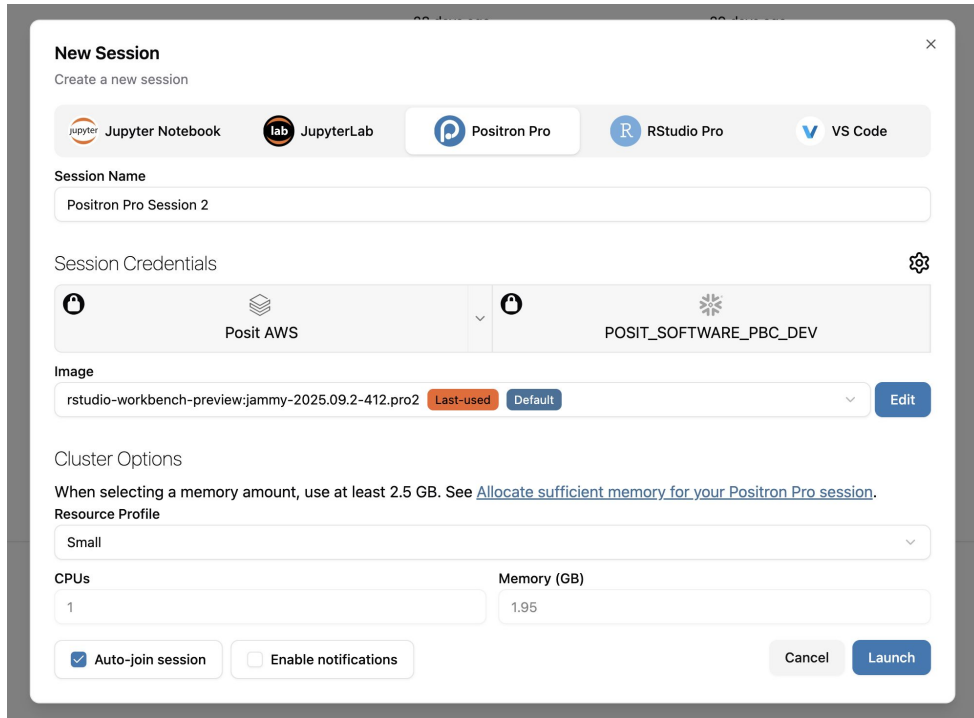


# Workbench Audited Jobs

# Workbench

Workbench is an on-premise Posit product that gives you remote access to you favorite IDE(s) including:

- RStudio
- Jupyter
- VS Code
- Positron.

