Remarks

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Release notes with changes since version 8.1.1.

For upgrade information when upgrading to Appway 9.0 from Appway 8.1.x, see the 'System
Upgrade: 8.1 to 9.x' article:
https://community.appway.com/screen/kb/article/system-upgrade-8-1-to-9-x-1747176546847

For new Appway 9 installations, see the Installation Guide:
https://community.appway.com/screen/kb/article/system-installation-appway-9-1736030944029

For information on Known Issues in Appway 9, see:
https://community.appway.com/screen/kb/article/appway-9-known-issues-1756745073316

For documentation of new and existing features, see the Appway Knowledge Base at:
https://community.appway.com/screen/kb

For an overview of the documentation of new Appway 9 features, see:
https://community.appway.com/screen/kb/article/system-upgrade-8-1-to-9-x-1747176546847#34-
adopting-new-features

For information on deprecated and removed features in Appway 9, see:
https://community.appway.com/screen/kb/article/feature-removal-and-deprecation-with-appway-9-0
-1710706195381

For information on the Appway product lifecycle, see:
https://community.appway.com/screen/kb/article/appway-releases-product-lifecycle-and-end-of-
support-1753664569425
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Appway Platform (Core)

Feature

Area	Importance	Description
Business Object References	High	Business Object References are dedicated types allowing you to assign a Business Object using a variable, instead of referencing a Business Object ID directly (as a String). This approach ensures Appway's dependency tracking framework functions correctly. Business Object References are supported for the following Business Objects: Catalogs, Packages, Processes, Screens, Resources, Rules, and Rule Sets Screen Components that support Business Object References are: HTML Head Link, HTML Head Script, Image, Include, Link, Link Container, Process Include, Raw Code, Resource Include, Screen Include, Screen Link, and Template Workflow Image Screen Actions that support Business Object References are: Display Process Action, Display Resource Action, Display Screen Action, and Display Sub-Process Action Process Components that support Business Object References are: Evaluate Rule Set Task, Evaluate Rule Task, Screen Task, and Sub-Process Functions that support Business Object References are: CatalogueDelete, CatalogueUpdate, EVALUATERULE, EVALUATERULESET, GetSubWorkflowTokenId, LIST, ProcessElementId, ProcessStartURL, READTEXTRESOURCE, Record, RECORDS, RESOURCEURL, SCREENURL, StartProcess, StartSubProcess, and WRITETEXTRESOURCE
Cluster	Low	Introduced a general mechanism to handle exceptions when distributed tasks are not ready to be executed.
Data Logic	High	A Data Logic Screen is a new way of referencing a Data Logic Business Object – directly in a Screen Business Object. This provides an alternative approach to referencing a Data Logic in a Data Task in a Process. This new Data Logic Screen approach allows modelling Screens as a flexible combination of Interaction Channels (which provide an auto-generated UI), without needing to explicitly model them in the Process. You can also control different parts of a Screen by different Data Logic Business Objects by using Screen Includes and combine Interaction Channels and standard Screen Components on the same Screen.

Data Logic	Low	Added the possibility to specify Control Layer bindings using Script expressions.
Data Logic	Low	The new variable $instance is provided for the evaluation of Correctness rules. This variable can be used to access the instance of the Data Class to which the rule is applied.
Labels	High	The new Overriding Translations functionality (available at Solution Design >Translations) provides an alternative to changing translations directly in Label Business Objects. Using this new approach is particularly beneficial when parts of your Solution are composed of sealed Packages, e.g. Business Components delivered by Appway, where you cannot access the Label to change it. Using Overriding Translations also simplifies the process of upgrading Packages, making it easier to retain custom translations.
Packages	Low	Platform Packages are a new type of Package. Platform Packages are automatically installed when starting Appway, they are sealed (cannot be modified), and are not shown in the Package overview with other Packages. Currently, Platform Packages hold the Data Classes used to enable the Business Object Reference functionality.
Packages	Low	The Package Validation functionality available on the Maintenance tab of a Package now allows you to select the version to validate: either the Head version (default) or the Latest Committed version of all Business Objects contained in the Package.
Screen Actions and Events	Low	It is now possible to define custom coordinates on a container to which the Set Layer action is applied.
Screen Editor	Low	The "Start Screen" button has been added to the Screen editor, allowing you to start a Screen directly from the Screen editor instead of having to return to the Screen Business Object in the Library.
Screen Editor	Low	When the Style Package property is defined for a View component, a 'P' is added next to the component name in the Composition area.
Startup	Low	Starting with Appway 9, a dependency-based startup mechanism for all building blocks of the Appway Platform is used. This startup mechanism is referred to as 'bricks-based startup'. Before Appway 9, only services were started using a dependency-based startup.
Style Business Object	Medium	To enable more flexible styling of Solutions, it is now possible to assign multiple Style Business Objects to a Screen Component and define conditions specifying when to apply which style (using Appway Script).
Value Store Eviction	Medium	Non-persisted Process Instances and Value Stores (e.g. the Portal Process) are no longer evicted and are available until they are deleted. As in previous versions, non-persisted Process Instances are automatically deleted when the session they are attached to expires or is invalidated. If you have enabled Value Store eviction, see the Upgrade Guide for more information on the new recommended settings: https://community.appway.com/screen/kb/article/system-upgrade-8-1-to-9-x-1747176546847#331-value-store-eviction Note: The configuration property nm.cluster.eviction.valuestores.maxsize was removed.
Web API Editor	Low	Added the Export button allowing you to export the Web API Business Object as an AWEXPORT file directly from the editor.

