

# SPI Implementations

# Table of Contents

SPI modules provide implementations of SPIs defined by the Apache Isis framework itself. As the table below shows, these are typically for cross-cutting concerns such as auditing.

Module	Description	Implements (SPI)	3rd party dependencies
<a href="#">Audit</a>	Persists records of changes (one record per changed property) using an <a href="#">AuditEntry</a> entity.	<a href="#">AuditerService</a>	(none)
<a href="#">Command</a>	Persist action invocations and property edits as <a href="#">CommandJdo</a> entities. This enables profiling and (in conjunction with the <a href="#">Audit</a> module) enhanced auditing.	<a href="#">CommandService</a>	(none)
<a href="#">ErrorReportingJira</a>	Whenever the error page is displayed to the user, automatically log the details in JIRA and provide the ticket details to the end-user.	<a href="#">ErrorReportingService</a>	<a href="#">Jackson</a>
<a href="#">ErrorReportingSlack</a>	Whenever the error page is displayed to the user, automatically post the details to a Slack channel and display a random image. The default implementation shows a random kitten (!), but this can be customised.	<a href="#">ErrorReportingService</a>	<a href="#">Slack module</a>
<a href="#">PublishMQ</a>	Submits an XML representation of member interactions (action invocations and property edits) to an <i>Apache ActiveMQ</i> queue.	<a href="#">PublisherService</a>	<a href="#">ActiveMQ</a>

Module	Description	Implements (SPI)	3rd party dependencies
Security	Provides the ability to manage users, roles, and permissions, by way of an <i>Apache Shiro</i> realm. Users have roles, roles have permissions, and permissions are associated with application features (derived from the Apache Isis metamodel). Permissions themselves can either <i>allow</i> or <i>veto</i> the ability to <i>view</i> or <i>change</i> any application feature.	Authenticator & Authorizer SPIs	Apache Shiro
SessionLogger	Persists session entries representing users logging in or out of the application.	SessionLoggingService	(none)
UserImpersonate	Allow the logged-in user to be switched dynamically, ie to impersonate some other user. Intended for prototyping and demos only.	UserService	ServletAPI module; Security SPI module