

Producing Script Templates & Parameterizing Scripts

Training Objective

To develop flexible and repeatable code assets your teammates can use.
To use parameterized versions of code built by Civis and your teammates.

After this video, you will be able to:

- Create your own Platform jobs from existing script templates
- Add parameters to Platform scripts
- Share templated versions of your code with teammates

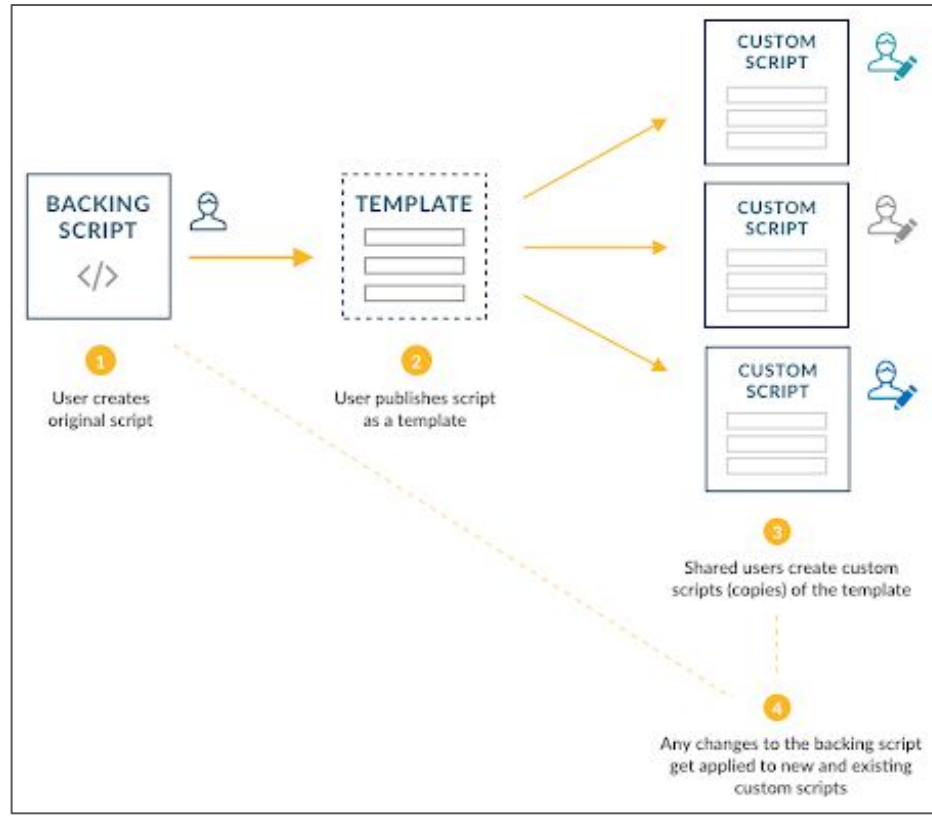


= Content for advanced users

Training Roadmap

- [What are Script Templates?](#)
- [Using Script Templates](#)
 - [Script Templates Pane](#)
 - [Script Templates Details Page](#)
 - [Creating Custom Scripts](#)
- [Creating Script Templates](#)
 - [Writing a Backing Script](#)
 - [Publishing a Template](#)
 - [Sharing Script Templates](#)
 - [Making Changes](#)
 - [User Context](#)

What are Script Templates?