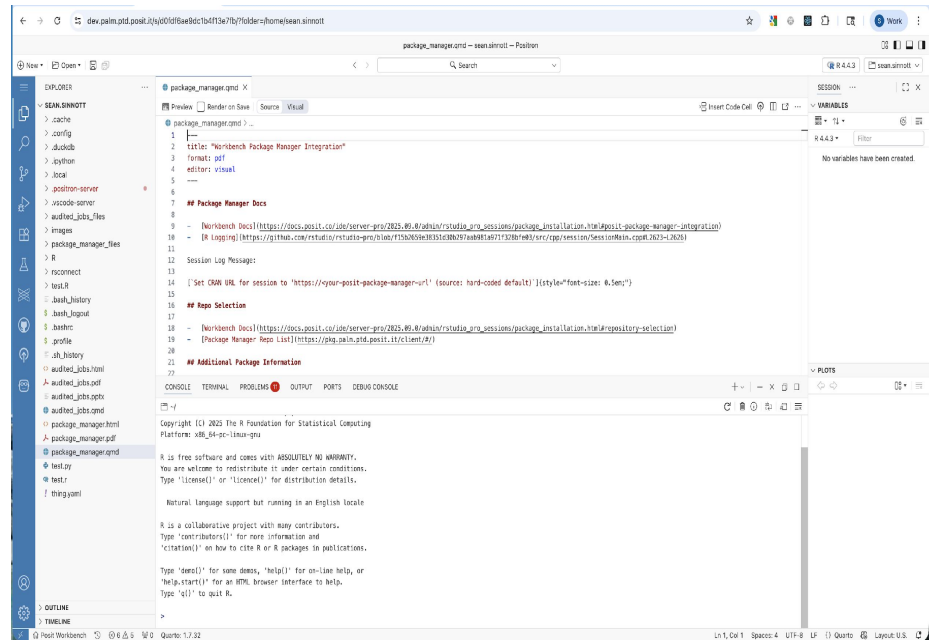


The screenshot shows the 'New Session' dialog box in Posit Workbench. The dialog is titled 'New Session' and has a close button (X) in the top right corner. Below the title, it says 'Create a new session'. There are five buttons for selecting an IDE: 'Jupyter Notebook', 'JupyterLab', 'Positron Pro', 'RStudio Pro', and 'VS Code'. The 'Positron Pro' button is selected. Below the IDE selection, there is a 'Session Name' field with the text 'Positron Pro Session 2'. Under 'Session Credentials', there are two dropdown menus: 'Posit AWS' and 'POSIT\_SOFTWARE\_PBC\_DEV'. The 'Image' section shows a dropdown menu with the selected image 'rstudio-workbench-preview:jammy-2025.09.2-412.pro2' and an 'Edit' button. The 'Cluster Options' section includes a note: 'When selecting a memory amount, use at least 2.5 GB. See [Allocate sufficient memory for your Positron Pro session.](#)' Below this is a 'Resource Profile' dropdown set to 'Small'. There are two input fields: 'CPUs' with the value '1' and 'Memory (GB)' with the value '1.95'. At the bottom, there are two checkboxes: 'Auto-join session' (checked) and 'Enable notifications' (unchecked). Finally, there are 'Cancel' and 'Launch' buttons.

# Workbench - On-premise software

The Workbench environment provides a number of benefits over local development:

- Increased resources
- Standardized environments
- Data never leaves the server environment



The screenshot displays the RStudio Workbench interface. The main editor window shows a file named `package_manager.qmd` with the following content:

```
1 ---
2 title: "Keribench Package Manager Integration"
3 format: pdf
4 editor: visual
5 ---
6
7 ## Package Manager Docs
8
9 - [Keribench Docs](https://docs.posit.co/user-server-pro/2023-01-08/whats/rstudio_pro_sessions/package_installation.html#posit-package-manager-integration)
10 - [R Logging](https://github.com/rstudio/rstudio-pro/blob/153069e8835c88b971a898149717320b7e8/rsrc/session/SessionMain.cpt#L2626)
11
12 Session Log Message:
13
14 [ Set CRAN URL for session to "https://your-posit-package-manager-ur" (source: hard-coded default) ] (style="font-size: 0.5em;")
15
16 ## Repo Selection
17
18 - [Keribench Docs](https://docs.posit.co/user-server-pro/2023-01-08/whats/rstudio_pro_sessions/package_installation.html#repository-selection)
19 - [Package Manager Repo List](https://pkg.palm.psd.posit.co/client/#)
20
21 ## Additional Package Information
22
23
```

