.

Meta-Update Jobs, however, run under the User that submitted them.

All Job Console users must be defined in a form. They must be Remedy Administrators as mentioned above.

None the less they are assigned Roles:

| | |
|---|---|
| User Administrator | Can edit users, edit templates, fire jobs |
| Catalog Administrator | Can edit various configuration catalogues |
| Template Developer | Can edit templates and fire jobs |
| Job Submitted | Can fire jobs by selecting templates |

User Id that installs the Job Console application the first time is automatically set to be a Meta-Update Job Console user with all roles checked.

# The Job Console Form

# Form Overview

Meta-Update Job Console form accesses all application functions in different tabs.

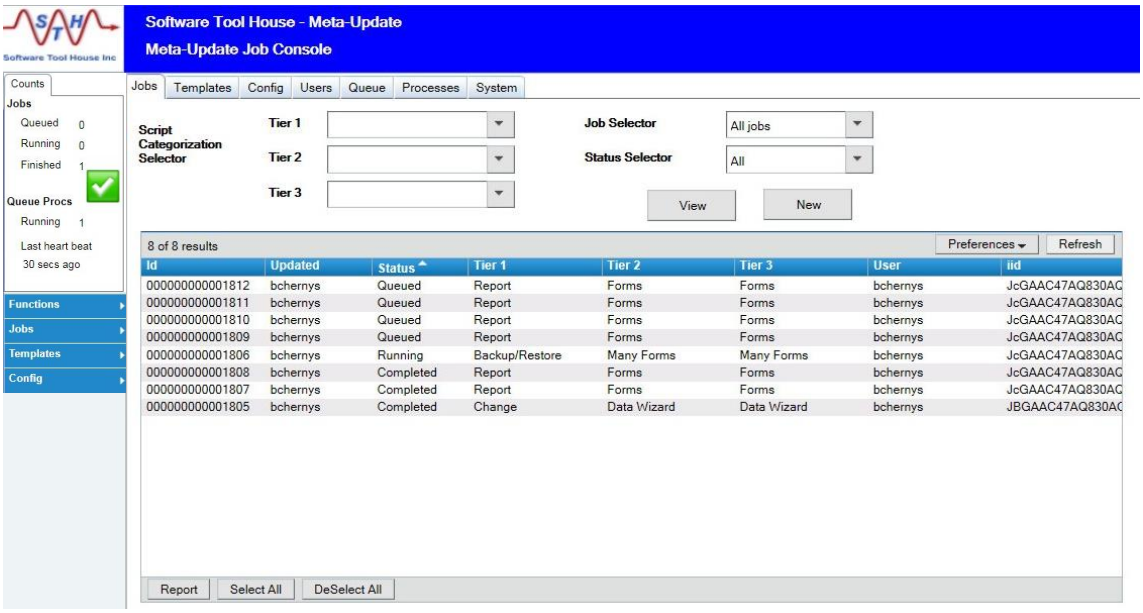



**Figure 9 Jobs tab: Queued, Running, Completed jobs.**

Tabs are shown when the user is defined and has the appropriate role.

Tabs present:

| | |
|---|---|
| Jobs | in the system in any state: Queued, Running, Completed |
| Templates | available in the system |
| Users | users and roles defines that can use the Job Console |
| Config | |
| Queue | Jobs in the Queue |
| Processes | Running Queue processes |

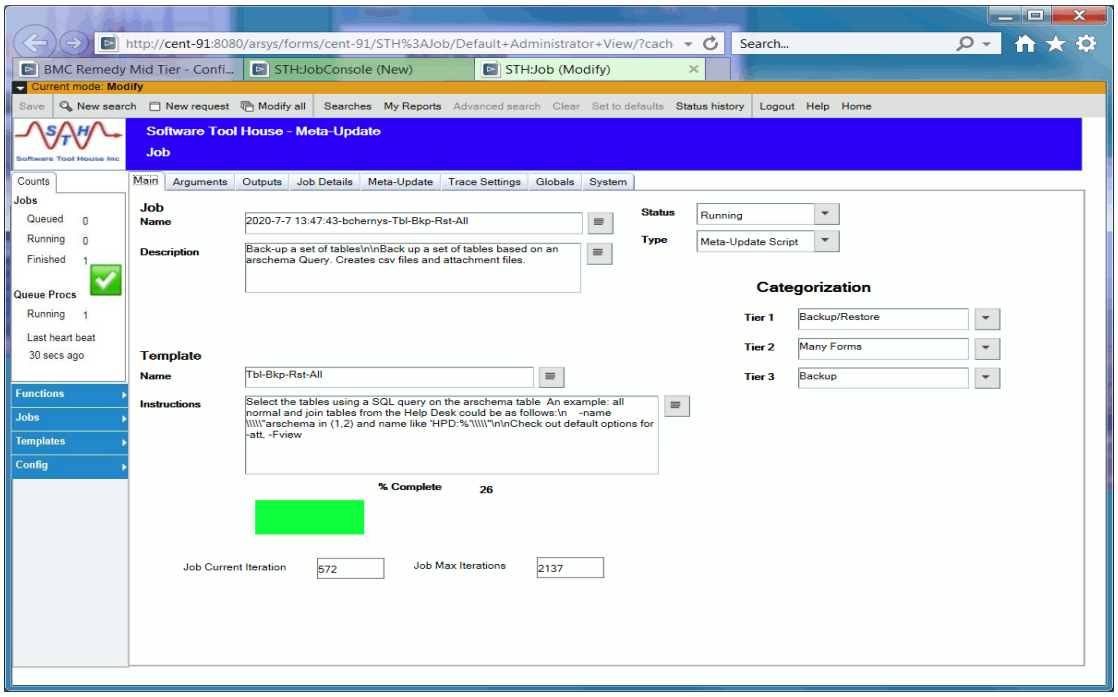
# Jobs Tab

Jobs to apprear in the table may be selected through the fields available.

By default jobs are sorted first by status then by id in descending order, effectively, in reverse time order whith the newest at the top and the oldest at the bottom.  The order of the Status is such that Queued (waiting) jobs are first and completed jobs are last.

Selecting a job and pressing the View button (or Double clicking) will bring up that Job's record which will include all input and output files.

A running job may display its progress which will change.




The owner of the job may chose to delete the job's files on the record or the directory from either the job or the console.  Note that only completed jobs may be deleted.

Selecting New in the console will let you chose a template and create a new job from it.

Alternatively, the Templates tab will allow you to click a template and create a new job saving a click, selecting a template in a dialogue and clicking Ok.

# Templates Tab

Templates to apprear in the table may be selected through the fields available.

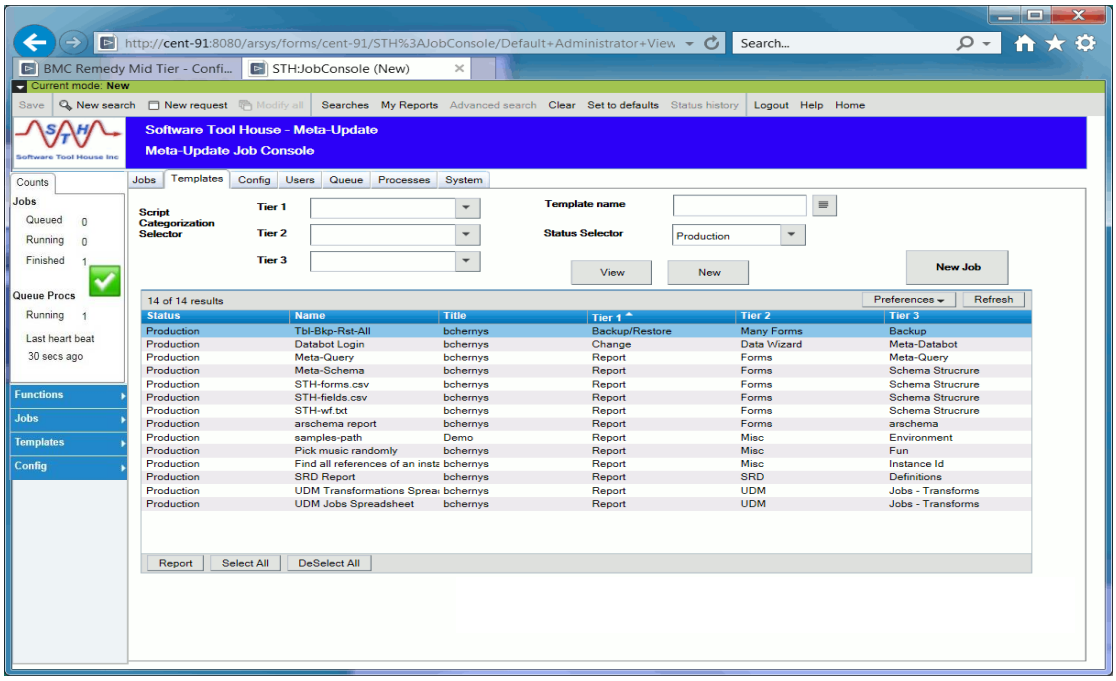



**Figure 10 Templates Tab**

By default Templates in Production are displayed.

Double clicking a Template will create a new Job for users with the role Job:Submitter. For Template Developers, the Template will be opened.

Templates can be used to fire scripts with different arguments and groups of different job templates.

A Template is deemed Complete when all required arguments are filled in. Only Complete Templates may be grouped as a single job.

# Queue Tab

There is one Queue record for each Job record.

