Remarks

```
NOTE THAT THIS RELEASE IS INTERNAL (AVAILABLE TO FNZ USERS ONLY)

Release notes with changes since version 2022.2.3.

See the following resources for further information:

FNZ Studio 2023.1 Technical Requirements:
https://community.appway.com/screen/kb/article/system-installation-technical-requirements-
1482807410782

Upgrading from FNZ Studio 2022.2.x to 2023.1.x:
https://community.appway.com/screen/kb/article/system-upgrade-fnz-studio-2022-2-to-2023-
2337811700127

New FNZ Studio 2023.1 installations:
- System Installation 2023.1: https://community.appway.com/screen/kb/article/system-
installation-fnz-studio-2023-1-2338606490592
- System Installation Using Containers 2023.1:
https://community.appway.com/screen/kb/article/system-installation-using-containers-fnz-studio
-2023-2338635793395

Deprecated and removed features in FNZ Studio 2023.1:
https://community.appway.com/screen/kb/article/feature-removal-and-deprecation-with-fnz-studio
-2023-2338096720134

FNZ Studio 2023.1 Known Issues:
https://community.appway.com/screen/kb/article/system-upgrade-fnz-studio-2022-2-to-2023-x-
internal-2337811700127

FNZ Studio 2023.1.1 Product Card:
https://community.appway.com/screen/products/name/fnz-studio-2023-1-internal/version/2023-1-1
```

Appway Platform (Core)

Feature

Area	Importance	Description
Access Control	Medium	It is now possible to define Access Control conditions at Swimlane level (Process Editor). The new 'Sentry' property defines further Access Control conditions (in addition to the conditions defined in the already existing 'Participant' field) by denying or allowing access to the Token. The 'Sentry Evaluation' property defines when such conditions are evaluated: 'Never' or 'At every access'. If Sentries are defined for the Swimlane, the Process Editor displays a specific icon. See documentation for details: https://community.appway.com/screen/kb/article/1482806118517#swimlane
Ad-Hoc Sub-Processes	Low	For Ad-Hoc Sub-Processes, you can now specify whether the visibility of the navigation menu entry corresponding to the Ad-Hoc Sub-Process is determined by the setting defined for its children (default value), or if such entry should always be hidden while keeping the setting defined for its children. This is defined in the 'Container Sentry' field ('Ad-Hoc' tab). See documentation: https://community.appway.com/screen/kb/article/2317711876877#571-container-sentries
Ad-Hoc Sub-Processes	Medium	Process Components included in Ad-Hoc Sub-Processes now display a number (1,2,3..) indicating their order of appearance in navigation. In case of multiple nesting, numbers are hierarchical (1.1.1, 1.1.2...).
Ad-Hoc Sub-Processes	High	The navigation sidebar can be configured to show the validation status of each step in the navigation. This provides users with an overview of any errors and allow them to take action where needed. Validation is configured through two new properties set in the 'Ad-Hoc' tab of Ad -Hoc Sub-Processes: 'Validation Badge Required' and 'Validation Badge'. To allow for Validation Badge configuration, the following changes have been made (for Script Function use cases):