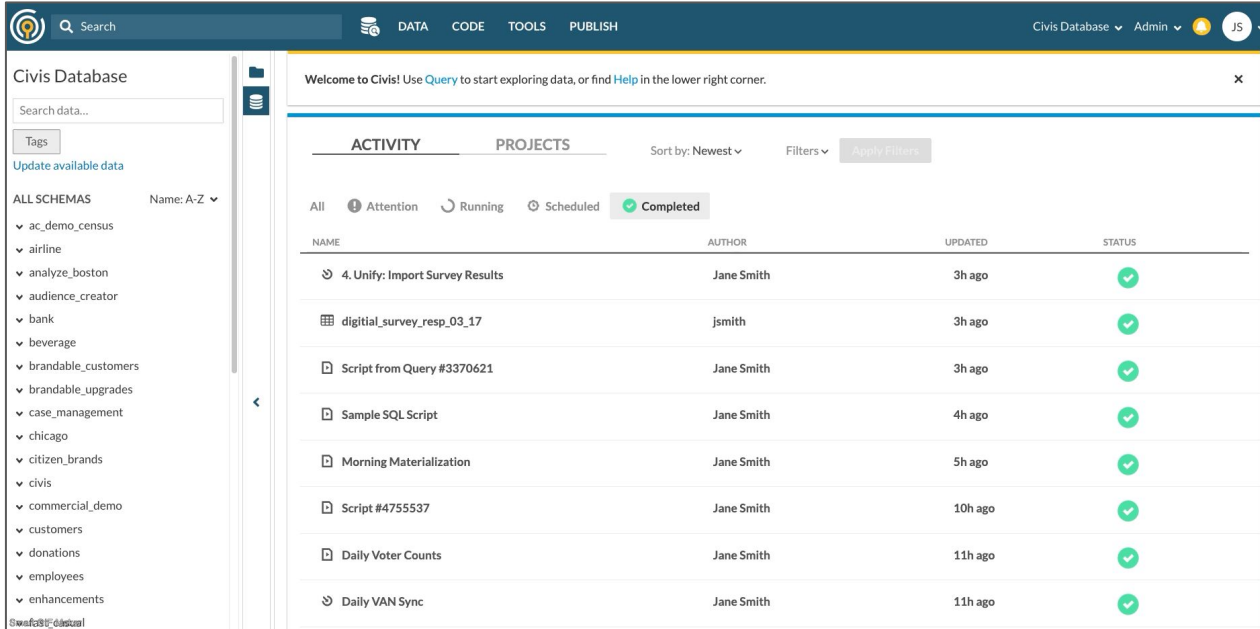
See [Script Templates](#) for more information.

Using Script Templates

Script Templates Pane

To open the **Script Templates Pane**, go to **Code** in the navigation bar and click **More Script Templates**.

Clicking on a template name will create a *custom script* from that template. Clicking on the standard action menu will direct you to the **Script Template Details Page**.



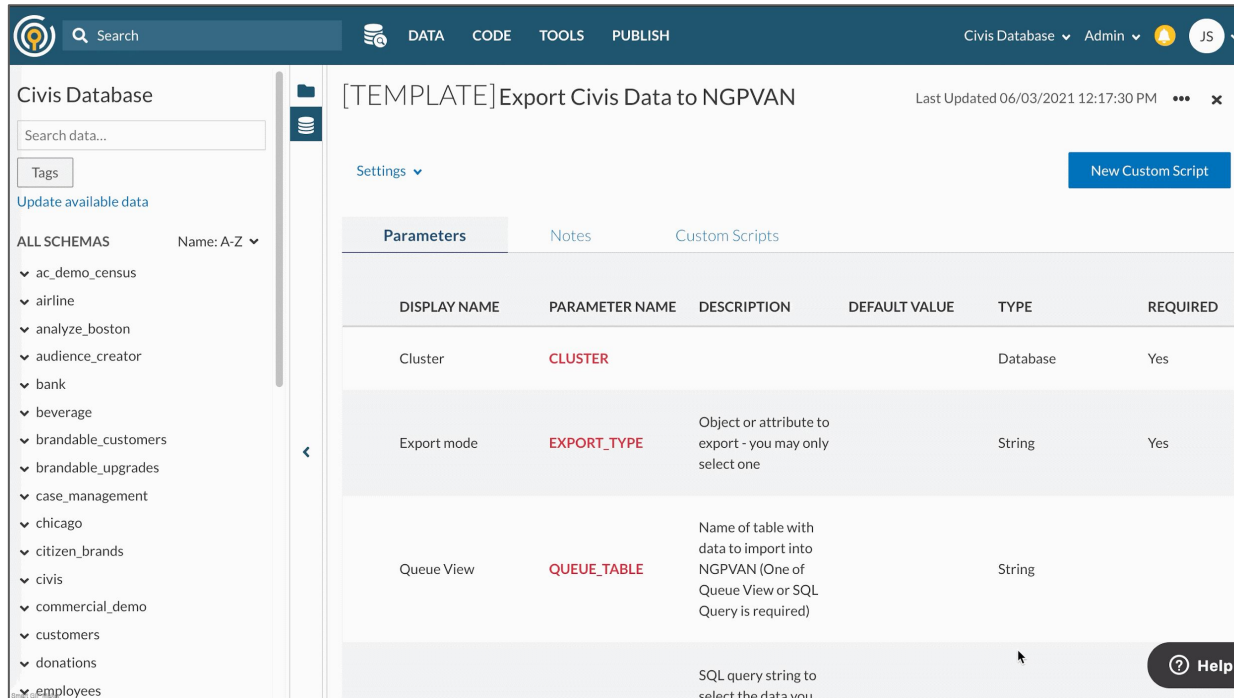
The screenshot displays the Civis Database interface. On the left is the 'Civis Database' sidebar with a search bar and a list of schemas. The main area shows a 'Welcome to Civis!' message and a table of script templates. The table has columns for NAME, AUTHOR, UPDATED, and STATUS. The 'Completed' filter is selected, and all listed scripts are in a 'Completed' status.