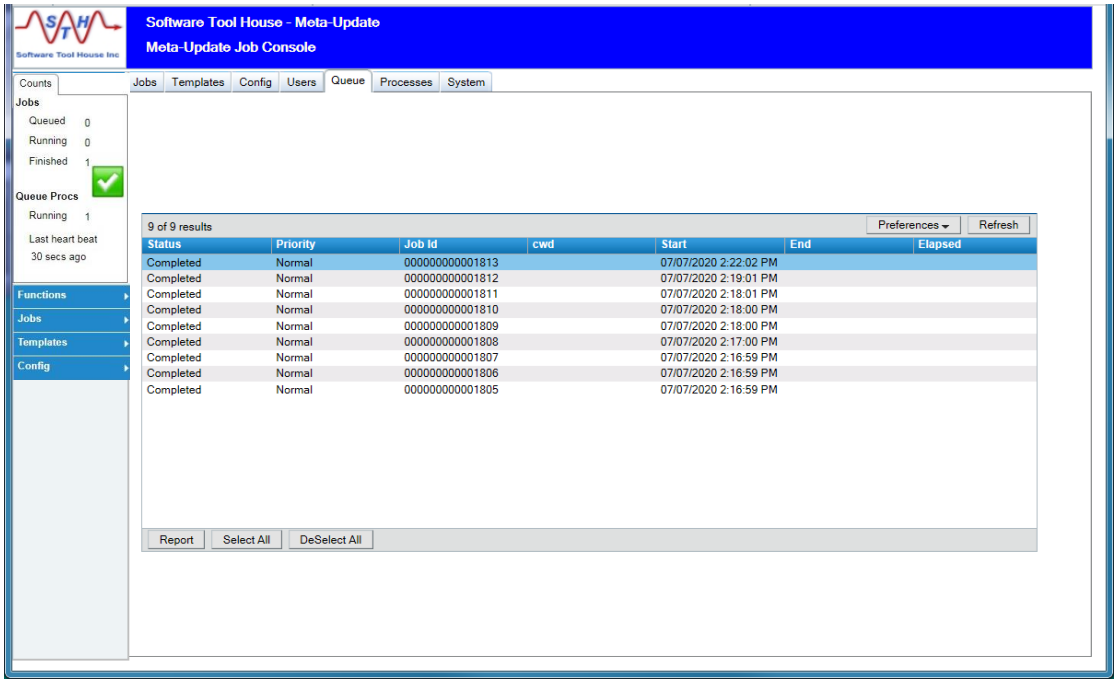



**Figure 11 Queue Tab**

After a Job completes, the results are loaded into the Job record, and then the Queue record is marked as completed.

There are also Queue records for Server work area deletions  When the queue server processes these, the Job's work area on the server is marked as deleted and the Queue record for both the Job and the Deletion are deleted.

# Processes Tab

There is one Running process record for Queue process started on a host.

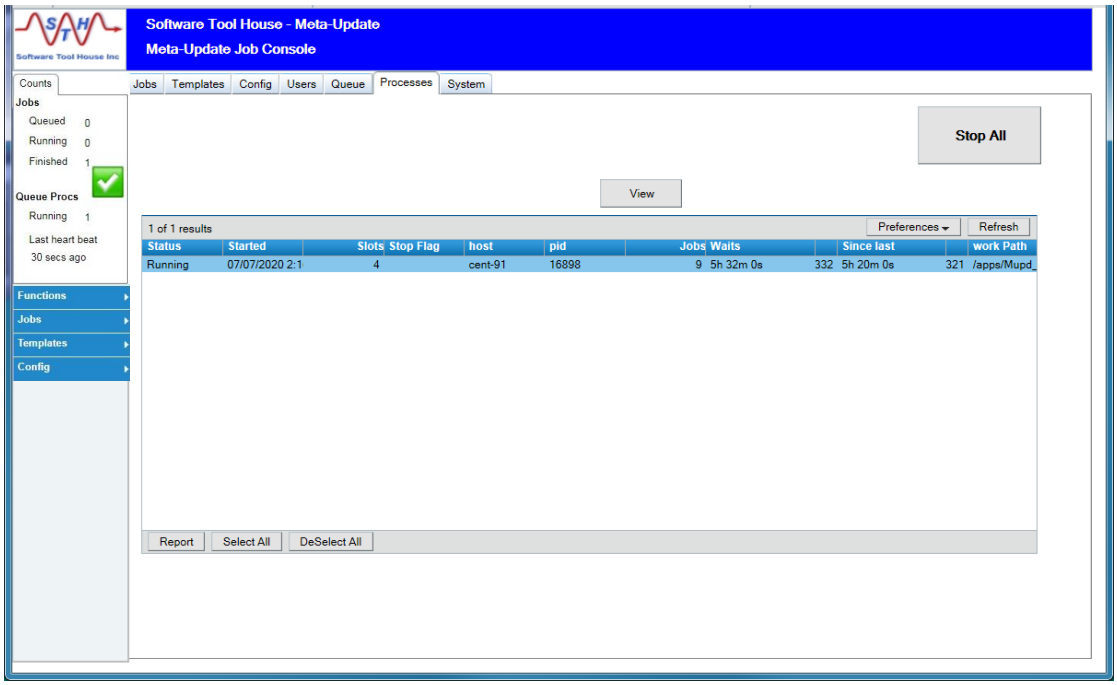



**Figure 12 Queue processes**

When a Queue process is started it creates its own record. As it fires jobs and waits for more jobs or for jobs to complete it continuously updates its own record.

Double clicking will open details of the record:

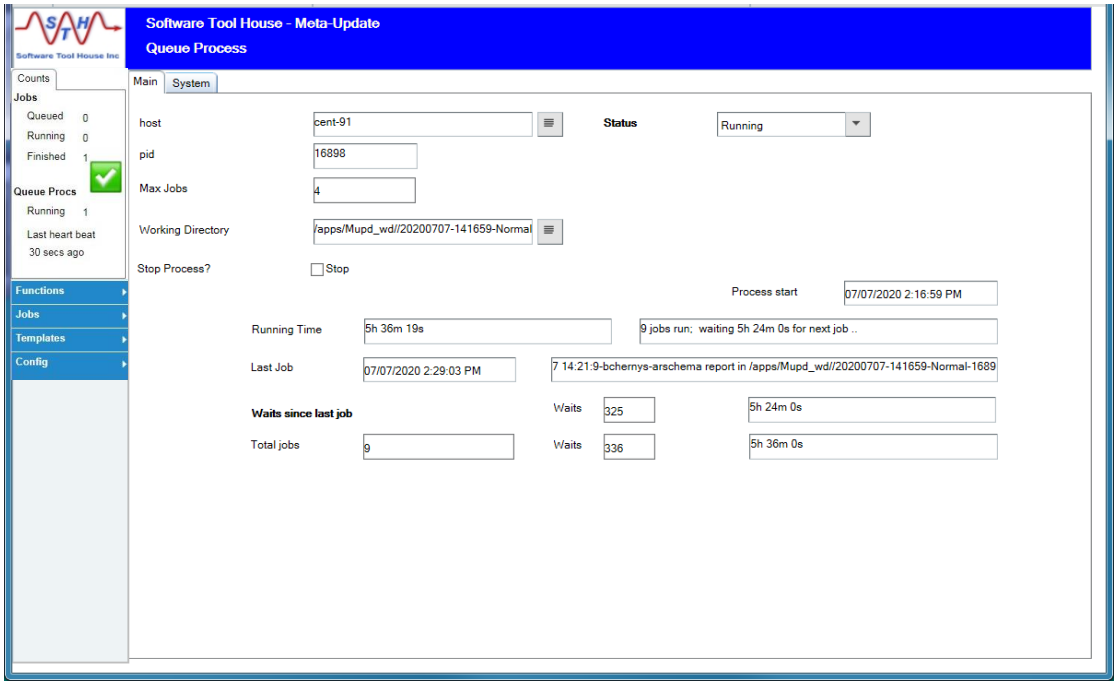



**Figure 13 A Running Queue Process**

The Stop all button will cause all processes to Stop.  No more jobs will be run.

If a process does is not stopped normally but fails to update its own Process record, an indicator is red is highlighted on the detail form.

# The Job Form

# Form Overview

Meta-Update Job form is opened from the Jobs or Templates tab of the Job Console.

A template defines the available Jobs. On the template tab, select a template and press the New Job button.

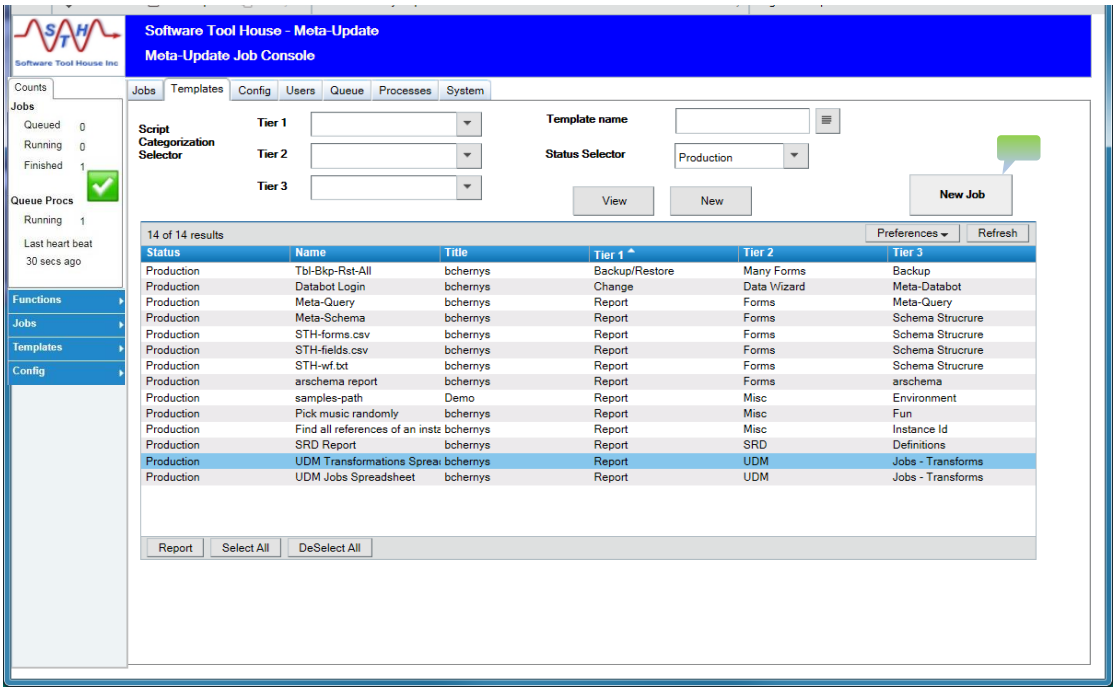



**Figure 15 Template Selection to create a new Job**

A new job will be created.