		- Two properties have been added to the 'Process:AdHocNavigationItem' DataClass: 'hasBeenVisited' (boolean, it is true if the Navigation Item has been already visited in the current Process); 'validationBadgeState' (property of type 'Process:AdHocValidationBadgeState', it maps the validation status for the current item with the values OK, NOT_OK, or NO_BADGE). - The ScriptFunction 'Process:GetAdHocNavigationStructure' has been modified to return the new two properties for each Navigation Item in the structure. See documentation for full details: - Validation badge configuration: https://community.appway.com/screen/kb/article/2317711876877#58-navigation-validation - Script Functions: https://community.appway.com/screen/kb/article/1641896132117
Advanced Studio Permissions	Medium	The following Advanced Studio Permissions have been added: - 'ClusterTools': It allows using Cluster Tools to inspect the Hazelcast cluster. It requires the ClusterTools Extension. - 'Garbage Collection': It manages Garbage Collection requests to check memory usage and free up memory from the 'Overview' and 'Memory Usage Statistics' submodules in FNZ Studio Composition. - 'LDAP': It allows viewing and managing LDAP configurations. It requires the LdapSyncAdapter Extension. Moreover, the following Advanced Studio Permissions have been changed: - The 'Data Source' Permission now includes a 'Read-Only Access' level. This new Permission level allows users to view Data Sources. - The 'Licenses' Permission now includes a 'Read-Only Access' level. This new Permission level allows users to download Licensing Reports, view License Files, and see the 'View Licensing History', 'Assigned Licenses', and 'Licensing Assignment Statistics' FNZ Studio Composition submodules. See documentation for details: https://community.appway.com/screen/kb/article/1695975642783
Custom Tags	Medium	Custom Tags are a configuration option available for Controls in the Data Logic Editor and for App Task Actions in the Process Editor. They allow setting tags on Controls and Actions to allow the customization of the rendering (structure and styling) of the corresponding elements in the UI.
Data Logic Editor	Low	The Data Logic Editor now supports the following keyboard interactions: - The 'Variables' tab now supports multiple selection and copy-paste (through the context menu and CTRL-C /CTRL-V shortcuts). - The 'Controls', 'Data Rules' and 'Variables' tabs support deletion (through the delete and backspace keyboard keys). See documentation: https://community.appway.com/screen/kb/article/1739928404187#7-shortcut-keys-in-the-data-logic-editor
Data Logic Editor	Medium	The new 'Image' and 'Video' Controls are now available in the Data Logic Editor. They allow adding images and videos in the data-driven UI. Note that these features are enabled by a configuration property. See documentation for details: https://community.appway.com/screen/kb/article/1739928404187#4-controls-tab
Data Logic Editor	Low	The new setting 'Information Label', available for Data Controls, allows selecting a Label Business Object to provide additional information for the end user on how to fill a certain field (e.g., a tooltip). See documentation for details: https://community.appway.com/screen/kb/article/1739928404187#311-selecting-a-label-for-controls-and-data-rules
Extensions	High	A new validation mechanism prevents uploading extensions with invalid or duplicated file names. The file must be named `OfficialExtensionName.jar` (e.g., `StatisticsCollector.jar`). Any other custom characters or digits are not accepted (e.g., `StatisticsCollector-1.2.3-2023.1.jar`; `StatsCollector.jar`; `Statistics-Collector.jar`; `StatisticsCollector-dev.jar`) and an 'Upload failed' error may be triggered. This change affects both the system upgrade to version 2023.1, as well as the upload of

		extensions from FNZ Studio Composition ('System Configuration' > 'Extensions'). See documentation for full details: - System Upgrade: https://community.appway.com/screen/kb/article/2337811700127 - Managing Extensions: https://community.appway.com/screen/kb/article/1482802413870
Extensions	Medium	Added a mechanism that allows extensions to report errors and warnings caused by issues in the extension configuration properties. Errors and/or warnings are reported in the 'Extension Configuration' System Health Sensor. See documentation for details: - Managing Extensions: https://community.appway.com/screen/kb/article/1482802413870 - System Health: https://community.appway.com/screen/kb/article/1482807177758
Investment Selection Tool	High	The Investment Selection Tool (IST) in a new FNZ Studio feature supporting out-of-the-box advisor experience. This feature is used in multiple activities, from the creation of a model portfolio to customer onboarding, or to get a quote for buying or selling orders. To configure the Investment Selection Tool, developers need the following, newly-created, items: - An Investment Behavior (Data Class Editor) - An Eligible Investment Data Rule (Data Logic Editor) Moreover, the feature needs the following, newly-created extensions (see Extension Release Notes): - OpenPlatformConnector Extension - InvestmentSelectionTool Extension Note that this feature is currently available only together with FNZ OneX Platform. See documentation for details: https://community.appway.com/screen/kb/article/2338506621953
Script Language	Low	The new Script Function 'System:GetCsrfToken()' can be used to retrieve the current CSRF token.
Security	Medium	A malware detection service has been introduced to scan uploaded files to the Blob Storage. The malware detection service uses various third-party scan engines. The first scan engine implemented is delivered in the ClamAVConnector Extension (see Extension Release Notes).
Security	Medium	An antivirus scan service is now integrated in all file upload components
Split-Brain	Medium	A Split-Brain protection mechanism for clusters of static size has been introduced. If a Split-Brain condition is detected, Platform activities are suspended, thus preserving the state of the distributed maps. Two protection functions are available: - 'MinSize' (related configuration property) - 'ExpectedSize' To use and configure these functions, two new configuration properties have been created: - 'nm.cluster.splitbrain.protection.function' ('false' by default) - 'nm.cluster.splitbrain.protection.min.cluster.size' See documentation for details: https://community.appway.com/screen/kb/article/2338606490592#28-split-brain-protection