Change

Area	Importance	Description
3rd Party Library	Low	The Apache Commons Betwixt library has been removed from Appway.
3rd Party Library	Low	Upgraded the following libraries: - Apache Commons DBCP from version 1.4 to 2.5 - Apache Commons Pool from version 1.6 to 2.6.0 - Apache Commons FileUpload from version 1.3.3 to 1.4
Data Logic	Medium	The Case Template Business Object was renamed to Data Logic. Renaming was also applied to the following related items: - Renamed the 'End Case Action' Control to 'End Data Task Action'. - Renamed the 'Case' Role to 'Data Task' Role. - Renamed the 'Case' Task to 'Data' Task. - Renamed the dynamic group generated for a Data Task from 'CaseTask_' to 'DataTask_' and the related cleanup job from 'Case Task Groups Cleanup' to 'Data Task Groups Cleanup'. - Renamed the Case Primitive Types as follows: CaseControl to DataLogicControl, CaseConsistency to DataLogicConsistency, CaseCorrectness to DataLogicCorrectness, CaseCollaboration to DataLogicCollaboration, and CaseWorkitem to DataTaskWorkitem.

		- Renamed the filter WorkItemMyCasesFilter to WorkItemMyDataTasksFilter (available with the Inbox extension). - Renamed the following functions: EndCaseTask to EndDataTask, GetCaseContext to GetDataContext, RemoveCaseCollectionElement to RemoveDataContextCollectionElement, and SetCasePrimitiveValue to SetDataContextPrimitiveValue (available with the Functions extension).
Dropdown List	Medium	The behavior of the Dropdown List Screen Component has been improved to allow better keyboard navigation in screens. When the focus moves to the Dropdown List, the popup no longer opens directly, but opens only when a search string is entered, or the arrow keys are used.
Hazelcast	Low	Since Appway 7.2, Hazelcast ignores the group password (if it was configured) when joining a cluster. This no longer working feature has now been removed. The configuration property nm.cluster.startup.group.password is no longer needed and should be removed in Appway 9. The group password configuration in the hazelcast.xml file should be removed as well, see the Upgrade Guide: https://community.appway.com/screen/kb/article/system-upgrade-8-1-to-9-x-1747176546847#26-verify-hazelcastxml.
Hazelcast	Low	Upgraded Hazelcast from v3.8.7 to v3.11.2.
Licensing	Low	When changing the License File or at system startup, assigned licenses with Package IDs that are not present in the current License File are unbound, otherwise they are kept.
Link Container	Low	The Style Business Object for the Link Container now exposes the Focused state, allowing you to style the appearance of the component when it is focused.
Packages	Low	When creating a new Package, Appway now checks whether the specified Package ID is on a list of "reserved names". This protects you from running into ID conflicts with future Packages deployed by Appway. The list of reserved names contains IDs of existing and planned Appway Packages (for example 'DesignSystem'), names of Appway Extensions (for example 'WebServices'), types of Appway Business Objects (for example 'Process'), and names of existing and potential future Function Namespaces (for example 'Math'). If you enter such an ID in the "Create Package" wizard, an error message is displayed. Example: "Package ID 'WebServices' is reserved for use by Appway." In addition, Package Validation has been improved to generate a validation warning if an already existing non-Appway Package uses a reserved ID.
Packages	Low	When creating a new version of a Package, it is no longer possible to provide an arbitrary string as a version number. Instead, a semantic versioning pattern in the form of Major.Minor.Patch is enforced. Additional details can be provided in a suffix, e.g. '-beta'. Examples of valid version numbers: 1.1.0, 1.2.1-beta, 2.6.5-rc.
Process Engine	Low	When starting a new Process, parameter assignments are now cloned by default. If cloning is not possible, e.g. because the parameter assignments contain non-Serializable values, a WorkspaceException is thrown.
Security	Low	A random directory name is now generated when creating a temporary directory to store an uploaded file. This guarantees that the path to an uploaded file cannot be guessed based on paths used for previous or following file uploads. This change was also implemented for the Component extension 9.0.0 and higher, and the NativeAppServices extension 3.2.1 and higher.
Security	Medium	The default web application configuration for Appway (web.xml) has been changed to ensure that the application server enforces cookie-based session tracking instead of URL-based session tracking. In addition, session cookies now have the "HttpOnly" flag set to prevent client-side JavaScript code from accessing the session ID.
Servlet	Low	A dispatching mechanism for Servlets was introduced with Appway 9. This means that Appway Servlets are no longer registered using the Servlet API, but that there is a single Servlet Filter instead, which dispatches to the correct Appway Servlets internally.
Style Business Object	Low	When selecting a Style Business Object in the list of Business Objects in the Library, the Screen Component type the Style Business Object relates to is now indicated in the Properties panel.