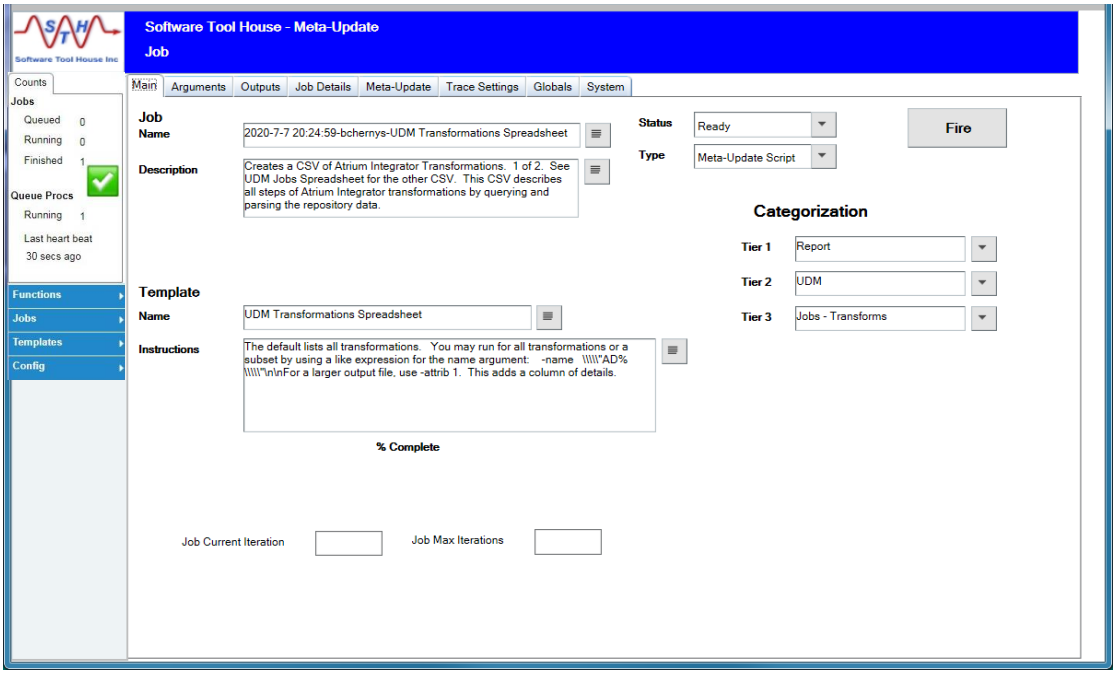



**Figure 16 New Job Ready to Fire**

# Setting a Jobs' Arguments

In the above image, the job is ready to fire. All required arguments are set to the defaults defined in the Template.

Other jobs will need some arguments filled in. You will be taken directly to the arguments tab.

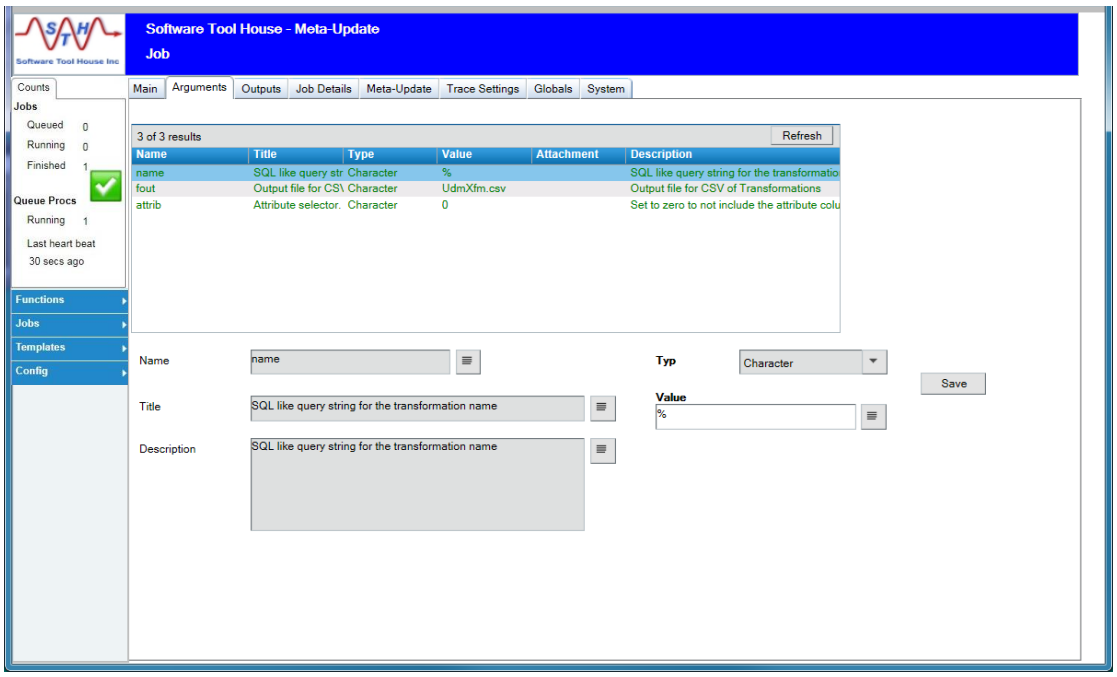



**Figure 17 Arguments – all with default values**

Arguments that are not Locked by the Template can be changed in this tab.

Select the argument row in the table, change the value, and press Save.

The next example is of a job with a required argument (in red) and other arguments with default values. The required argument is a file. Attach a file as described to the left and press Save.

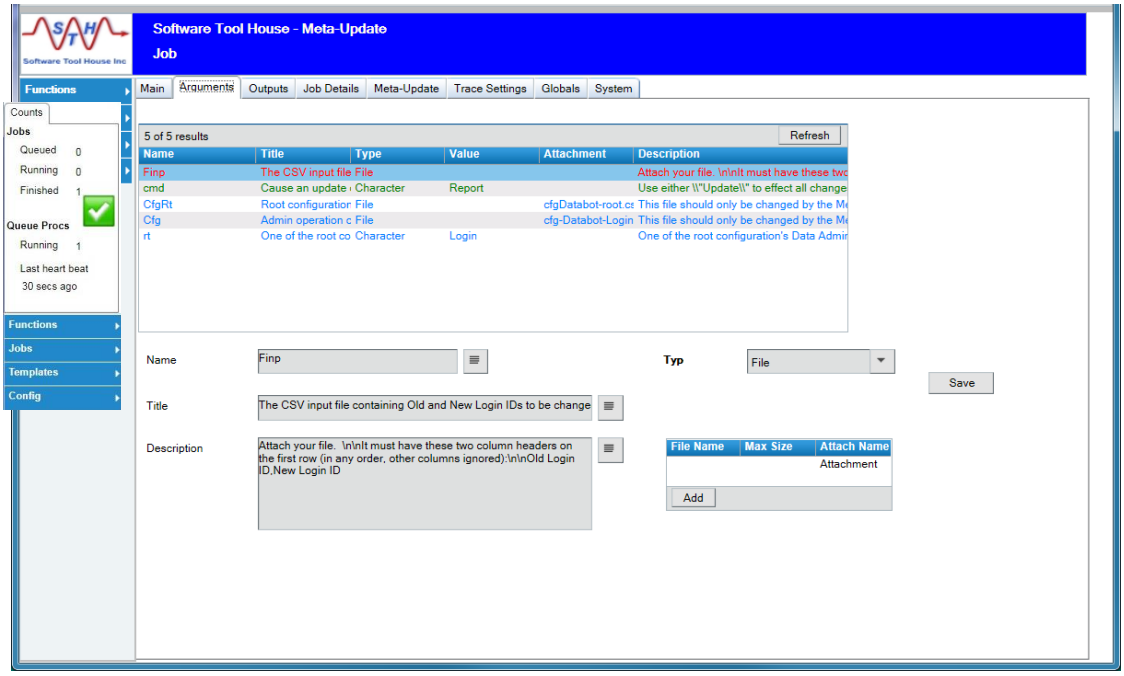



**Figure 18 A required "File" argument in red.**

Note that even if all arguments have defaults, you may have to change some. The example above has a default value for **-cmd Report**. It is the Meta-Databot application which allows you to run the script in two command modes. **Report** and **Update**.

Once you do the report and review the changes that would occur, you can can use the “Fire Again” button on the job to generate a new job, change the **cmd** argument to **Update** and fire the job.

The Databot template’s instructions describe this argument and includes documentation attachments.

Once you Fire a job, it enters the Job Queue. If the Job Queue Server is waiting, it won't start until the wait is completed. This will be under 60s.

Once a Job starts running, if the template and the script support it, a long running job can indicate its progress to the Job record. Refreshing the record will show the progress bar in action.

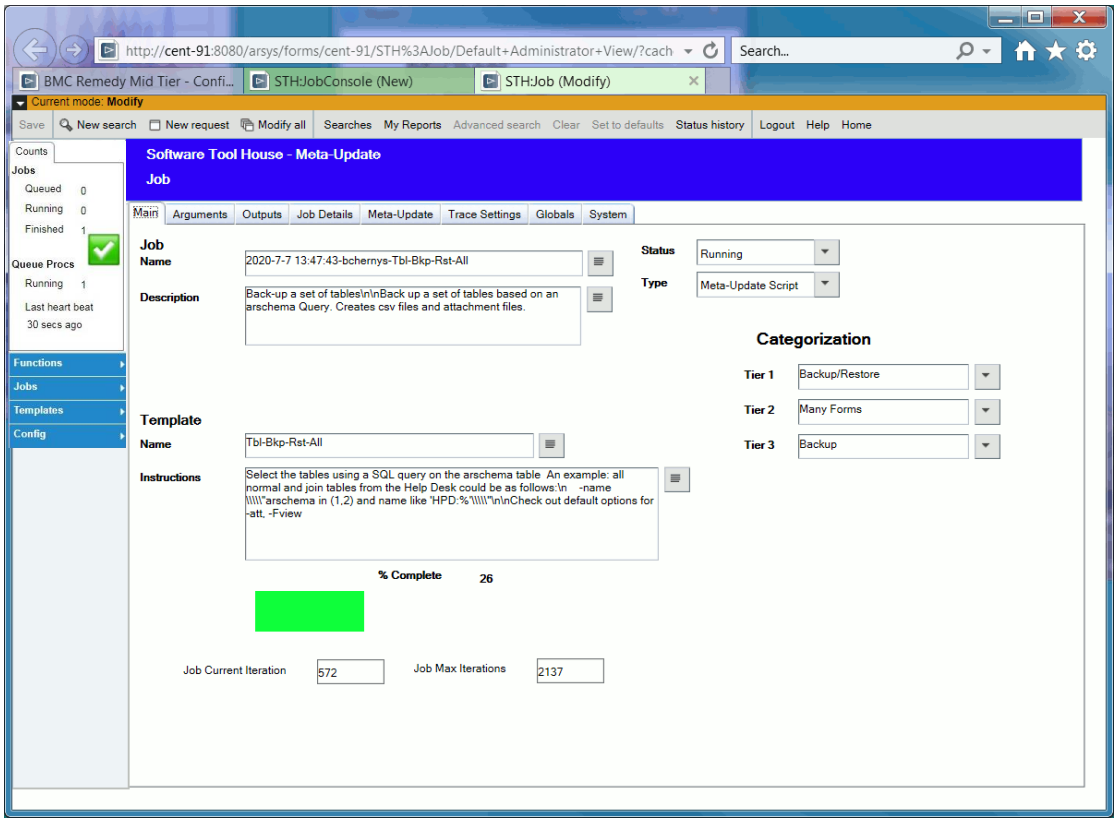



**Figure 19 A long running job with a progress bar**

# The Job Template Form

# Form Overview

Meta-Update Job Template form is opened from the Templates tab of the Job Console.