Change

Area	Importance	Description
3rd Party Library	Low	The third-party Java libraries Commons JXPath, Camel JXPath, Rome API, JDOM, and Jaxen have been removed from FNZ Studio. Note that this implies the removal of RSS features (see related Release Note). See documentation: https://community.appway.com/screen/kb/article/2337811700127#library-updates-in-fnz-studio-202311
3rd Party Library	Low	The third-party Java libraries of the Jackson framework have been upgrade from version 2.12.6 to version 2.14.1.
Advanced Studio	Medium	The following changes have taken place:

Permissions		- The 'Developer Toolbar' and 'Workspace Label' Permissions have been removed. The Developer Toolbar (and its Label manager) is now accessible only to users with a Studio Permission. - The new 'Labels' Permission ('Solution Design') has been created to replace the 'Workspace Label' Permission and allows users to view, create and translate Label Business Objects. Note that existing users with 'Workspace Label' Permission in previous Appway/FNZ Studio versions are granted the new 'Labels' Permission automatically (see System Upgrade). - Read-only access to Theme Packages in App Tasks, which was previously governed by the 'Developer Toolbar' Permission, is now granted with 'Studio' Permission. Note that existing users who accessed Theme Packages in ready-only mode through the 'Developer Toolbar' Permission in previous Appway/FNZ Studio versions need to be reassigned to the 'Studio' Permission (see System Upgrade). Full access with edit rights to Theme Packages in the Theme Editor still requires the Packages (Full-Access level) Permission. See documentation for full details: - Advanced Permissions: https://community.appway.com/screen/kb/article/1695975642783 - System Upgrade FNZ Studio 2022.2 to 2023.1: https://community.appway.com/screen/kb/article/2337811700127 - Theme Editor: https://community.appway.com/screen/kb/article/2218909162075#9-theming-theme-editor
Business Object Library	High	The loading time of the Business Object Library has been improved. Moreover, when opening a Package, the Business Object Library is no longer filtered by 'Process' Business Object, thus providing an overview of all Business Objects.
Business Objects	Low	When opening a Package, all Business Object Types are now shown by default, thus providing the developer with an overview of all the objects contained in the Package.
Configuration	Low	The configuration property 'nm.workspace.default.portal' can be used to control whether FNZ Studio auto-generates the default Portal Process and Screen during startup. The default value is 'true'. If set to 'false', FNZ Studio skips this startup step.
Data Sources	Low	Fixed an issue that prevented the creation of a new Data Source when no password was set.
Deprecation	Low	The 'Pdf:Merge' Script Function has been deprecated. This deprecation affects the Functions Extension (see Extension Release Notes). See documentation for details and recommended actions: https://community.appway.com/screen/kb/article/2023-2338096720134
Deprecation	Medium	The Fast Track feature in FNZ Studio is now disabled by default (the 'nm.fasttrack.enabled' property is set to false). See documentation for full details: - Deprecation: https://community.appway.com/screen/kb/article/2023-2338096720134 - Feature Overview: https://community.appway.com/screen/kb/article/2321608166635#71-fast-track - System Upgrade: https://community.appway.com/screen/kb/article/2337811700127#fast-track-disabled-by-default
Deprecation	Low	The two following configuration properties have been deprecated: - 'nm.errorpage.screen' - 'nm.close.screen' See documentation for full details: https://community.appway.com/screen/kb/article/2338096720134
Deprecation	Medium	The `CONTEXT()` Script Function has been deprecated as it was giving access to internal Java APIs. See documentation: https://community.appway.com/screen/kb/article/2338096720134
Error Pages	Low	The default Business Error Page available in the Base Package ('aw.errorpage.ErrorPage' Screen) has been updated to align to the new FNZ Studio branding. When upgrading to version 2023.1, the error page will be automatically upgraded to the re-branded version only if the 'aw.errorpage.ErrorPage' Screen has not been modified in your Solution. Moreover, Runtime Error Pages have been updated to align to FNZ Studio branding (these changes have no impacts when upgrading your Solution).

