The SAS® Life Science Analytics Framework API 2.4 is available for use with SAS® Life Science Analytics Framework 5.3.x.

This release has been updated to incorporate features and changes in the latest release of SAS® Life Science Analytics Framework. This table contains a summary of those changes. For a detailed list of added and modified methods, please see the SAS® Life Science Analytics Framework API 2.4 Changes spreadsheet.

Update	Description

Job Execution	- R support
	    o Can now add R programs to a job
	    o Can specify parameters for R programs in a job
	- Checkin locations can be specified with a job. A published job run will check in any files created in the specified locations.
	- Job inputs now support wildcards
	- Get external input and outputs from manifest
	- Referenced metrics has been split into to two different metrics for input and output.
	- Terminology updates
	    o Job inputs and outputs are now referred to as JobPublishSetup and JobPublishCheckin. Specific to published jobs, JobPublishSetup defines repository content to transfer for use by the job, and JobPublishCheckin defines how output is checked in.
	    o Methods and enum values with SAS in the name have been renamed to be more generic to reflect multiple session types.
	    o Methods with 'lst' or 'listing' has been replaced with 'results'.
	- Session has a new field indicating the execution engine – SAS, R, or COMPOSITE (a session for a job that contains both SAS and R programs)
	- New methods have been added to get and save logs and results by engine type (SAS or R). The method with no engine argument assumes a SAS engine.
	- Session contains new fields with counts of log errors and log warnings.
	- "*" is no longer allowed as a valid version to represent the latest version of a file. Use null to specify the latest version.

Update	Description
	- JobService has a new method to do a test published job run. It runs a workspace job as if it was running from the repository but does not check in any outputs.
Implicit Group Membership	As of SAS® Life Science Analytics Framework 5.3, implicit members can now be added as a member of a group and is therefore allowed in the API.
Repository Synchronization Information	The RepositoryService has new methods to get information about file, synchronization, and checked out status of files in the workspace and repository.
Single sign-on	A user's account type can now be updated to use single sign-on authentication with a single sign-on id using the setExternalAuthenticatorByUserId method on the UserService. The single sign-on id is also now available with AccountInfo on the User object. Single sign-on must be configured for the system to make these updates.
Repository Versions	The RepositoryService has new methods that allow you to: • Delete versions • Set limits on major and minor versions • Set default major and minor limits at a container (used to set defaults version limits on files created in that container)
Process Flow Copy	The ProcessFlowService now provides a copy method that allows you to copy a process flow.
Process Flow Task Actions	The TaskService has provided new methods that allow you to perform these actions on a user task in a process flow: • Start • Claim • Assign • Complete
Process Flow Signals	As of SAS® Life Science Analytics Framework 5.3, process flows support the following signal events. • Sign file • Lock file • Unlock file No code changes were required to the API to support these events. If the events are included in process definitions and process flows, they should be automatically included in methods that return these elements.
Process Flow Events	Element.ElementType is an enum that describes the type of element as defined in the process flow definition file. Three new values were added:

Update	Description
	- START - END - TERMINATE_END The START and END event types have always been supported, but they are only surfaced when calling the ProcessDefinitionService getProcessDefinitionElements method which is new in this release. The TERMINATE_END event is a new event type supported in SAS® Life Science Analytics Framework 5.3. If this event is part of a process flow, and that event is reached, the process flow is automatically completed and any uncompleted tasks at the time are completed with the new completion state of TERMINATED.
Relative Path Handling With Job Parameter Values	Jobs can be defined with parameters that have default values. When you submit a job, you can override those default parameter values. Parameter overrides can be provided anywhere a job can be specified, including: - Job submission - Schedule - Process flow (job task) In the prior API release, if you provided a relative path for a file or folder parameter as an override value, the path was getting resolved before the override value was saved or submitted. This was to work around a defect in SAS® Life Science Analytics Framework 5.2 that has been fixed in SAS® Life Science Analytics Framework 5.3. This API release no longer resolves relative paths before the override value is saved or submitted. See SAS Note 65946 for more information.
Session Query	The SessionService has a new search method which allows you to query sessions by criteria which includes: - SessionType - SessionState - SessionEngine (such as SAS or R) - Date started - Date ended - Owner
Process Flow Query	The ProcessFlowService has a new search method which allows you to query process flows by criteria including: - Name - Status - Context - Process definition key - Owner

Update	Description
	• Creation method (such as Manual or TLF) • Last modified
Process Flow Task Query	The TaskService has a new search method which allows you to query process flow user tasks by criteria including: • ElementId • Name • Status • Process flow name • Context • Process definition key • Assignee • Due Date • Priority
Study Updates	The StudyService has new methods to update a study or individual study components by importing SAS data sets. You can also update a study by importing from a Define-XML file.
Process Definition Element Mapping	The ProcessDefinitionService has methods to support mapping element attributes with TLF attributes in order to automatically create a process flow from a TLF. As of, SAS® Life Science Analytics Framework 5.3, TLF is the only item from which process flows can be automatically created.
Study TLF Service	The StudyTlfService was added to get study TLFs, get TLF attribute metadata, and update study TLFs. Updating TLF attribute values allow process flows to be automatically created and set up with values based on attribute mappings and TLF attribute values.
Create auto flow	The new AutoFlowService provides the method to automatically create process flows from an auto flow source object such as a TLF. As of, SAS® Life Science Analytics Framework 5.3, TLF is the only item from which process flows can be automatically created.