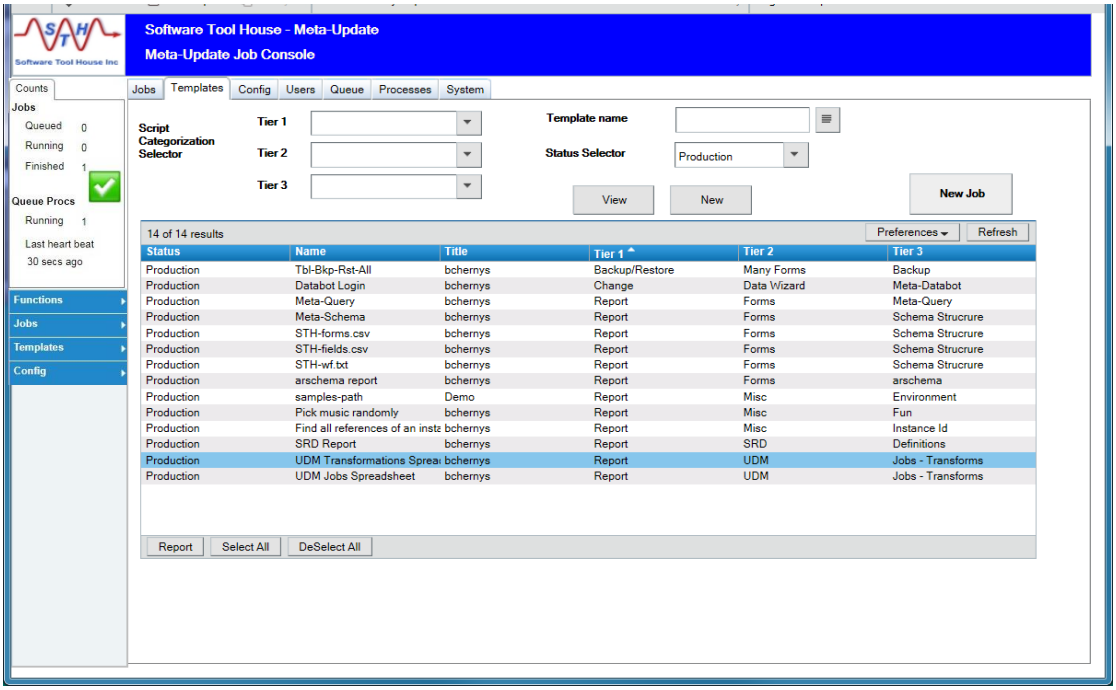



**Figure 20 Template tab**

On the template tab, click View to view or change a template or New to create a new template.

You are only allowed to create or modify templates with the **`Template Developer`** role.

A template is used to create a new job. It explains what the job does and defines all required and optional arguments for the job.

A template can be a Meta-Update script, a Meta-Schema or Meta-Query run. Additionally, a template can be a Multi-Job.

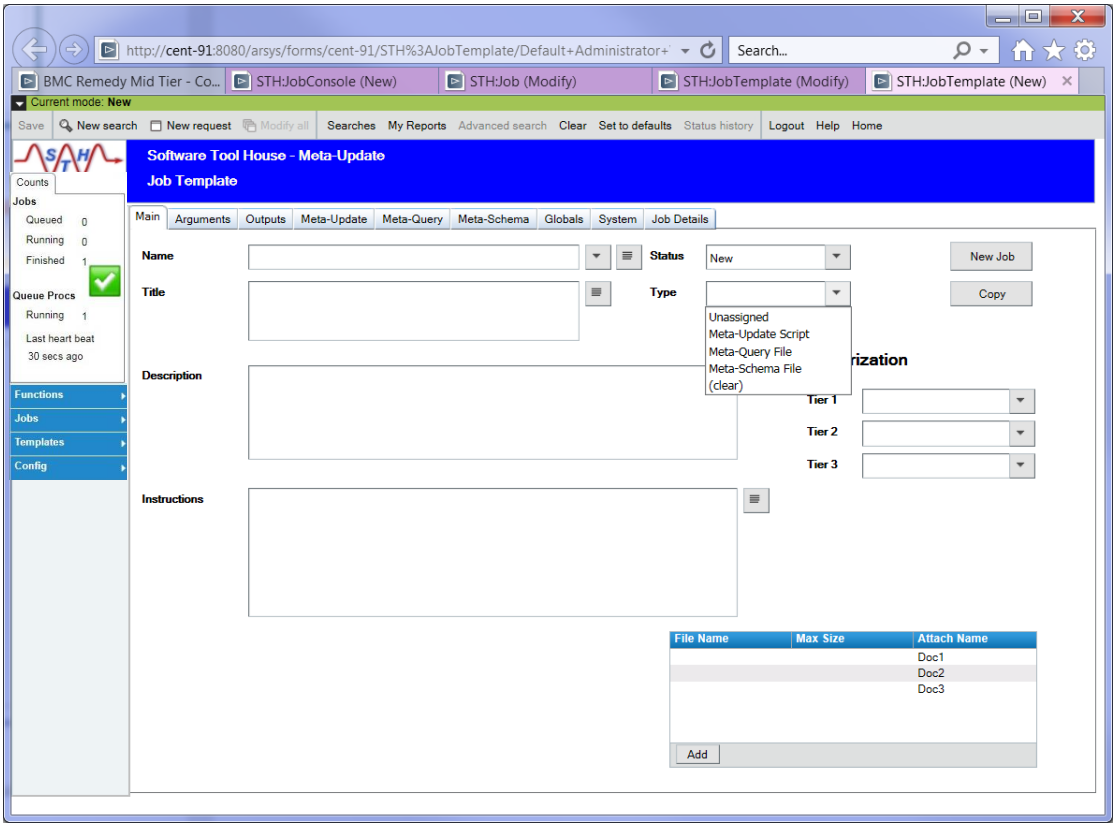



**Figure 22 A new template with the Type drop-down shown**

A Multi-Job template lists one or more other templates. When a Multi-Job template is run, all implied jobs are run as a single job, in sequence, and occupying one slot in the Queue Processor.

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# Main tab

Different information is required depending on the Template's **`Type`** field. As each **`Type`** is selected, different Tabs come into view.

The main purpose of the Main tab is to offer documentation to the user on what the job does and how to set it up.

There are attachment slots for documents which are available to the job submitter. An example are the Meta-Databot template samples.

A template is marked Job Complete if it requires no user input for a Job generated from that template. For a Meta-Update templates, all arguments must have defaults. For Meta-Query and Meta-Schema templates, all arguments must have values. Only Job Complete templates can be selected in a Mluti-Job.

# Types of Templates

There are three types of templates:

| | |
|---|---|
| Meta-Update Script | Unlimited functionality based on a Meta-Update script. Defines arguments required by the script. |
| Meta-Query File | Used to generate a CSV file based on a query against a form or issue a direct SQL statement. |
| Meta-Schema File | Used to generate a CSV of forms and field definitions or text file of forms and workflow. |
| Multi-Job | Used to run multiple templates as a single job. |

For each of these types, a single Type tab is opened and for all these types, the tab Job Details is also available.

# Meta-Query File

Meta-Query is used to generate a CSV of all records and fields from a form given a query. It can also issue direct SQL statements.

All fields are required on the Main panel except for Categorization (strongly suggested) and attachments.

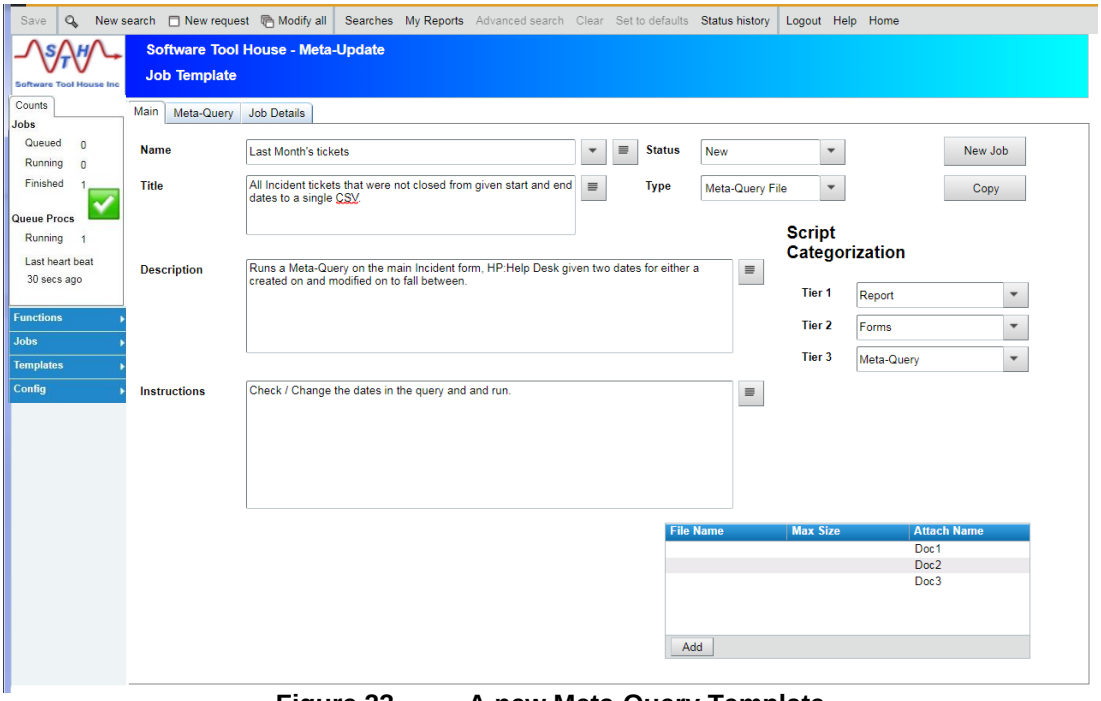


**Figure 23 A new Meta-Query Template**

There are two Meta-Query **`Types`** available:

| | |
|---|---|
| **`Form`** | A Remedy (or ServiceNow) query against a form. |
| **`sql`** | A Remedy executed direct SQL statement – usually a select. |

# Form Type

A form query is a regular Remedy query with the addition that field names can be used between ticks.

Further, because of the nature of the command line, the entire query text must be enclosed in quotes. Any quotes embedded in the query text must be escaped with a back-slash.