Bugfix

Area	Importance	Description
Cluster Storage	Low	When a timeout occurs while storing data to Cluster Storage, any running operations are now cancelled. This avoids putting unnecessary load on the system.
Data Class Editor	Low	Improved the validation of duplicated properties in the hierarchy of Data Classes.

Data Engine	Low	Fixed an issue that caused the Data Engine to fail when processing Data Properties or variables that contain a null collection.
Data Logic	Low	Fixed a known issue which prevented the application of Correctness rules on controls located in a Conditional Cast control.
Data Logic	Low	Fixed a known issue which prevented the application of Inconsistency rules when the binding of an affected field was based on a locally defined field in a Conditional Cast control.
Data Task	Low	Fixed an issue that prevented the correct cleanup of scopes when a Process Token was moved away from a Data Task.
Error Page	Low	Fixed missing dependencies of the default Screen `aw.errorpage.ErrorPage`.
File Upload (Legacy)	Low	Fixed an issue that prevented Validation messages from being displayed on File Upload (Legacy) Screen Components.
Licensing	Low	Changing the license assignment rules on one node now triggers a reload of the license assignment rules on all other nodes. This ensures that all nodes see the same license assignment rules.
Licensing	Low	The System KPIs which are retrieved from the System Report are now always included in the License Report.
Platform	Medium	Fixed a class loading issue in WebSphere Liberty which caused a ClassCastException and other errors when storing or loading Business Objects.
Screen Editor	Low	Fixed an issue where 'S' was added next to the component name in the Composition Area for the Info Table and List Screen Components, despite a Style Business Object being assigned ('S' indicates the use of legacy styles).
Text Field	Low	Fixed an issue occurring for Text Field Screen Components with Type=Number, where numbers with more than three digits were not preserved when submitting.

Appway Extensions

Feature

Area	Importance	Description
Extension	Medium	AWSHazelcastDiscovery Extension 1.0.0: The new AWSHazelcastDiscovery extension provides cloud-native Cluster node discovery for Appway instances deployed on Amazon Web Services (AWS), simplifying the definition of the nodes that should join the Cluster.
Extension	High	AWSHazelcastStore Extension 1.0.1: The new AWSHazelcastStore extension enables Appway to use the AWS S3 service as Cluster Storage. S3 is a service provided by Amazon that allows you to store and manage data in the Amazon cloud.
Extension	Medium	AzureHazelcastDiscovery Extension 1.0.0: The new AzureHazelcastDiscovery extension provides cloud-native Cluster node discovery for Appway instances deployed on MS Azure, simplifying the definition of the nodes that should join the Cluster.
Extension	High	AzureHazelcastStore Extension 1.0.1: The new AzureHazelcastStore extension enables Appway to use Azure Block Blobs as Cluster Storage. Block Blobs are a scalable object storage available in the MS Azure cloud.
Extension	High	BusinessDataStorage Extension 1.1.0: The new BusinessDataStorage extension allows persisting and retrieving Business Data gathered through Appway Processes to a relational Database. The BusinessDataStorage extension offers improved performance, stability, and security with respect to the DataStore extension, as well as an enhanced user experience. It provides a thorough user interface in Appway Studio that allows you to select, synchronize, and configure Data Classes, as well as check the database content.