NAME	AUTHOR	UPDATED	STATUS
4, Unify: Import Survey Results	Jane Smith	3h ago	Completed
digital_survey_resp_03_17	jsmith	3h ago	Completed
Script from Query #3370621	Jane Smith	3h ago	Completed
Sample SQL Script	Jane Smith	4h ago	Completed
Morning Materialization	Jane Smith	5h ago	Completed
Script #4755537	Jane Smith	10h ago	Completed
Daily Voter Counts	Jane Smith	11h ago	Completed
Daily VAN Sync	Jane Smith	11h ago	Completed

Using Script Templates

Script Templates Details Page

The **Script Template Details Page** includes information on the *parameters* in the template as well as *dependent custom scripts*.

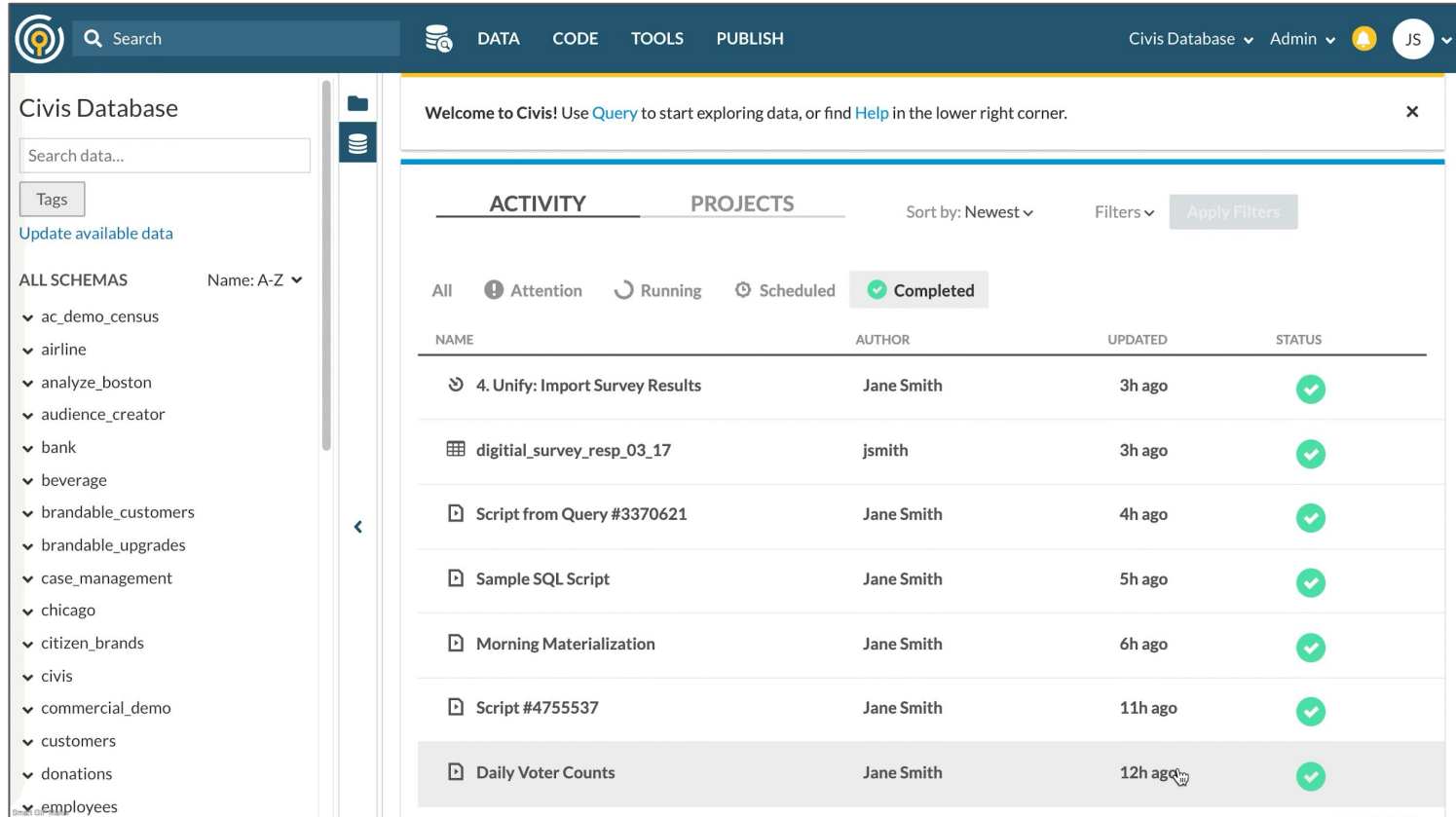


The screenshot shows the 'Script Template Details Page' for a template named '[TEMPLATE] Export Civis Data to NGPVAN'. The page is part of the Civis Database interface, which includes a search bar, navigation tabs (DATA, CODE, TOOLS, PUBLISH), and user information (Civis Database, Admin, JS). The main content area displays a table of parameters for the template, with columns for DISPLAY NAME, PARAMETER NAME, DESCRIPTION, DEFAULT VALUE, TYPE, and REQUIRED. The parameters listed are Cluster, Export mode, and Queue View. A 'New Custom Script' button is visible in the top right corner of the main content area.

DISPLAY NAME	PARAMETER NAME	DESCRIPTION	DEFAULT VALUE	TYPE	REQUIRED
Cluster	CLUSTER			Database	Yes
Export mode	EXPORT_TYPE	Object or attribute to export - you may only select one		String	Yes