Examples:

For CMDB Categorizations and classes:

```
Form:          PCT:Product Catalog
          "'Manufacturer' = \"\""
  Or:     "'Manufacturer' = $NULL$
```

All open Incidents created last month:

```
Form:          HPD:Help Desk
"'Status' < \"Resolved\" and
'Submit Date' >= \"01/01/2020\" and
'Submit Date' <  \"02/01/2020\""
```

If you want to parameterize a query, say automatically running a report for last month's incidents, we recommend the Meta-Update sample, **`200-Mqry-dtes-prog.ini`**, included in the distribution.

A query will always return all records in the results. A null query is the same as **`1=1`** and returns the complete table. Meta-Query will repeat the query in chunks if needed.

You can design templates with defaults in all the fields Meta-Query tab, say for a specific extract done regularly. Or you may use the one included in the samples which has none of the Meta-Query fields filled in.

The Meta-Query tab

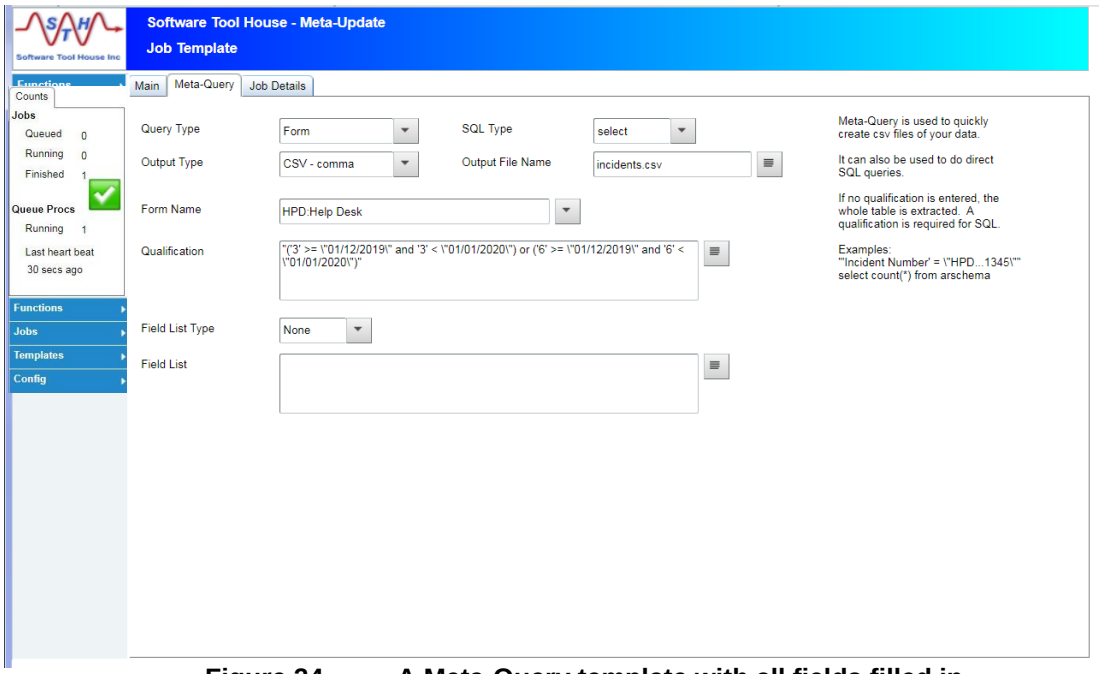


**Figure 24 A Meta-Query template with all fields filled in**

# Meta-Schema File

Meta-Schema is used to generate a CSV of all fields and tables in a Remedy server. It can also produce a text file describing workflow.

All fields are required on the Main panel except for Categorization (strongly suggested) and attachments.

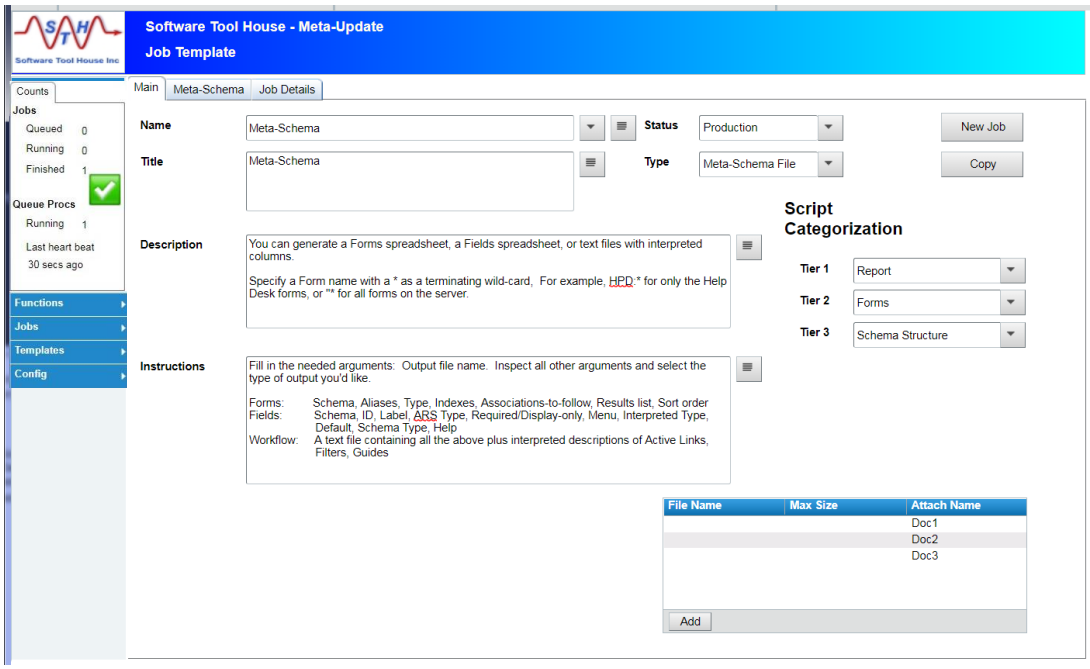


**Figure 25 The Sample Meta-Schema Template**

There are three Meta-Schema **`Types`** available:

**`Form`** Produces a CSV with these columns
Schema, Aliases, Type, Indexes, Associations-to-follow, Results list, Sort order.

**`Fields`** Produces a CSV with these columns
Schema, ID, Name, Label, ARS Type, Required / Display Only, Menu, Type, Default, Schema Type, Help

**`Workflow`** Produces a single text file with all the information in both Form and Fields and additionally, all Filters, Active Links, Guides.

# Form Type

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Schema | Type | Default VUI | Alias | Alias Plural | Alias Short | Alias Short Plural | Audit | Help | Num Indexes | Indexes | Join Map |
| 354 | ASE:Admin-ServerSettings | Dialog | Default Administrator View | | | | | | This dialog box | 0 | | |
| 355 | ASE:AssignAssoc_AssignForm | Join | Default Admin View | | | | | | | 0 | | Type: Inner, Referential integrity: enforced, Delete option: None; Qual: ($instanceId25 = 'Form Instance ID'); |
| 356 | ASE:AssignAssoc_AssignRules | Join | Default Admin View | | | | | | | 0 | | Type: Inner, Referential integrity: |
| 357 | ASE:Assignment Association | Regular | Default Admin View | | | | | | | 2 | 1: non-Unique, Name: I265_500000200_1, 2 Fields, 500000200 - Process InstanceId, 500000300 - instanceId2; 2: Unique, Name: I265_179_1, 1 Fields, 179 - Association Instance ID | |
| 358 | ASE:Assignment Process | Regular | Default Ad | Assignment | Assignment Processes | | | | | 1 | 1: Unique, Name: I264_179_1, 1 | |
| 359 | ASE:Assignment Rules | Regular | Default Ad | Assignment | Assignment Rules | | | | | 1 | 1: Unique, Name: I263_179_1, 1 | |
| 360 | ASE:AssignmentDetail | Join | Default Ad | Assignment | Assignment Details | | | | | 0 | | Type: Inner, Referential integrity: |
| 412 | AST:Attributes | Regular | Default Administrator View | | | | | Log, Disabled, | | 2 | 1: Unique, Name: I966_179_1, 1 | |
| 413 | AST:AttributesAuditFilters | Regular | Default Admin View | | | | | | | 1 | 1: Unique, Name: I1530_179_1, 1 | |
| 414 | AST:AUD_AssetAssociations | Regular | Administrator | | | | | | | 3 | 1: non-Unique, Name: | |
| 415 | AST:Audit Filters | Regular | Default Admin View | | | | | | | 1 | 1: Unique, Name: I1846_179_1, 1 | |
| 416 | AST:AuditLogAttributes | Regular | Default Admin View | | | | | Log_Shadow, | | 0 | | |
| 417 | AST:AuditLogSystem | Regular | Default Admin View | | | | | Log_Shadow, | | 1 | 1: non-Unique, Name: I1979_450_1, 1 | |
| 418 | AST:BaseElement | Join | Managem | Base Eleme | Base Eleme | Base Eleme | Base Element | | | 0 | | Type: Outer, Referential integrity: |
| 419 | AST:BIOSElement | Join | Managem | BIOS Eleme | BIOS Eleme | BIOS Eleme | BIOS Elements | | | 0 | | Type: Outer, Referential integrity: |
| 420 | AST:BMCAssetBaseJoin | Join | Administrator | | | | | | | 0 | | Type: Inner, Referential integrity: |
| 421 | AST:BMCAssetBaseJoinComponent | Join | Administrator | | | | | | | 0 | | Type: Inner, Referential integrity: |
| 422 | AST:BOAnalysisSrch_dlg | Dialog | Default Ac | CI Available, | CI Available, | CI Available, | CI Available/Unavailable Times | | | 0 | | |
| 423 | AST:BulkInventory | Join | Managem | Bulk Invento | Bulk Invento | Bulk Invento | Bulk Inventory | | | 0 | | Type: Outer, Referential integrity: |
| 424 | AST:BulkUpdate-Display | Dialog | Managem | Bulk Update | Bulk Update | Bulk Update | Bulk Update | | | 0 | | |
| 425 | AST:BulkUpdateRelocate-Display | Dialog | Managem | Relocate CI | Relocate CIs | Relocate CI | Relocate CIs | | | 0 | | |
| 426 | AST:BusinessProcess | Join | Managem | Business Pro | Business Pro | Business Pro | Business Processes | | | 0 | | Type: Outer, Referential integrity: |
| 427 | AST:BusinessService | Join | Managem | Business Ser | Business Ser | Business Ser | Business Service | | | 0 | | Type: Outer, Referential integrity: |
| 428 | AST:Card | Join | Managem | Card | Card | Card | Card | | | 0 | | Type: Outer, Referential integrity: |