		See documentation for details: https://community.appway.com/screen/kb/article/2337811700127#business-error-screen-re-branding
HTTP Compression	Medium	The new configuration property 'nm.http.compression.enabled' (default value: 'true') can be used to enable or disable compression of HTTP responses. Changing this configuration property has an immediate effect and does not require restarting FNZ Studio.
Java Execution Control	High	As part of a project to remove dependencies from Solutions on Java code, direct and indirect usages of Java in the Script Language are blocked and will throw exceptions at runtime. Existing Solutions, which cannot easily be cleaned from Java usage in the Script Language, can ask for a license flag which allows to continue using Java in the Script Language. The license flag is called `nm.license.exprlang.java.allowUnlisted` and its default value is `false`. See also System Upgrade documentation: https://community.appway.com/screen/kb/article/2337811700127#usage-of-java-in-the-script-language-is-blocked
Master Password	Medium	Manually entering a master password during startup is no longer possible. A master password can still be provided as an environment variable, a Java system property, or a web app context parameter. See documentation: https://community.appway.com/screen/kb/article/1482802752090
Packages	Low	The icon marking Sealed Packages has been changed and is used for all types of Sealed Packages, with the exception of Platform Packages, which now display a different icon. See documentation: https://community.appway.com/screen/kb/article/1496136140789
Password Hashing	Low	The default configuration for the Argon2id password hashing algorithm has been changed to consume only 8 MB of memory instead of 16 MB. This should reduce the time for a single password hash operation by ~ 50%, making it less likely to log warnings about long-running password hash operations. In addition, the threshold for logging a warning message has been increased from 0.5 seconds to 1 second.
Process Editor	Medium	The 'Property' panel of the Process Editor has been revamped to align the user experience with other editors, such as Data Class and Data Logic: - It is now possible to create a Label Business Object from the Business Object selector directly. - The 'Variable Assignment' tab has been removed. Variables can now be assigned by expanding the section next to each Business Object that requires an assignment.
Removal	Medium	All features related to RSS Feeds in FNZ Studio Composition (commits and discussion messages) previously accessible through the Discussion/Activity Log tab, have been removed. No replacement is in place. The user preference 'FeedServlet.auth.token' is no longer used and can be deleted. See documentation for details: https://community.appway.com/screen/kb/article/2338096720134#features-removed-in-fnz-studio-20231
Removal	Medium	Script Language: The `Context` Primitive Type has been removed. For existing Solutions, it continues to exist as a Business Object in the Base Package, but it is no longer created for new Solutions. See documentation: https://community.appway.com/screen/kb/article/2338096720134
Security	Low	For security reasons, FNZ Studio UIs and log messages no longer show complete HTTP session IDs. Instead, only the first 12 characters and the last 4 characters are shown, all other characters are replaced by three dots.
Security	Low	The third-party Java library Apache Commons Net has been removed from FNZ Studio 2023.1.1. If this library is required in a custom extension, it needs to be embedded into the extension itself.
User Sessions	Low	User Session objects are no longer tied to HTTP Sessions; a User Session can be collected even if there is no HTTP Session (e.g. API calls).

Bugfix

Area	Importance	Description
Configuration	Low	Fixed an issue where configuration properties from a license file were loaded even if the

		license file signature was not valid.
Interactive Script Editor	Low	Fixed an issue in the Interactive Script Editor (ISE) where the last inputted code was not retained after closing and reopening the editor. This issue is fixed only in Firefox.
Resource Business Objects	Low	Fixed an issue in the Resource Business Object Editor which caused the 'Edit Resource' modal window (displayed when clicking on 'Edit File') to appear smaller when editing a Resource of type 'text'.
Script Language	Low	Fixed the access to properties of Java Objects in the Script Language when the setter method was not available.
Serialization	High	Native serialization is now prevented in Processes for loop counter variables of all types ('For', 'For Each', 'While').
Trackpoints	High	Fixed an issue where validation on Trackpoints ('Validation' and 'Dependencies' sections in the Process Editor) did not work correctly. As a consequence of this fix, new validation errors may become visible after you upgrade to FNZ Studio 2023.1.1.

