Remarks

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Release notes with changes since version 7.2.9.

Upgrade notes:
For details on upgrading to Appway 8.0 from Appway 7.2, see the 'System Upgrade: 7.2 to 8.x'
article:
https://community.appway.com/screen/kb/article/system-upgrade-7-2-to-8-x-1633271182989

For new Appway 8 installations, see the Installation Guide:
https://community.appway.com/screen/kb/article/system-installation-appway-8-1657699102392

For information on Known Issues in Appway 8.0, see:
https://community.appway.com/screen/kb/article/appway-8-known-issues-1681371580713

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 8.0 features, see:
https://community.appway.com/screen/kb/article/system-upgrade-7-2-to-8-x-1633271182989#33-
adopting-new-features

For information on deprecated and removed features in Appway 8.0, see:
https://community.appway.com/screen/kb/article/feature-removal-and-deprecation-with-appway-7-1
-7-2-and-8-0-1531605514219
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Appway Platform (Core)

Feature

Area	Importance	Description
Case Template	Medium	Collections are now fully supported on the Controls tab. When defining a Collection Data Control, the new ‘Iterator’ properties allow configuring labels and visibility/editability (via sentries) individually for each element of a collection by providing an Index Variable, by default ‘i’. Nested collections are also supported, providing maximum flexibility regardless of the data structure employed.
Case Template	Medium	Defining consistency rules has become more flexible when working with collections. Using the new Data Class consistency rule type, you can define consistency rules for individual elements of a collection, instead of only for the collection as a whole. This type of rule applies to all objects of the given Data Class type.
Case Template	Medium	The new Conditional Cast Control available on the Controls tab allows specifying sorting, visibility/editability (via sentries), and labels for child Data Classes in scenarios with parent/child Data Classes (Data Class inheritance). This gives solution designers maximum flexibility when developing Case Templates based on complex data structures.
Cluster	Low	The Process Instances lock pool uses a new default hashing algorithm in Appway 8: CRC32 (Appway 7.2: Java HashCode). The default hashing algorithm can be configured by changing the following property: nm.cluster.lockpool.processinstances.hash.algorithm. Possible values are: hashCode, md5, sha256, crc32, murmur3, sipHash24.
Data Sources	Low	When defining a new JDBC data source, the Database Vendor field contains a new option: Other. If selected, you can define a custom state script to validate the connection to the database in the State Script field.
Interaction Channels	Medium	The 'Form Channel' Screen Component has been split into three separate Screen Components belonging to the 'Interaction Channels' category: 'Form', 'Actions', and 'Inconsistencies'. These Screen Components are part of the Component Extension.
Library	Low	Resource Business Objects with the MIME type image/svg+xml now render a preview in the properties panel.
Memory Usage Statistics	Medium	Added support for memory statistics to allow you to easily monitor the memory consumed by Appway. The Memory Usage Statistics page is now available in the Studio (System Maintenance > Statistics > Memory Usage Statistics). It provides an overview of the memory used by different memory holders as well as further details, all on a per-node basis.

Merging Business Objects	Medium	The manual Merge feature is helpful in parallel development, in the exceptional case that more than one team works on the same Business Object. With the Merge feature, it becomes easier to highlight and manually resolve conflicts between the two parallel development streams before deploying the new release. Note: The use of this functionality is subject to specific licensing terms.
Patching Business Objects	Medium	The ability to implement punctual fixes for running Process Instances – "patching" – is important when maintaining Appway applications. The Business Object Patching extension introduces a structured approach to replacing an existing version of a Business Object with a fixed version, with a wizard guiding you through the process. Note: The use of this functionality is subject to specific licensing terms.
Permissions	Medium	Over 20 fine-grained permissions are available which can be assigned to user roles to customize the access users have to different parts of the Studio. There are no longer any default roles defined in the Studio. If you are upgrading from Appway 7.2, see: https://community.appway.com/screen/kb/article/system-upgrade-7-2-to-8-x-1633271182989#323-changes-to-permissions Note: The use of this functionality is subject to specific licensing terms.
Screen Components	Medium	'File Chooser' Screen Component: - The new 'File Chooser' Screen Component is a customizable component that supports file upload features such as: multiple file upload, drag and drop, and a file upload progress bar. This component can be styled through the 'File Chooser' Style Business Object. - The new 'Progress Bar' Virtual Screen Component is integrated with the 'File Chooser' Screen Component to show the progress of file uploads. - The new 'Progress Popup' Virtual Screen Component is integrated with the 'File Chooser' Screen Component and defines the popup that is displayed as soon the uploading phase starts. - The 'Modal Popup - unsaved Changes' Virtual Screen Component is integrated with the 'File Chooser' Screen Component to warn users when they are leaving a Screen with unsaved changes. Note: A Virtual Screen Component is always integrated with a Screen Component and cannot be used individually in the Screen editor. To allow individual styling, a dedicated Style Business Object is available for each Virtual Screen Component. These Screen Components are part of the Component Extension.
Screen Components	Medium	All Screen Components with layout capabilities (Layout Container, Link Container, Scroll Pane, and File Chooser) now display the 'Wrap Elements' property ('Layout tab') when their 'Children direction' property is set to Horizontal. When such containers include a series of components, you can decide whether you want to allow them to wrap ('Wrap' option) or not ('Do not Wrap' option) in case they do not fit.
Servlet	Low	Servlets and filters are now dynamically registered and are no longer part of the web.xml.
Studio	Medium	When navigating the Studio, a unique URL specifying the Studio location and the Package context is created. You can bookmark this URL for direct access to a certain page of the Studio, share it with other developers etc.
System Health	Medium	HTTP Request Throttling is a tuning feature designed to help you keep your system stable when it starts to be overloaded. When the CPU usage reaches critical levels, HTTP throttling gradually slows down incoming, non-vital user requests in proportion to the CPU usage. Note that slowing down user requests can have a negative effect on the user experience, so the use of this feature needs to be carefully tested in your environment. The feature is disabled by default and the threshold values can be configured according to individual needs. HTTP Request Throttling is part of the System Health Sensors extension.
System Health	Medium	The CPU Load health sensor was renamed to CPU Usage. This sensor monitors the 1-minute CPU usage average. The threshold values can now be customized, allowing you to adapt the sensor to your exact scenario. The CPU Usage sensor delegates the