Queue View	QUEUE_TABLE	Name of table with data to import into NGPVAN (One of Queue View or SQL Query is required)		String	

Using Script Templates

Creating Custom Scripts



The screenshot shows the Civis Database interface. On the left is a sidebar with a search bar and a list of schemas. The main area displays a list of scripts under the 'ACTIVITY' tab, sorted by 'Newest'. The scripts listed are all in a 'Completed' status.

ALL SCHEMAS Name: A-Z ▾

- ac_demo_census
- airline
- analyze_boston
- audience_creator
- bank
- beverage
- brandable_customers
- brandable_upgrades
- case_management
- chicago
- citizen_brands
- civis
- commercial_demo
- customers
- donations
- employees

Welcome to Civis! Use [Query](#) to start exploring data, or find [Help](#) in the lower right corner. ✕

ACTIVITY **PROJECTS** Sort by: Newest ▾ Filters ▾ [Apply Filters](#)

All **Attention** **Running** **Scheduled** **Completed**

NAME	AUTHOR	UPDATED	STATUS
4. Unify: Import Survey Results	Jane Smith	3h ago	
digital_survey_resp_03_17	jsmith	3h ago	
Script from Query #3370621	Jane Smith	4h ago	
Sample SQL Script	Jane Smith	5h ago	
Morning Materialization	Jane Smith	6h ago	
Script #4755537	Jane Smith	11h ago	
Daily Voter Counts	Jane Smith	12h ago	

Creating Script Templates

Writing a Backing Script: Adding Parameters

To create a script template, you must start by creating a script (R, Python, SQL, Javascript or Container) which will contain the code you want to share. This will be the **backing script**.