Appway Extensions

Feature

Area	Importance	Description
Extension	Medium	AppTask Extension 2023.1.1: The AppTask Extension is used in Application Business Components (ABCs). See separate Release Notes: https://community.appway.com/screen/support/news/2339309795856
Extension	Medium	AppTaskAPI Extension 2023.1.1: The AppTaskAPI Extension is used in Application Business Components (ABCs). See separate Release Notes: https://community.appway.com/screen/support/news/2339309795856
Extension	Low	AzureServiceBusConnector Extension 2.0.0: The AzureServiceBusConnector Extension now uses KeyService to store sensitive properties.
Extension	Medium	ClamAVConnector Extension 1.0.0: The ClamAVConnector Extension provides a third-party scan engine for malware detection in files uploaded to the Blob Storage.
Extension	Medium	ClusterTools Extension 12.0.0: The new 'ClusterTools' Advanced Studio Permissions allows using Cluster Tools to inspect the Hazelcast cluster.
Extension	Low	DeafultIcons Extension 4.4.0: Added new icons to the DeafultIcons Extension: 'circlearrowclose', 'circlearrowopen', 'fitscreen', 'pendingstatus', 'resetzoom', 'sidebar', and 'tasklist.
Extension	High	Functions Extension 10.1.1: - Feature. Security: The new function 'User:CheckPassword' can be used to check the credentials (username and password) of a local user. - Deprecation: The 'Pdf:Merge' Script Function has been deprecated. - Bugfix: Ad-Hoc Script Functions in Screens: Fixed an issue where Functions `Process:ExecuteAdHocAction` and `Process:GoToAdHocNavigationItem` resulted in an error when executed in a Screen Component Script Action with the option 'Ignore Errors' selected, and when the related Screen had validation errors. See documentation: - Script Functions: https://community.appway.com/screen/kb/article/1641896132117 - Deprecation: https://community.appway.com/screen/kb/article/2023-2338096720134

Extension	Medium	InvestmentSelectionTool Extension 2023.1.0: The InvestmentSelectionTool Extension is an ingredient of the Investment Selection Tool (IST) feature. See IST Release Notes.
Extension	Medium	LdapSyncAdapter Extension 8.1.0: The new 'LDAP' Advanced Studio Permission allows viewing and managing LDAP configurations.
Extension	Medium	OpenApi Extension 2.0.0: - Feature: Created FNZ Studio wizard to import OpenAPI specification files and create the required Data Classes. - Feature: Added the 'OpenApi:GenerateDataClasses' Script Function. - Change: Removed Package name from schema name in the OpenAPI Business Object Exporter.
Extension	Medium	OpenPlatformConnector Extension 1.0.1: The new OpenPlatformConnector Extension implements a client for the FNZ Open Platform API. The extension is currently an ingredient of the Investment Selection Tool (IST) (see IST Release Notes). See documentation: https://community.appway.com/screen/kb/article/2339214559607

Change

Area	Importance	Description
Extension	High	DeploymentExtension 15.0.0: A new validation mechanism prevents uploading extensions with invalid or duplicated file names. The file must be named `OfficialExtensionName.jar` (e.g., `StatisticsCollector.jar`). Any other custom characters or digits are not accepted (e.g., `StatisticsCollector-1.2.3-2023.1.jar`; `StatsCollector.jar`; `Statistics-Collector.jar`; `StatisticsCollector-dev.jar`) and an 'Upload failed' error may be triggered. This change may affect you if you use the ImportExtension() function provided by the Deployment Extension to import extensions into the current FNZ Studio installation. See documentation for details: https://community.appway.com/screen/kb/article/2337811700127
Extension	Low	MemoryAnalysis Extension 9.0.1: For security reasons, FNZ Studio UIs and log messages no longer show complete HTTP session IDs. Instead, only the first 12 characters and the last 4 characters are shown, all other characters are replaced by three dots.
Extension	Low	WebServices Extension 4.0.2: Default mapping is no longer applied for the TranslateFrom() Script Function. See documentation: https://community.appway.com/screen/kb/article/1482807618060#3472-translatefrom

Bugfix

Area	Importance	Description
Extension	Low	BAM Extension 7.0.0: Fixed an issue that caused a 'Null Pointer Exception' error to be reported in the 'Measure & Analyze' module UI in FNZ Studio when a missing Process Business Object was used.