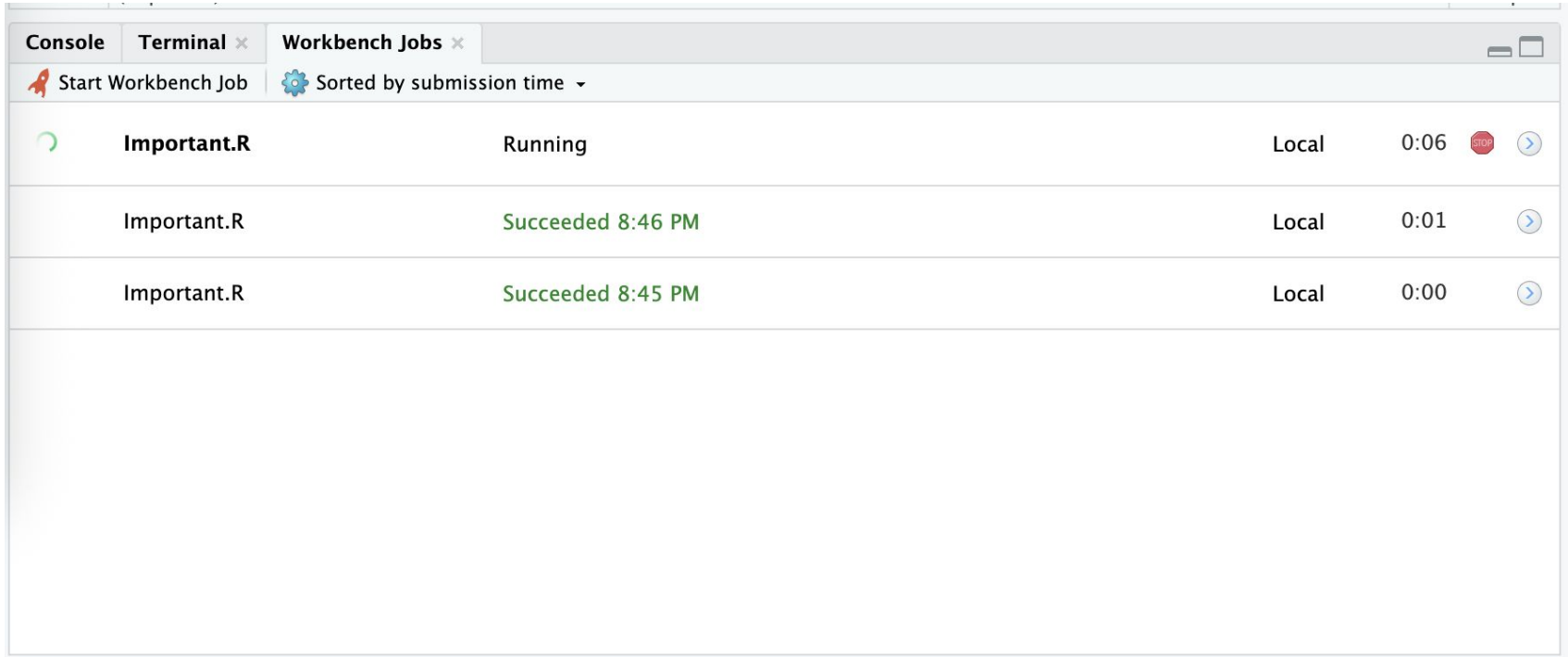
The interface also shows a file explorer on the left with a tree view of the project structure, including folders like `cache`, `conf`, `docs`, `python`, `local`, `positron-server`, `vscode-server`, `wdated_jobs_files`, `images`, `package_manager_files`, `R`, `rconnect`, `test.R`, `test.R_history`, `test.R_history`, `wdated_jobs.html`, `wdated_jobs.pdf`, `wdated_jobs.pptx`, `wdated_jobs.qmd`, `package_manager.html`, `package_manager.pdf`, `package_manager.qmd`, `test.r`, `test.r`, and `things.yaml`. The bottom status bar indicates the version of Quarto as 1.7.32.

# Workbench Jobs - What do they do?





Workbench jobs are asynchronous jobs that can be launched from an IDE:

- Run in the background while user does other work.
- Runs in a variety of languages: R, python, etc.
- Runs in various environments: locally, slurm, kubernetes.

# Workbench Jobs - What's running?



The screenshot shows a web interface for managing Workbench Jobs. At the top, there are tabs for 'Console', 'Terminal', and 'Workbench Jobs'. Below the tabs, there is a 'Start Workbench Job' button and a settings menu 'Sorted by submission time'. The main area displays a table of jobs with columns for job name, status, location, and duration.

Job Name	Status	Location	Duration	Actions
Important.R	Running	Local	0:06	 
Important.R	Succeeded 8:46 PM	Local	0:01	
Important.R	Succeeded 8:45 PM	Local	0:00	

# Workbench Jobs - What was run?

## Important.R

FINISHED

CLUSTER Local

STATUS ● FINISHED

EXIT CODE 0

SUBMITTED 5/28/2025, 8:53:24 PM

EXECUTABLE /bin/bash

ARGUMENTS `-c cd ~ && /opt/R/4.4.3/lib/R/bin/R --no-echo --no-save --no-restore -f ~/Important.R`

TAGS 🔍 rstudio-r-script-job-~/Important.R 🔍 pwb-audited-job:false

## OUTPUT

```
[1] "This is important."
```

# Audited Jobs - Motivation

Regulated industries usually have a concept like a **final run**.

Job Run	Final Run
Iteration	Retention
Never the Same	Reproducible
Disposable	Verifiable

# Audited Jobs - Start Audited Job

Run Script as Workbench Job

Workbench Job Options Environment

**Script Paths**

R Script:

Working Directory:

R Version:  

**Auditing**

Include auditing details with this job

Current Environment  
R 4.4.3



# Audited Jobs - What's running?

Job Name	Status	Location	Duration	Actions
Important.R	Running	Local	0:28	
Important.R	Succeeded 8:54 PM	Local	1:00	
Important.R	Succeeded 8:46 PM	Local	0:01	
Important.R	Succeeded 8:45 PM	Local	0:00	

# Audited Jobs - Enhancements

We build on workbench jobs by having:

- Long(er) retention policy.
- Environment capture.
- Output digital signature.