Add any parameters your code expects.

Sample Python Script Template

Last Updated 05/12/2021 1:49:51 PM ⋮

JL Joseph Loffredo | Settings ▾

 Manage Versions  **Set Parameters**  Publish as Template  History 

Creating Script Templates

Writing a Backing Script: Adding Parameters

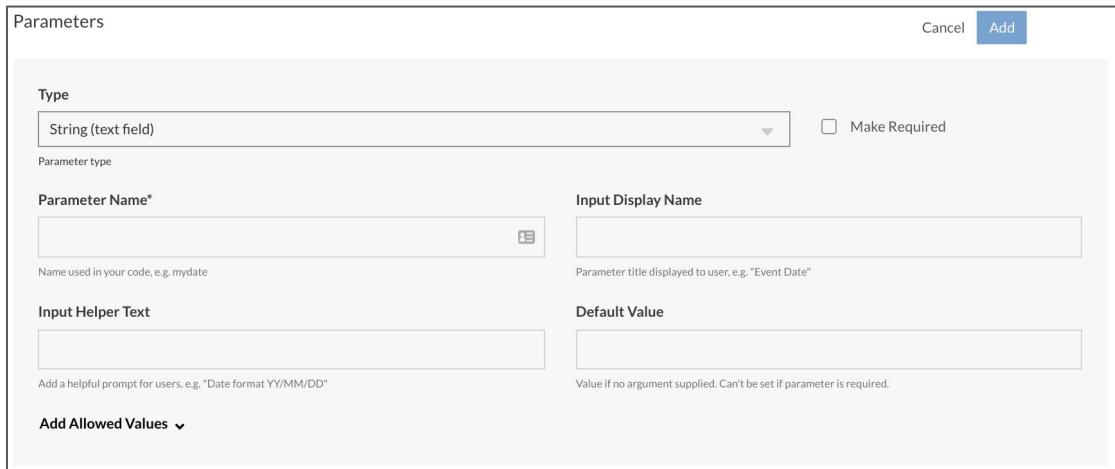
Type: select from **String**; **Multi-line String**; **Integer**; **Float**; **Boolean**; Redshift, Custom, or **AWS Credential**; **Database**; or **File**

Parameter Name: the variable name that you will use in your code

Input Display Name: what the parameter will be labeled as in Platform

Input Helper Text: helpful prompt for users that describes what values parameter takes

Default Value: if the parameter is *optional*, what value should be supplied by default



The screenshot shows the 'Parameters' configuration dialog in the AWS CloudFormation console. The dialog has a title bar with 'Parameters' on the left and 'Cancel' and 'Add' buttons on the right. The main content area is divided into several sections:

- Type:** A dropdown menu currently set to 'String (text field)'. To its right is a checkbox labeled 'Make Required' which is currently unchecked.
- Parameter Name*:** A text input field with a small icon to its right. Below it is the text 'Name used in your code, e.g. mydate'.
- Input Display Name:** A text input field. Below it is the text 'Parameter title displayed to user, e.g. "Event Date"'. The asterisk indicates this field is required.
- Input Helper Text:** A text input field. Below it is the text 'Add a helpful prompt for users, e.g. "Date format YY/MM/DD"'.
- Default Value:** A text input field. Below it is the text 'Value if no argument supplied. Can't be set if parameter is required.'.
- Add Allowed Values:** A dropdown menu with a downward arrow.

See [Welcome to Scripts: Script Parameters](#) for more information.