Extension	Low	CassandraHazelcastStore Extension 25.0.2: - Feature: Missing Cassandra tables are now created automatically.
Extension	Medium	Component Extension 9.0.0: File Chooser --- - Feature: The File Chooser 'Style' Business Object now displays the 'Drag' state and some related styling properties. These allow customizing the way the 'File Chooser' Screen Component is visually highlighted when dragging some content to upload into the screen. - Bugfix: Fixed an issue where the uploads in progress and the 'Progress Popup (virtual)' Screen Component were not removed even after the 'File Chooser' Screen Component had been destroyed. Info Table and Info Table Row: --- - Change: It is now possible to set the 'Width', 'Minimum width' and 'Maximum width' properties for the 'Info Table Cell' Screen Component. Consider that these properties are ignored if the parent Info Table is displayed in compact view. - Bugfix: An invalid value for the 'Highlighted' property is now only taken into account when the 'Info Table Row' Screen Component is of type 'Body', meaning that it no longer causes an Error box in the Workspace for the other types of Info Table Rows. Style and Style Value Business Objects --- - Change: The default values of the 'Shadow:Focused' property have been updated for the following 'Style' Business Objects: Button; Button-primary; Button-secondary; Button-navigation; Button-navigationToParent; Button-navigationToParentInverted; Link. Moreover, the default value of the 'Inner Spacing' property has been updated for the Button -primary 'Style' Business Object. These new default values only take effect for new installations. If you are upgrading to 9 from a previous installation, the default values available when you first installed are persisted. Finally, the default value for the 'Icon' property has been updated for the following 'Style' Business Objects: Dropdown List; DropdownList-small. For this specific case, auto-migration is in place, meaning that the new default value replaces the previous default value both in new and upgraded installations. However, if you applied a custom value, this is persisted in your upgraded installation. See the Upgrade Guide for more information: https://community.appway.com/screen/kb/article/system-upgrade-8-1-to-9-x-1747176546847#332-new-default-values-in-style-and-style-value-business-objects - Bugfix: Fixed an issue where the properties of custom 'Style' Business Objects might unexpectedly be overwritten by the system. Workspace: Notification Alert --- - Change: It is now possible to set the 'Show Type' property for the 'Notification Alert' Screen Component to control whether to show or hide the notification type in the alert. Multiple Selection Field --- - Change: The 'Select All' button has been removed from the component. Adaptive Flow Layout Group --- - Bugfix: Fixed an issue where the title and the content of an 'Adaptive Flow Layout Group' Screen Component were misaligned when resizing the screen. This issue only occurred when a 'Style' Business Object was applied to the component. Form and Form Channel [Legacy] --- - Bugfix: Fixed an issue in the 'Form' and 'Form Channel [Legacy]' Screen Components that caused the checkbox multiple selection control to send an incorrect value to the Data Logic Task when all checkboxes were deselected. - Bugfix: Fixed an issue in the 'Form' and 'Form Channel [Legacy]' Screen Components where the selected option of the dropdown list displayed in the popup was not styled correctly on a compact-view screen.