		computation of the CPU usage to the preferred CPU usage meter (either JavaProcess or SystemLoad). This sensor is part of the System Health Sensors extension.
System Health	Medium	The Disk Space sensor was improved to provide more comprehensive monitoring of the Appway Data Home. All partitions hosting the root Data Home, the first level of directories below the root level and custom defined directories are now monitored. Several aspects of the sensor functionality can now be configured to adapt the sensor to your exact needs. Finally, the Data Home Cleaner job was added. When activated, this job helps freeing up disk space by compressing and deleting old files in the 'logs' and 'conf' directories. This sensor is part of the System Health Sensors extension.
System Health	Medium	The new Business Object Repository health sensor checks if there are Business Objects with too many versions, which could endanger system stability. This sensor is part of the System Health Sensors extension.
System Health	Medium	The new Garbage Collection health sensor checks the overhead of Java Garbage Collection by monitoring that the average Garbage Collection overhead does not exceed the configured percentage. This sensor is part of the System Health Sensors extension.
System Health	Medium	The new GetSensorStates script language function retrieves the current state of the requested sensor(s). You can use this data in different ways, e.g. display it in an external system, perform further analysis, or create a custom report. This function is part of the Functions extension.
System Health	Medium	The new Hazelcast Errors health sensor warns you about errors logged by Hazelcast. In detail, the sensor checks if any Hazelcast WARN, ERROR, or FATAL messages were logged in the last minute. This sensor is part of the System Health Sensors extension.
System Health	Medium	The Value Store Sizes health sensor was improved to allow automatically pausing Process Instances that have a Value Store larger than the defined 'pause' threshold. This sensor is part of the System Health Sensors extension.
System Health	Medium	To monitor network aspects related to Appway, the 'Network' category was introduced. This category includes three new health sensors that can detect issues related to network stability and Hazelcast: - Network Ping - Hazelcast Task - Hazelcast TCP These sensors are part of the System Health Sensors extension.
Web API	High	The Web API is a new Business Object that enables you to expose HTTP-based service endpoints, allowing other systems, mobile applications, or websites to communicate with your Appway Solution. Using the Web API, the Data, Services, and Interactions that you expose are 100% modeled in Appway and fully integrated with your Appway Solution. The Web API Business Object supports multiple concurrent API versions, enabling quick development cycles. Web APIs are safe and secure by default and provide extensive security configuration options. The Web API Statistics (available at: System Maintenance > Statistics) provide an overview of the number of requests made to each Web API and the associated payload size.