Creating Script Templates

Writing a Backing Script: Platform Python Script Example

Add a **Custom Credential** parameter to your script to hold an API key your Python code needs.

Code	Platform UI												
<pre>import civis import os client = civis.APIClient() url = "https://app.pendo.io/api/v1/re port/1234/results.csv" headers = { 'Api-key': os.environ['API_KEY_PASSWORD'], 'content-type': "text/csv" } response = requests.get(url, headers = headers)</pre>	<p>Parameters Pane:</p> <div style="border: 1px solid #ccc; padding: 10px;"> <p>Parameters + New Parameter</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">PARAMETER NAME</th> <th style="width: 20%;">DISPLAY NAME</th> <th style="width: 10%;">DEFAULT</th> <th style="width: 15%;">TYPE</th> <th style="width: 10%;">REQUIRED?</th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>API_KEY</td> <td>API KEY</td> <td>-</td> <td>Custom Credential</td> <td>Yes</td> <td style="text-align: right;">✎ 🗑</td> </tr> </tbody> </table> <p>Environment variables: API_KEY_ID API_KEY_USERNAME API_KEY_PASSWORD</p> </div> <p>Script UI:</p> <div style="border: 1px solid #ccc; padding: 10px;"> <p>Sample Parameterized Python Script Last Updated 05/12/2021 1:39:09 PM</p> <p>JL Joseph Loffredo Settings ▾ 🔗 Manage Versions + Set Parameters ↶ Publish as Template ⌵ History Run</p> <hr/> <p>API KEY *</p> <div style="border: 1px solid #ccc; padding: 5px; display: flex; align-items: center;"> Select... ▾ </div> <p>Add Credential <small>Select your API key.</small></p> </div>	PARAMETER NAME	DISPLAY NAME	DEFAULT	TYPE	REQUIRED?		API_KEY	API KEY	-	Custom Credential	Yes	✎ 🗑
PARAMETER NAME	DISPLAY NAME	DEFAULT	TYPE	REQUIRED?									
API_KEY	API KEY	-	Custom Credential	Yes	✎ 🗑								

Creating Script Templates

Writing a Backing Script: Formatting Parameters in Code

Language	Parameter Format
SQL	Wrap parameters in double curly braces (e.g. <code>{{myParamName.literal}}</code>)
Python	Read parameters as environment variables (e.g. <code>os.environ['myParamName']</code>)
Javascript	Use parameters values via the <code>civis.config</code> object (e.g. <code>if (civis.config.myBoolParam) { query('select * from {{myParamName}}', civis.config) }</code>)
R	Read parameters as environment variables (e.g. <code>Sys.getenv('myParamName')</code>)
Container	Read parameters as environment variables formatted in the script's coding language

See [Welcome to Scripts: Script Parameters](#) for more information.

Creating Script Templates

Publishing a Template

To create a script template for other users to use, click the **Publish as Template** button in your script.