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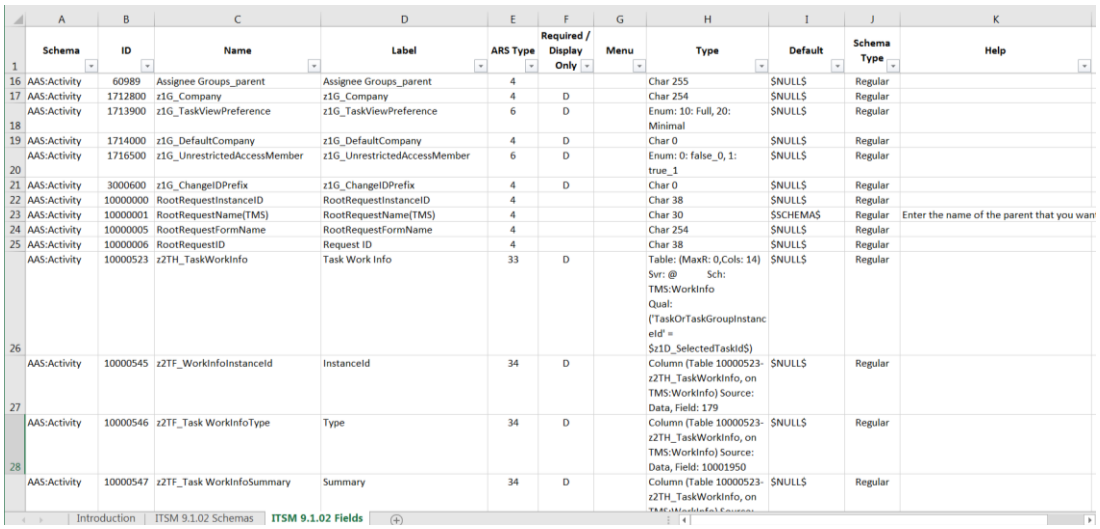
**Figure 26 The Schemas Sheet from our ITSM 9.1.02 Freebies**

# Fields Type



| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Schema | ID | Name | Label | ARS Type | Required / Display Only | Menu | Type | Default | Schema Type | Help |
| 16 | AAS:Activity | 60989 | Assignee Groups_parent | Assignee Groups_parent | 4 | | | Char 255 | $NULL$ | Regular | |
| 17 | AAS:Activity | 1712800 | z1G_Company | z1G_Company | 4 | D | | Char 254 | $NULL$ | Regular | |
| 18 | AAS:Activity | 1713900 | z1G_TaskViewPreference | z1G_TaskViewPreference | 6 | D | | Enum: 10: Full, 20: Minimal | $NULL$ | Regular | |
| 19 | AAS:Activity | 1714000 | z1G_DefaultCompany | z1G_DefaultCompany | 4 | D | | Char 0 | $NULL$ | Regular | |
| 20 | AAS:Activity | 1716500 | z1G_UnrestrictedAccessMember | z1G_UnrestrictedAccessMember | 6 | D | | Enum: 0: false_0, 1: true_1 | $NULL$ | Regular | |
| 21 | AAS:Activity | 3000600 | z1G_ChangeIDPrefix | z1G_ChangeIDPrefix | 4 | D | | Char 0 | $NULL$ | Regular | |
| 22 | AAS:Activity | 10000000 | RootRequestInstanceID | RootRequestInstanceID | 4 | | | Char 38 | $NULL$ | Regular | |
| 23 | AAS:Activity | 10000001 | RootRequestName(TMS) | RootRequestName(TMS) | 4 | | | Char 30 | $SCHEMA$ | Regular | Enter the name of the parent that you wan |
| 24 | AAS:Activity | 10000005 | RootRequestFormName | RootRequestFormName | 4 | | | Char 254 | $NULL$ | Regular | |
| 25 | AAS:Activity | 10000006 | RootRequestID | Request ID | 4 | | | Char 38 | $NULL$ | Regular | |
| 26 | AAS:Activity | 10000523 | z2TH_TaskWorkInfo | Task Work Info | 33 | D | | Table: (MaxR: 0,Cols: 14) Svr: @ Sch: TMS:WorkInfo Qual: ('TaskOrTaskGroupInstanceId' = $z1D_SelectedTaskId$) | $NULL$ | Regular | |
| 27 | AAS:Activity | 10000545 | z2TF_WorkInfoInstanceId | InstanceId | 34 | D | | Column (Table 10000523-z2TH_TaskWorkInfo, on TMS:WorkInfo) Source: Data, Field: 179 | $NULL$ | Regular | |
| 28 | AAS:Activity | 10000546 | z2TF_Task WorkInfoType | Type | 34 | D | | Column (Table 10000523-z2TH_TaskWorkInfo, on TMS:WorkInfo) Source: Data, Field: 10001950 | $NULL$ | Regular | |
| | AAS:Activity | 10000547 | z2TF_Task WorkInfoSummary | Summary | 34 | D | | Column (Table 10000523-z2TH_TaskWorkInfo, on | $NULL$ | Regular | |

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**Figure 27 The Fields Sheet from our ITSM 9.1.02 Freebies**

# Workflow Type

The workflow type produces a text file with all the form and field information of the other two types and interpreted listsings of Active Links, Filters, and Guides.

These three images show, in order, the form information, a few selected fields and filters, and, a few active link guides.

```
schema: AAS:Activity

      Assoc:       None,
      Labels:      Activity, Activities, Activity, Activities
      Help:
      Q Results:   1000000182 - Activity ID 15 '';
                   1000000082 - Company 25 '';
                            7 - Status 21 '';
                   1000000000 - Summary 50 '';
                   1000000164 - Priority 10 '';

      Sort Order:  1000000182 - Activity ID -descending;

      Indexes:     6;
          Index    1: non-Unique, Name: I2125_0_1000000001,   1 Fields,
                      Field 1: 1000000001 - Location Company;
          Index    2: non-Unique, Name: I2125_0_7,   1 Fields,
                      Field 1: 7 - Status;
          Index    3: Unique,     Name: I2125_0_179,   1 Fields,
                      Field 1: 179 - InstanceId;
          Index    4: non-Unique, Name: I2125_0_1000000348,   1 Fields,
                      Field 1: 1000000348 - Actual Start Date;
          Index    5: non-Unique, Name: I2125_0_1000000350,   1 Fields,
                      Field 1: 1000000350 - Scheduled Start Date;
          Index    6: non-Unique, Name: I2125_0_1000000182,   1 Fields,
                      Field 1: 1000000182 - Activity ID;
FieldId  Name(Label) Reqd/Disply  Menu  Default
       1  4 Request ID                                    0 Char 15 $NULL$
       2  4 Submitter(Submitter*)                       R 0 Char 254 $USER$
```

**Figure 28 The Form information for AAS:Activity**

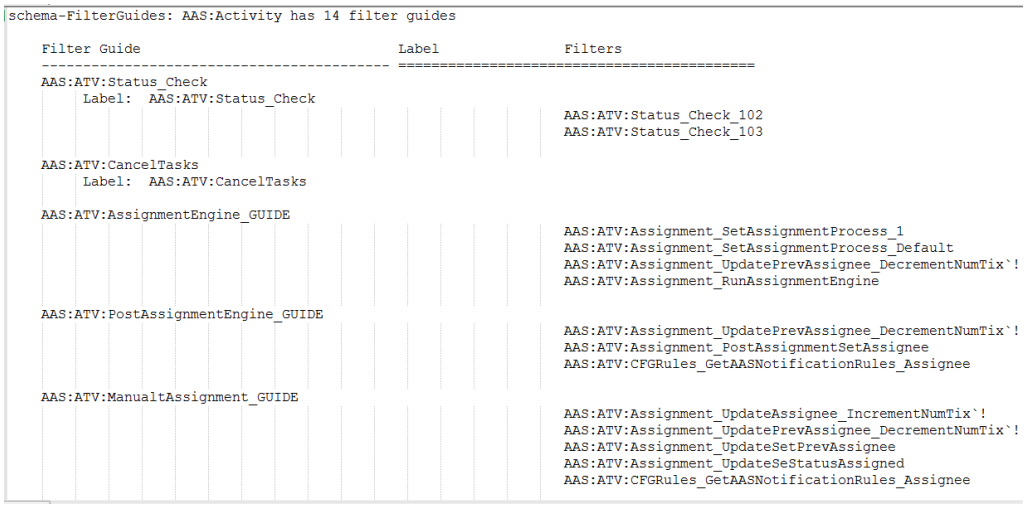
```
       1  4 Request ID                                    0 Char 15 $NULL$
       2  4 Submitter(Submitter*)                       R 0 Char 254 $USER$
       3  7 Submit Date                                   0 Time $NULL$
          Enum:  --> 10: Draft, 20: Assigned, 30: Pending, 40: In Progress, 50: Completed, 70: Cancelled, 80: Closed
1000000018  4 Last Name()                                R 0 Char 30 $NULL$
1000000063  4 Categorization Tier 1                       1 Char 60 $NULL$
          Menu:  --> Char Menu: CFG:CTL:S1-PBM-Q; Query:  on Server: @ CFG:Service Catalog LookUp; Value: 1000000063; I
                 --> Change, Failure, Request
schema-filters: AAS:Activity has 108 filters


SHR:SHR:Social_SkipSmartitInstalled       Enabled  0000  Set, Create, Service;  dev_pdho  Remedy A  2020/04/08 17:08
      Qual: ('z1D_SkipIfSmartITInstalled' = $NULL$)
      Actn:   1 of   1: Set Fields: Num fields:   1 Server: @; Schema: SHARE:Application_Properties
                        Qual:    ('Application GUID' = "SMTIT4073beb410981200cf08b7494b9")
                        Fld   1 of   1:    304415281       z1D_SkipIfSmartITInstalled = $400081600-Application GUID$


AAS:ATV:Status_Check_101                  Enabled  0101  Set;    Remedy  Action R  2020/02/02 19:08
      Qual: (('TR.Status' != $NULL$) AND ('TR.Status' != 'DB.Status'))
      Actn:   1 of   2: Set Fields: Num fields:   1 Server: @; Schema: AAS:Activity
                        Qual:    ('Request ID' = $Request ID$)
                        Fld   1 of   1:    301608900      z1D Current Database Status = $7-Status$
      Actn:   2 of   2: GdeCall: AAS:ATV:Status_Check


AAS:ATV:Status_Check_102                  Enabled  0102      Remedy  Action R  2020/02/02 19:08
      Qual: ('TR.Status' != 'TR.z1D Current Database Status')
      Actn:   1 of   1: Set Fields: Num fields:   1 Server: @; Schema: SYS:Status Transition Rules
                        Qual:    (((((Sz1D Current Database Status$ = 'From Status Int') AND ($Status$ =
```

