

Invoke scripts for Jupyter notebooks

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The hub tool invoke script is located in the tool's middleware/ subdirectory. When you first create a tool, the basic invoke script provided must be edited to work with Jupyter notebook tools.

This writeup shows you how to create Jupyter tools with three different appearances: notebook, App, and Tool mode.

invoke_app and start_jupyter

To deploy a Jupyter notebook as a tool on your hub, you call the invoke_app executable, which in turn calls start_jupyter. Each have their own arguments:

arguments for start_jupyter

```
-h, --help    show this help message and exit.
-d           Show debug (verbose) output.
-t           Run as a Tool with no notebook controls.
-c           Copy instead of link notebook files.
-A           Run in AppMode.
-T dir       Search for notebook starting in dir.
--themes     Enable notebook themes
```

arguments for invoke_app

```
-t Tool name
-C command to execute
-r Rappture version to use (normally specify none for notebook tools
)
-w headless
-u environment package (repeat as necessary)
```

invoke_app: starting point

The basic invoke script for Jupyter notebooks looks like this:

```
/usr/bin/invoke_app "$@" -t TOOLNAME \
                        -C "start_jupyter -T @tool APP.ipynb" \
                        -r none \
                        -w headless \
```

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```
-u anaconda-X
```

Invoking a Jupyter tool this way gives a notebook with all its code cells displayed to the user.

Where:

- TOOLNAME is the short name of the tool
- APP is the name of the main notebook that runs the tool
- anaconda-X is the current anaconda installation

start_jupyter arguments

Control the way the notebook appears when run as a tool, using the arguments passed to the start_jupyter executable.

You can run a Jupyter tool in three ways:

- notebook mode, in which all code cells are displayed to the user (shown above)
- app mode, in which code cells are initially hidden but can be displayed
- tool mode, in which code cells are hidden and cannot be displayed

for App Mode

For a notebook tool that hides its code cells and shows only the UI and markdown elements on initial run, add the -A argument in the start_jupyter call:

```
/usr/bin/invoke_app "$@" -t TOOLNAME \  
    -C "start_jupyter -A -T @tool APP.ipynb" \  
    -u anaconda-X \  
        -w headless \  
    -r none
```

The tool user can toggle the tool's "Edit App" button to show the underlying code cells, making this a great teaching/demo option.

NOTE that this differs from the invoke_app -A argument.

for Tool Mode

To permanently hide code cells from the user in App Mode, specify the -A and -t arguments in

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the start_jupyter call:

```
/usr/bin/invoke_app "$@" -t TOOLNAME \  
    -C "start_jupyter -A -t -T @tool APP.ipynb" \  
    -u anaconda-X \  
        -w headless \  
    -r none
```

The Edit App button will not be displayed to the tool user.

NOTE that this differs from the invoke_app -t argument.

errors

specify no rappture

```
/usr/bin/invoke_app "$@" -t TOOLNAME \  
    -C "start_jupyter -T @tool APP.ipynb" \  
    -u anaconda-X \  
        -w headless \  
    -r none
```

Error:

Running the tool's invoke script from a workspace, returns:

```
"could not find a rappture installation: RAPPTURE_PATH=,"
```

Fix:

Be sure to supply the "-r none" argument in the invoke_app call, as above. No quotation marks are needed.