Change

Area	Importance	Description
3rd Party Library	Low	Removed the following libraries: - fluent-hc-4.4.jar - commons-discovery-0.5.jar - commons-management-1.0.jar

		- commons-transaction-1.2.jar
3rd Party Library	Low	The library used for rendering PDF pages as PNG images changed to Apache PDFBox 2.0.11, which replaces the previously used library ICEpdf 2.2.
Cluster	Low	The Near Cache for Value Stores is now disabled by default. See the 'System Upgrade: 7.2 to 8.x' article for more details: https://community.appway.com/screen/kb/article/system-upgrade-7-2-to-8-x-1633271182989#14-check-the-near-cache-configuration-for-value-stores
Configuration	Low	If you are using WebSphere 8.5 or higher and want to enable Appway to pick up SSL certificates injected by WebSphere, set the following configuration property to true (default: false): nm.security.ssl.useWebSphereMethodExecutor.
Data Class Editor	Low	Added a restriction which prevents users from giving a Data Class the same ID as an existing Primitive Type since this leads to inconsistent behavior. The check is performed when creating, refactoring, duplicating, and moving a Data Class.
Data Class Editor	Low	Improved the validation messages reported by the Data Class editor in case of cyclic inheritance among Data Classes.
Data Classes	Low	The 'Autonomous' property was renamed to ‘Value Store Splitting Policy’ to more clearly indicate the purpose of this setting.
Licensing	Low	The following changes were made to License Reports: - License Reports are now generated once at the beginning of the month and stored as Cluster Files. - In the Studio, at System Configuration > Licensing Report, the 'Download last 13 months' button was replaced by the 'Download Last Year Reports' button, which downloads reports for the past year (January to December). - The System Info and Tech KPIs are now included in newly generated License Reports.
Process Instance Indexing	Low	Both transient and persistent Process Instances are now indexed.
Screen Editor	Low	Deprecated Screen Components are now sorted into a dedicated category in the Screen Editor. In addition, deprecated Screen Components are no longer shown when filtering the list of components, in order to avoid inadvertently using deprecated Screen Components when building new Screens.
Screen Editor	Low	The 'Layout' category used to sort Screen Components in the Screen Editor was renamed to 'Templating'.
Script Editor	Low	Improved 'unreachable code' detection and highlighting during validation in the Script Editor.
Style Business Object	Low	Updated the following default values in assorted Style Business Objects: - FilterTray Style Business Object: Max Width in the Size section - PhaseChevron Style Business Object: Icon Color in the Icon Completed Phase, Icon Current Phase, and Icon Next Phase sections - ProgressBar Style Business Object: Color in the Bar Background section - SliderFilter Style Business Object: Color in the Slider track active section These new default values only take effect for new installations. If you are upgrading to 8.0 from a 7.2.x installation, the default values available when you first installed are persisted. See the 'System Upgrade: 7.2 to 8.x' article for more details: https://community.appway.com/screen/kb/article/system-upgrade-7-2-to-8-x-1633271182989#322-new-default-values-in-style-business-objects
System Report	Low	The context menu action ‘Show System Report’ was removed from the ‘System Dashboard’ and ‘Developer Dashboards’ modules (available at System Maintenance > Dashboards). Generating a system report is still possible from the ‘Overview’ module (context menu) and the ‘Report’ module (button). These modules are available at System Maintenance > System Overview.
System Requirements	High	Appway 8 requires Java 8 (latest patch version of IBM JDK 1.8 or Oracle JDK 1.8).
Users/Groups	Medium	User management has been refactored to treat groups as independent entities, resulting in improved performance, especially on systems with a large number of groups.
Web Application	Medium	A new security constraint has been introduced for Web APIs. The URL prefix '/secure/api/*' is reserved for the Web API servlet. Access to URLs with this prefix requires the client to be authenticated by the application server. The user must be a member of the role

		'Administrator', 'User', or 'WebAPI'. The new 'WebAPI' role can be used to grant access to Web APIs for users which are not members of the role 'Administrator' or 'User'.

Bugfix

Area	Importance	Description
Case Engine	Low	Improved the handling of properties of the type Double so that the full precision of numbers is preserved and numbers are not truncated.
Case Template	Low	When a breakpoint is set in a script defined in a Case Template (for instance in the Sentry expression of a Control), the execution of the surrounding Process is now blocked correctly.
Form Channel (Legacy)	High	Fixed the following issue: When users click on an End Case action in a Form based on the Form Channel (Legacy) Screen Component without removing the focus from a field that was filled in: An error is generated, and the fields the user was editing are not updated, due to a race condition.
Icons	Low	When switching from legacy styles to a Style Business Object, the color defined in the Style Business Object is now correctly applied and not overridden by the old legacy color.
Packages	Low	If a starred Package is deleted and a new Package with the same name is created afterwards, this new Package is no longer starred.
Packages	Low	The Base Package is no longer listed as a source Package for Replacements, as Business Objects in the Base Package cannot be declared as Replacements.
Script Functions	Low	Patched the iText 2.0.4 library to fix an issue where the first page was duplicated when using the MergePDFFiles function.
Script Language	Low	Breakpoints are now correctly deleted when the Business Object containing them is deleted and committed.
Script Language	Medium	Fixed an issue where the EQUAL(=), NOTEQUAL(!=), LESS(<), GREATEREQUAL(>=) functions used the type of the first argument to compare all following arguments. Now, the functions use the argument type which has the higher precision, convert the other argument to this type, and then perform the comparison. Example of new behavior: 5 == 5.1 returns false; 5 != 5.1 returns true; 5 < 5.1 returns true; 5 >= 5.1 returns false. Example of old behavior: 5 == 5.1 returns true; 5 != 5.1 returns false; 5 < 5.1 returns false; 5 >= 5.1 returns true. If necessary, you can restore the old behavior. Contact your Solution Engineer for details.
Studio	Low	Fixed inconsistencies in the Studio where the local time zone was used instead of the server time zone.
Style Business Object	Low	Fixed an issue where a Style Business Object inheriting from another Style Business Object inherited incorrect icons for Interactive Elements. Inheritance for Interactive Elements now works in the same way as for other style components.
System Health	Low	Fixed an exception returned by the Integration Link Consistency sensor which occurred when shutting down Appway.
Workspace	Low	Fixed an issue on IE11 where the mandatory icons caught the focus when using tab navigation.