		- Bugfix: Fixed issue that caused the 'Form' Screen Component to fail when rendering Data Properties or variables that contain a null collection. Show As Popup Action --- - Bugfix: A 'Layout Container' Screen Component displayed by means of a 'Show as Popup' Action and containing an 'Info Table', 'Navigation Menu', 'Adaptive Tab' or 'Phase Chevron' component now expands correctly to occupy the entire space available on the screen, instead of squeezing the content to the minimum width.
Extension	Medium	Functions Extension 5.0.3: - Feature: Added the following functions to replace deprecated functions: User:Get, User:CurrentUserGetId, User:CurrentUserListGroupIds, User:CurrentUserGetFirstName, User:CurrentUserGetLastName, User:CurrentUserIsInRole, User:CurrentUserIsInGroup, and User:ListGroupIds. For more information on deprecations, see: https://community.appway.com/screen/kb/article/feature-removal-and-deprecation-with-appway-9-0-1710706195381#23-script-functions - Feature: Added the following functions for creating Business Object References: Process:NewReference, Screen:NewReference, Catalog:NewReference, Rule:NewReference, RuleSet:NewReference, Resource:NewReference, and Package:NewReference. - Change: Adapted the following functions to accept Business Object References as parameters: CatalogueUpdate, CatalogueDelete, RECORD, and GetSubWorkflowTokenId. - Change: Renamed the following functions for consistency with the renaming of the Case Template Business Object to Data Logic: EndCaseTask to EndDataTask, GetCaseContext to GetDataContext, RemoveCaseCollectionElement to RemoveDataContextCollectionElement, and SetCasePrimitiveValue to SetDataContextPrimitiveValue. - Bugfix: The ExecuteDistributed function now correctly searches for variable definitions in the parent scope.
Extension	Medium	Functions Extension 5.0.4: - Feature: Created a streamline tool to migrate deprecated functions to new ones in the selected Package.
Extension	Medium	KubernetesHazelcastDiscovery Extension 1.0.0: The new KubernetesHazelcastDiscovery extension provides automatic Cluster node discovery for Appway instances deployed on Kubernetes, simplifying the definition of the nodes that should join the Cluster.
Extension	Low	ProcessUsageTracker Extension 2.0.2: The new ProcessUsageTracker extension collects usage statistics (started, updated, stopped) for top-level Processes in Appway Solutions. These statistics can be accessed in the license report. This is a mandatory extension and must be installed on every Appway instance.
Extension	Low	RelationalDbHazelcastStore Extension 15.0.0: - Change: Remaining operations are now cancelled when the storage threads are interrupted.
Extension	Low	SystemHealthSensors Extension 4.0.1: - Feature: The new Entry Storage sensor checks that entry storage persistence functions correctly. - Feature: The new Packages sensor checks the IDs of the Packages available on your installation to ensure that no Package IDs reserved by Appway are being used. - Change: The log level of the DataHomeCleanerJob logger is now set to INFO to ensure that file deletion is logged. - Change: The Cluster Storage sensor was moved to the System Health Sensors extension.

Change

Area	Importance	Description

Extension	Medium	Deployment Extension 11.0.1: The ExportPackages function no longer exports the content of Platform Packages. For information on Platform Packages, see: https://community.appway.com/screen/kb/article/packages-1496136140789#83-platform-packages.
Extension	Low	DrawingAreaComponent Extension 1.0.0: - Change: This new extension fully replaces the Signature extension, which is no longer available with Appway 9. See the 'System Upgrade: 8.1 to 9.x' article for details: https://community.appway.com/screen/kb/article/system-upgrade-8-1-to-9-x-1747176546847#242-signature-extension
Extension	Low	Inbox Extension 2.1.0: - Change: Renamed WorkItemMyCasesFilter to WorkItemMyDataTasksFilter.
Extension	Low	ScreenPdfRenderKit Extension 4.0.0: - Change: The Screen Audit Variables health sensor now runs every 10 minutes instead of once an hour. - Bugfix: To ensure platform stability, the Screen Audit Variables health sensor checks a maximum of 100 Value Stores when it runs.
Extension	Low	Signature Extension: The Signature extension is no longer available with Appway 9.0. If your Solution uses this extension, use the DrawingAreaComponent extension with Appway 9.0 instead. This extension provides the same functionality as the Signature extension. This change requires no manual migration steps. See the Upgrade Guide for more information: https://community.appway.com/screen/kb/article/system-upgrade-8-1-to-9-x-1747176546847#242-signature-extension
Extension	Low	StatisticsCollector Extension 4.3.1: - Change: Improved shutdown handling to avoid a busy loop.

Bugfix

Area	Importance	Description
Extension	Low	DefaultIcons Extension 3.0.1: - Bugfix: Corrected the display names of the linear and solid variations of the "Rating Star" icon, which were previously swapped.
Extension	Low	HazelcastForceUnlock Extension 4.0.1: - Bugfix: The job is now correctly unregistered when the node is stopping.
Extension	Low	ScriptExecutionJob Extension 3.0.0: - Bugfix: The job is now correctly unregistered when the node is stopping.
Extension	Low	StylePackageTools Extension 1.0.2: - Bugfix: Dependencies between Style Business Objects are now updated correctly.
Extension	Medium	WebServices Extension 2.9.0: - Bugfix: Indexed collections with 'null' elements and named collections with 'null' values are now handled correctly when using TranslateTo() to serialize to XML. This is achieved by adding 'null' elements with the attribute 'xsi:nil="true"' (where the xsi prefix is defined as 'xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"' namespace). - Bugfix: XML elements with the attribute 'xsi:nil="true"' or 'xsi:nil="1"' (where xsi or an equivalent namespace prefix are defined as 'xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"') are now handled correctly

		when using TranslateFrom() to deserialize XML. This is achieved by setting the corresponding value to 'null' in the Appway Data Class instance.