Sample Python Script Template

Last Updated 05/12/2021 1:49:51 PM ⋮

JL Joseph Loffredo | Settings ▾

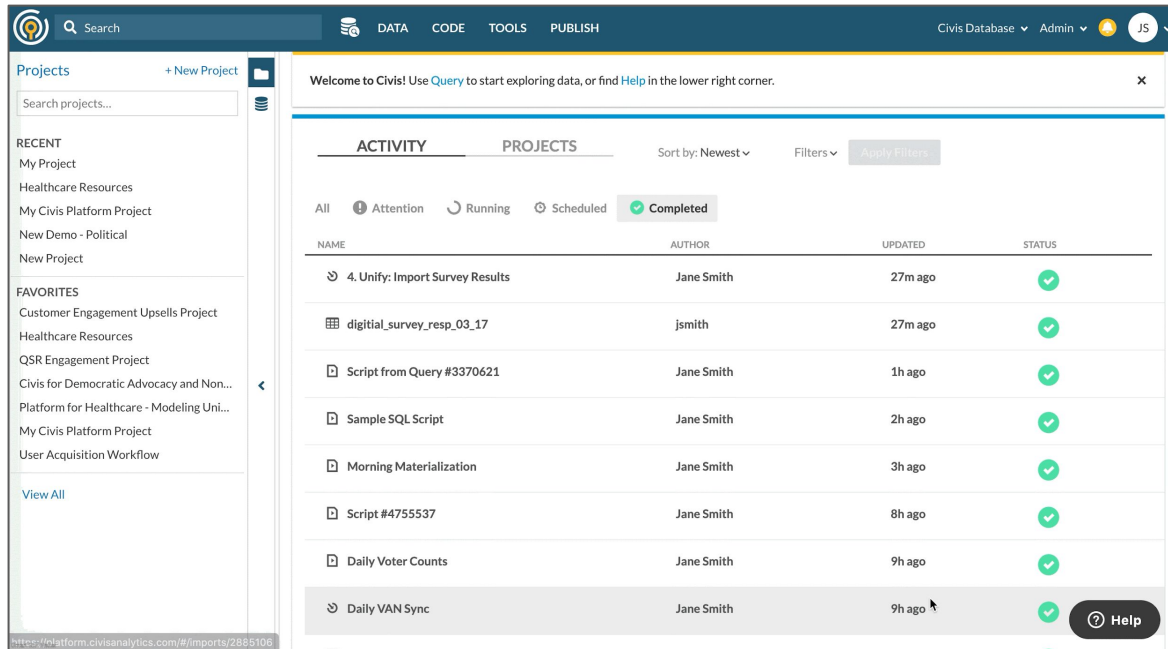
 Manage Versions  Set Parameters  **Publish as Template**  History 

Creating Script Templates

Sharing Script Templates

By default, any scripts you publish are shared with users in your primary Platform group.

To share a script template with other users/groups, navigate to the **Script Template Details Page** and select **Share** from the standard action menu.



The screenshot shows the Civis interface with a navigation sidebar on the left and a main content area. The sidebar includes sections for 'RECENT' and 'FAVORITES' projects. The main content area displays a 'PROJECTS' table with columns for NAME, AUTHOR, UPDATED, and STATUS. The table lists several completed scripts, with the 'Daily VAN Sync' script highlighted at the bottom.

NAME	AUTHOR	UPDATED	STATUS
4. Unify: Import Survey Results	Jane Smith	27m ago	✓
digital_survey_resp_03_17	jsmith	27m ago	✓
Script from Query #3370621	Jane Smith	1h ago	✓
Sample SQL Script	Jane Smith	2h ago	✓
Morning Materialization	Jane Smith	3h ago	✓
Script #4755537	Jane Smith	8h ago	✓
Daily Voter Counts	Jane Smith	9h ago	✓
Daily VAN Sync	Jane Smith	9h ago	✓

Creating Script Templates

Making Changes

After a script template is created, only the name and permissioning are editable. It is *not* possible to change *which* backing script the template is backed by.

You can, however, update the backing script. Custom scripts based on the template will use the updated version of the backing script the next time they are run.

Creating Script Templates

User Context

When creating a new script template, it is important to determine the appropriate *user context* for the backing script.

User context determines whether custom scripts created from the template will run using the custom script runner credentials, or the backing script's runner credentials.

The default and most common user context value is **runner**, but **author** context is useful if:

- your script requires access to data you don't want shared with end users
- you want the script to execute on your organization's computer (kubernetes) cluster because it requires more capacity than end users have access to
- you want the script to execute using your own credentials

***Note that user context may only be updated via the Platform API.**

Creating Script Templates

User Context

Runner (default)	Author
<p>Any custom script created from the script template will use the identity and resources available to whoever <i>runs</i> (the “running-as” user) the custom script.</p>	<p>Any custom script created from the script template will:</p> <ul style="list-style-type: none">● run on the backing script's author's compute cluster● only have access to resources available to the backing script's author● have any objects created by the script owned by the author of the custom script● For Container, R, and Python scripts, the script will run with the author's API key (using the author's identity).

Thank you!

If you have any questions, please contact Civis Client Success at support@civisanalytics.com.