**Figure 29 Selected Fields and Filters from AAS:Activity**



```
schema-FilterGuides: AAS:Activity has 14 filter guides

    Filter Guide                              Label              Filters
    ----------------------------------------- ========================================
    AAS:ATV:Status_Check
         Label:  AAS:ATV:Status_Check
                                                                AAS:ATV:Status_Check_102
                                                                AAS:ATV:Status_Check_103

    AAS:ATV:CancelTasks
         Label:  AAS:ATV:CancelTasks

    AAS:ATV:AssignmentEngine_GUIDE
                                                                AAS:ATV:Assignment_SetAssignmentProcess_1
                                                                AAS:ATV:Assignment_SetAssignmentProcess_Default
                                                                AAS:ATV:Assignment_UpdatePrevAssignee_DecrementNumTix`!
                                                                AAS:ATV:Assignment_RunAssignmentEngine

    AAS:ATV:PostAssignmentEngine_GUIDE
                                                                AAS:ATV:Assignment_UpdatePrevAssignee_DecrementNumTix`!
                                                                AAS:ATV:Assignment_PostAssignmentSetAssignee
                                                                AAS:ATV:CFGRules_GetAASNotificationRules_Assignee

    AAS:ATV:ManualtAssignment_GUIDE
                                                                AAS:ATV:Assignment_UpdateAssignee_IncrementNumTix`!
                                                                AAS:ATV:Assignment_UpdatePrevAssignee_DecrementNumTix`!
                                                                AAS:ATV:Assignment_UpdateSetPrevAssignee
                                                                AAS:ATV:Assignment_UpdateSeStatusAssigned
                                                                AAS:ATV:CFGRules_GetAASNotificationRules_Assignee
```

**Figure 30 Selected Filter Guides from AAS:Activity**

# Meta-Update Script

With Meta-Update, you can automate any mass data change or migration. The Meta-Update Job Console is a Meta-Update script and runs Jobs simultaeneously in as many slots as you like.

The Meta-Update distribution contains many useful samples. These are included in the Job Templates and are ready to be run as needed.

Meta-Update scripts are developed on a server or workstation – separate to the Meta-Update Job Console application.

Please see the Meta-Update User's Guide for script development. Remember that all samples can also be reviewed, copied, and edited at will.

All Meta-Update script used in the Job Console reside on the server or workstatioin that runs the Queue process..

All fields are required on the Main panel except for Categorization (strongly suggested) and attachments.

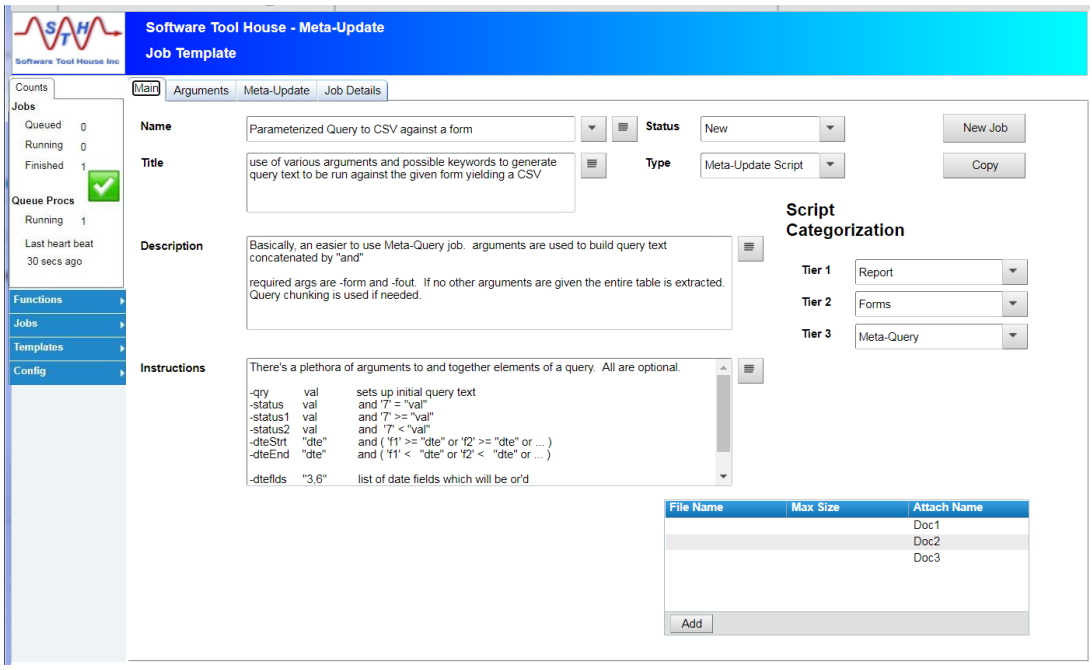



**Figure 31 Main Panel for sample script, Parameterized Meta-Query**

# Script Name and Location

For Meta-Update scripts, the script, script location, and any needed script path information is required in the Meta-Update tab. An indicator is set if the script include “Job Progress” or “Job Control”.

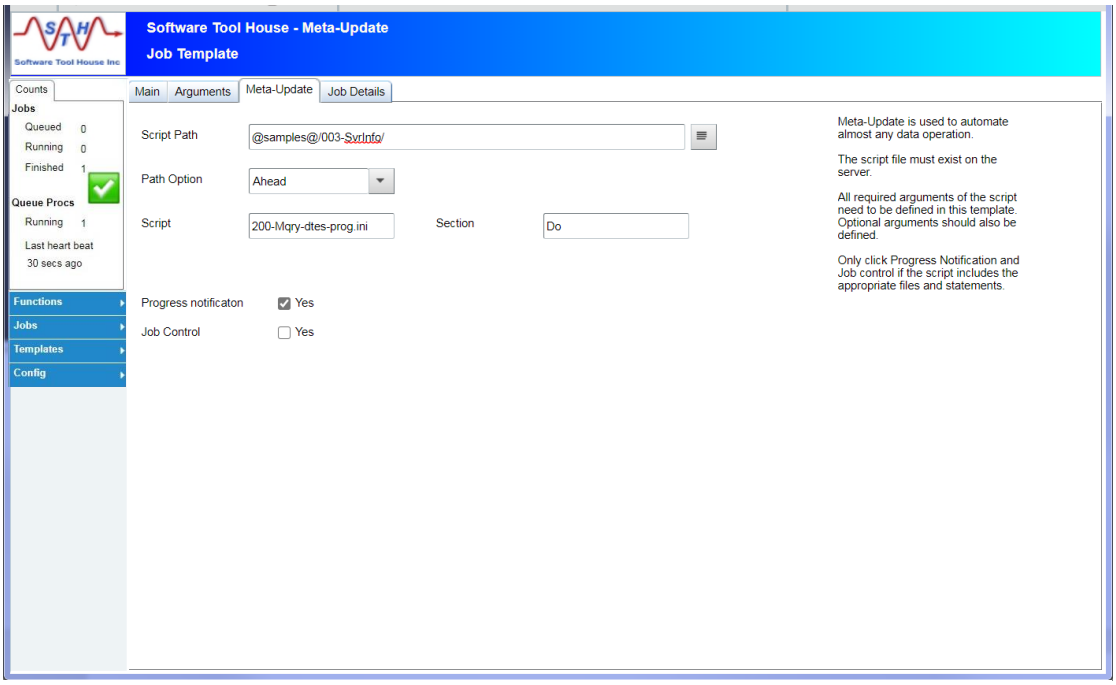



**Figure 32 Meta-Update panel for Parameterized Meta-Query**

Fields identifying the script:

| | |
|---|---|
| **`Script Path`** | Can be set to the path of the script and any other paths required by the script. |
| **`Path Option`** | Ahead of the standard paths<br>Behind the standard paths |
| **`Script`** | The script file name |
| **`Section`** | The first section to run in the script |
| **`Progress notification`** | The script includes the file **`100-JobProgress-Upd.ini`** |
| **`Job Control`** | The script includes the file **`000-Jctl-Sync.ini`** |

**Script Path**

Path separators can be coded as either a semi-colon or a colon corresponding to Windows and Linux.

Directory separators can also be coded as either a back-slash or a slash.

Specific keywords can be used in the script path.

| | |
|---|---|
| **@root@** | The Meta-Update root path – the install directory. |
| **@scripts@** | The Meta-Update root/scripts/ path. |
| **@include@** | The Meta-Update root/include/ path. |
| **@conf@** | The Meta-Update root/conf/ path. |
| **@samples@** | The Meta-Update root/samples/ path. |
| | |
| **@my-root@** | a customer “root” path |
| **@my-scripts@** | a customer scripts path |
| **@my-conf@** | a customer configuration path |

These keywords are replaced with values from the Job Confiduration.

The Queue Process will convert the script path according to its OS and its configuration. Please see Queue Process ahead for more information on adjusting keywords, and path conversions.

**Progress Notification**

When the script includes the file, **100-JobProgress-Upd.ini**, it will report its progress on the Job form. As the job progresses, a refresh of the Job detail will have a progress bar that grows until completion.

Templates for these scripts should have the **Progress notification** checked.

Please note that not all scripts are suitable for progress notifications. For example, the total number of records in a file is not known until the last record is read.

Please see **XXX** for using the JobProgress include file in scripts.

# Script Arguments

Scripts generally but not necessarily have arguments. All sample scripts do have arguments.

Sticking to the Parameterized Meta-Query example, you will see many arguments with only two required and all others having default values.