# Audited Jobs - Environment Capture

## Important.R

FINISHED

Download Audit Details

CLUSTER Local

STATUS ● FINISHED

EXIT CODE 0

SUBMITTED 5/28/2025, 8:59:17 PM

EXECUTABLE /opt/R/4.4.3/lib/R/bin/R

ARGUMENTS --no-echo --no-save --no-restore -f ~/Important.R

TAGS 🔍 rstudio-r-script-job-~/Important.R 🔍 pwb-audited-job:true 🔍 pwb-audited-job-id:8d8ecc8e-c78f-4fc2-b983-80f9cdd8c794

### AUDIT DETAILS

	Digital Signature	System	R Environment
VERSION	4.4.3		
BLAS	/usr/lib/aarch64-linux-gnu/openblas-pthread/libblas.so.3		
LAPACK	/usr/lib/aarch64-linux-gnu/openblas-pthread/libopenblas-p0.3.20.so		
LIBRARIES	/home/seansinnott/R/aarch64-unknown-linux-gnu-library/4.4 /opt/R/4.4.3/lib/R/library		
PACKAGES	KernSmooth=2.23-26 MASS=7.3-64 Matrix=1.7-2 base=4.4.3 boot=1.3-31 class=7.3-23 cluster=2.1.8 codetools=0.2-20		

### OUTPUT

```
[1] "This is important."
```

# Audited Jobs - Digital signature.

## Important.R

FINISHED

Download Audit Details

CLUSTER Local

STATUS ● FINISHED

EXIT CODE 0

SUBMITTED 5/28/2025, 8:59:17 PM

EXECUTABLE /opt/R/4.4.3/lib/R/bin/R

ARGUMENTS --no-echo --no-save --no-restore -f ~/Important.R

TAGS 🔍 rstudio-r-script-job-~/Important.R 🔍 pwb-audited-job:true 🔍 pwb-audited-job-id:8d8ecc8e-c78f-4fc2-b983-80f9cdd8c794

### AUDIT DETAILS

	Digital Signature	System	R Environment
VERIFIED	Yes		
ALGORITHM	RSA-SHA256		
PUBLIC KEY ID	s/TpY0UGmwCg76kOeRuPGR3jQQ32HQmfeEwZVqmQrQs=		
SIGNATURE	Mbk7uNQ99nDMsvdl9MtJoRWRllftPSl7Uzw5vsj+U31+GegnaBMkkPQmGnvGxZ/WR/kvBYuG4QLFPBfmXYx737dsfH4AFSZ/aP93pTemde0H5rAN3DQ194JQvMA+cncr8nFCWa2x bzh+4AExfMNPdc/8LNzgGr/e7knbkOeMuj3unLRA5GqqduqNeLMCHHHPr81+jYDngxy8LceF+Zi6i5RUpsh95ftOm5GBYCPpccdD4O2YtVBkplXFJ9UMc/EMvr66cczqsWbf7mmfg1cX nLj55kVrme6Hu7kX9U9rZxGmoq7B8jkayDsbj+W76TqvZ3/T4TKfVks8k4j5DXBy0cg5OTQvngb0afHkX5+C377FpdKykMIT1M6BNXXhzQpx+QhiLNcbtdMcAyM5jnbNIR6X9rYaUTd oofEXpfbkkyek5CPY0T7666jN9zB8eJ2qihUzK785puOL+j35uPqzrpn8AKGUJCLLRdlmfuKc63fFISITntWnXOk2ke/Z3wgTEyFbe3BgcDMtgCOvNalyOyETg9OpvsL1Tt1SHJTJSEU 252PX2q+6tK8LOuAjlBJ9FWdegDY+z05dPXJ2HU6Gxt6m0au4ZlbOx7d+vw5RI+UHctEHRxv3C5/geoYK5ogdW/Q/QmRqtUoS+puIWh29UH4CQ=		

### OUTPUT

```
[1] "This is important."
```

# Audited Jobs - Bespoke Metadata

## AUDIT DETAILS

Digital Signature	System	R Environment	User Defined Data
<b>ASSAY SUMMARY</b>	Assay Data Summary for Compound XDR-47892 Compound Information Name: XDR-47892 (Azafenoxapril) Formula: C23H27N3O5S Class: Small molecule kinase inhibitor		