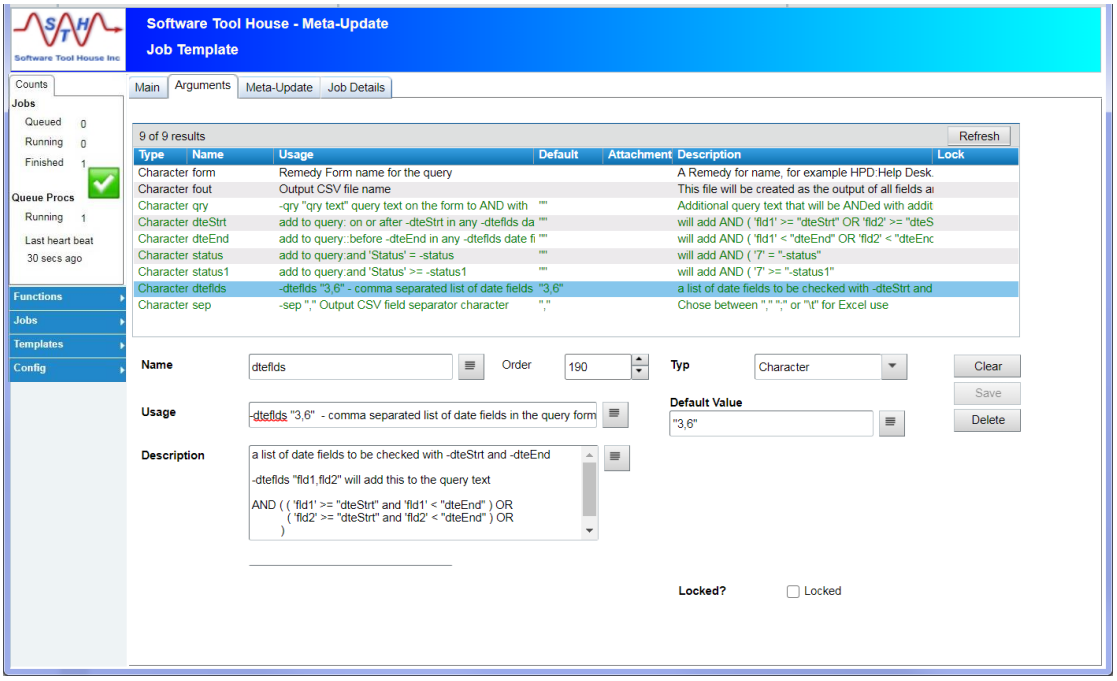



**Figure 33 Arguments Panel for sample script, Parameterized Meta-Query**

Fields identifying an argument:

| | |
|---|---|
| **Name** | This is the **Arg=** name in the script's **[Main]** section<br>eg: **dtefields** |
| **Type** | Chose between **Logical**, **Character**, **Integer**, **Real**, **File**. |
| **Usage** | This is a short description of the usage.<br>eg: **-dtefields "comma separated list of date field names or ids"** |
| **Description** | This is a longer description of the usage.<br>eg: **-dtefields "comma separated list of date field names or ids"** |
| **Default Value** | This is a default value (or null if required) for all types except **File**.<br>eg: **-dtefields "3,6"** |
| **Locked?** | When checked, the user cannot change the default value. |
| **Order** | An integer used to simply order the table of arguments. |

# Notes on File arguments

When an argument is a **`File`**, an **`Attachment`** field becomes visible. You can use the normal Remedy facilities to attach a file or delete a file.

This attached file name with no path information is supplied with the argument name to the Meta-Update job. It is also set in the read-only Attached File Name field. This is simply to allow the default Attachment column in the displayed table of arguments..

The file will be extracted from the attachment for the Meta-Update job.

If there is no default, this becomes a required argument for the Job.

If you want to use a file on the Queue server, select argument type as **`Character`** and:

- set the default value to the file name on the Queue server
- set the argument to **`Locked`**
- ensure the Script Path – in the Meta-Update Tab – will allow the file to be found.

Here's an example of a File argument from a Meta-Databot Login Id sample:

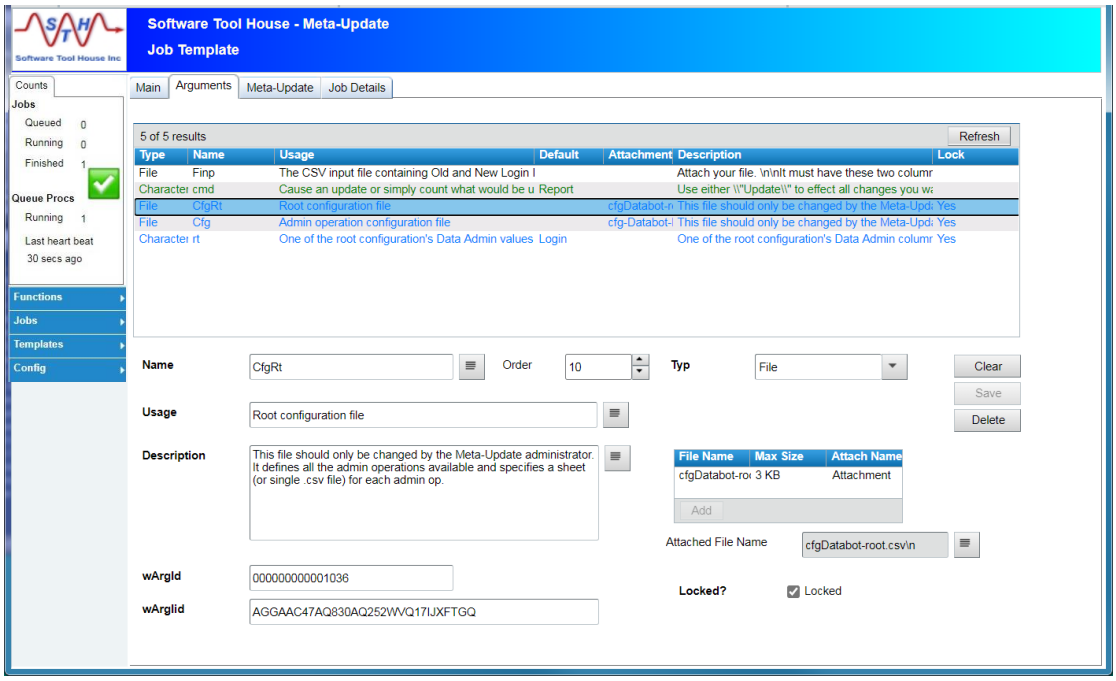



**Figure 34 -CfgRt File argument from Meta-Databot - Login ID Template sample**

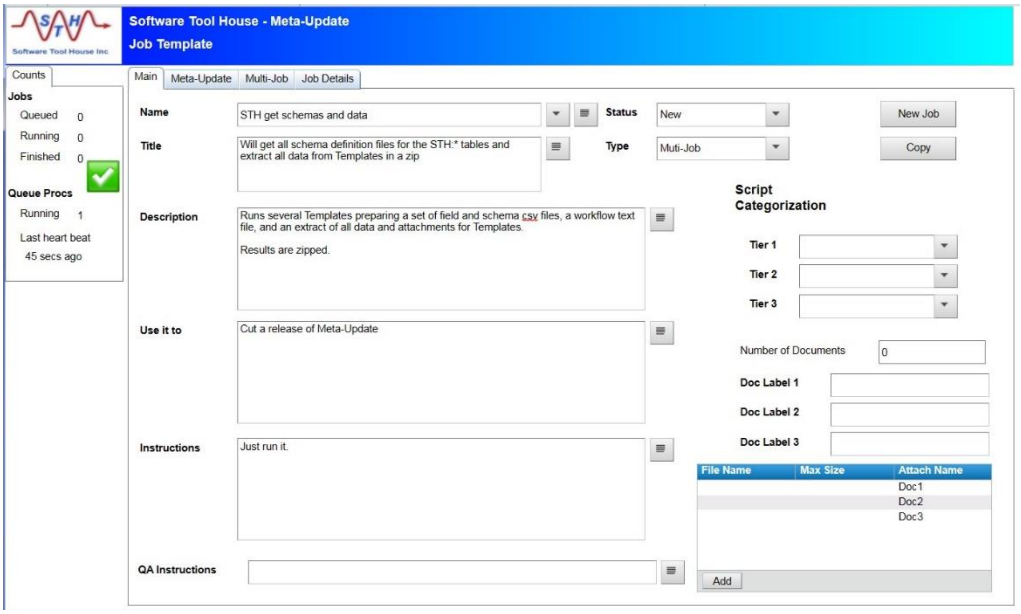
# Notes on Script Arguments defaults

A Meta-Update template effectively overrides any argument defaults of the script.

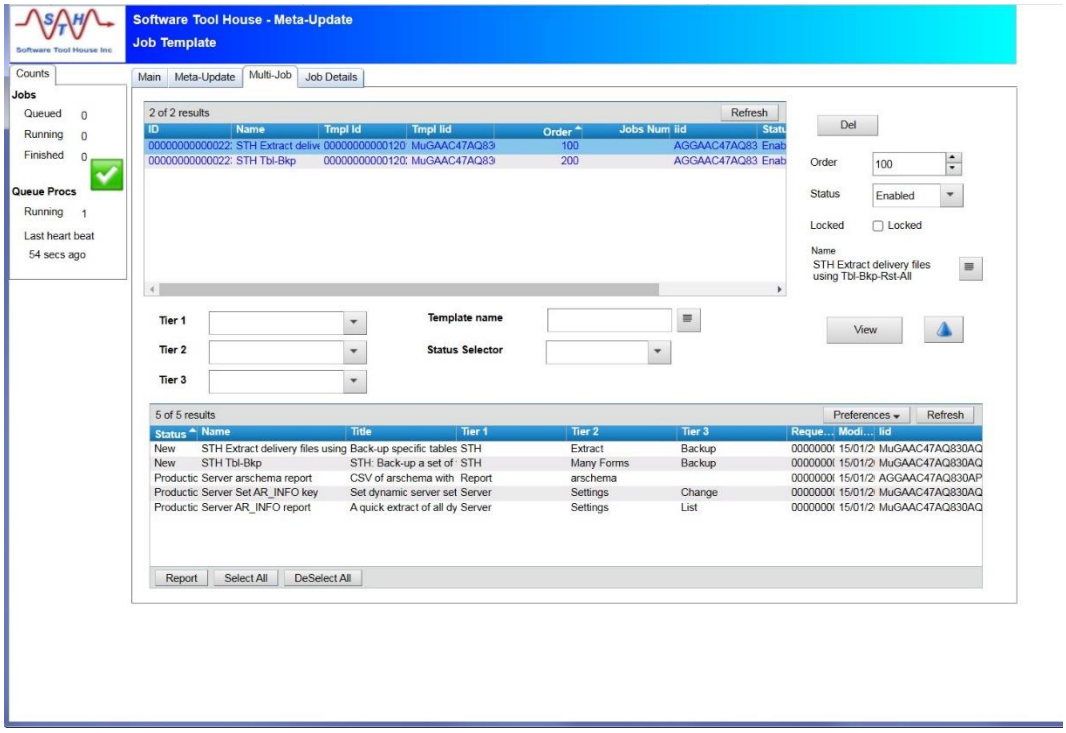
This is because all arguments defined in the script are defined in the Template and these arguments are all specified on the Meta-Update job.  As there are no missing arguments, the script defaults have no meaning.

# Multi-Job

A Multi-Job allows you to select several Templates and run them as a single Job.




The Multi-Job tab allows you to bring templates into the group.




Only Templates that are “Complete” are available.

# Details Tab

All Templates and Jobs have a Details tab available.

Here you can select to zip output files.  You can also enter command to be run before and after the job runs.

# Index

**No index entries found.**