Appway Extensions

Feature

Area	Importance	Description
Extension	Low	ClusterTools Extension 6.0.0: - Feature: Added a second table called Hazelcast Map Operations to the Hazelcast Maps window in the Studio. This table provides detailed counts of different operations performed on distributed maps and the average latency of these operations. - Feature: Added the 'Locked Entries (Count)' column to the Hazelcast Map States table. - Change: Renamed the Hazelcast Maps table to Hazelcast Map States.
Extension	Medium	Component Extension 8.0.0:

		- Feature: Phase Chevron: The 'Phase Chevron' Style Business Object now has the following properties: 'Starting Line' and 'Ending Line', which allow styling the initial and final lines of the 'Phase Chevron' Screen Component. - Bugfix: Phase Chevron: All the phases in the 'Phase Chevron' Screen Component now have the same distance from each other.
Extension	Medium	DefaultIcons Extension 2.0.1: - Feature: Added and revised over 300 icons. - Feature: Icons are now also searched by the tags assigned to their display name to improve findability. - Feature: The majority of icons is now available in two different styles: e.g. linear and solid.
Extension	Medium	Functions Extension 4.0.2: - Feature: The following functions were added: - GetSensorStates - StoreLicenseReport - GetLicenseReports - GetUserRO - UserAddToGroup - UserRemoveFromGroup - UserGetGroupIds - UserIsInGroup - GetProcessToken - ListProcessTokenIDs - EndCaseTask - GetCaseContext - RemoveCaseCollectionElement - SetCasePrimitiveValue - Bugfix: The XML produced by DataEntityToXml no longer contains the Package name in the tag.
Extension	Low	HazelcastForceUnlock Extension 4.0.0: - Feature: HazelcastForceUnlockJob now also releases user group locks.
Extension	Low	MemoryAnalysis Extension 5.0.0: - Feature: Improved detection of the old generation JVM memory pool name. - Change: Removed the option to request Garbage Collection before displaying the memory statistics.
Extension	Low	PortalWorkList Extension 8.0.0: - Feature: You can now monitor the memory consumed by the PortalWorkList cache at System Maintenance > Statistics > Memory Usage Statistics.
Extension	Low	StatisticsCollector Extension 4.1.0: - Feature: The extension now collects Hazelcast operations statistics. - Feature: The extension now collects Garbage Collection statistics. - Change: The extension now uses CPU usage meters to retrieve the CPU usage.
Extension	Low	WebServices Extension 2.8.1: - Feature: The httpPutBinary method is now implemented in the RestClient. - Bugfix: Fixed an issue where the Multipart binary body was not properly constructed in the case of a file with an empty content type.

Change

Area	Importance	Description
Extension	Low	BAM (Business Activity Monitoring) Extension 3.5.0: - Change: Adapted the extension to comply with new permission functionality in Appway 8.
Extension	Low	ClusterConnectivity Extension: - Change: This extension is no longer available with Appway 8. The health sensors

		provided by this extension (Network Ping, Hazelcast Task, Hazelcast TCP) are now available in the System Health Sensors extension. See the 'System Upgrade: 7.2 to 8.x' article for details: https://community.appway.com/screen/kb/article/system-upgrade-7-2-to-8-x-1633271182989#243-cluster-connectivity-extension
Extension	Low	COB Extension 4.0: - Change: The extension now complies with the changes made to PDF image rendering in Appway 8 (switch to Apache PDFBox 2.0.11).
Extension	Low	CustomSensors Extension 1.1.0: - Change: The following health sensors previously contained in this extension have been moved to the System Health Sensors extension: - Configurable Java Memory sensor - Configurable CPU Load sensor - Log Errors sensor - Extensions sensor - Value Store Sizes sensor See the 'System Upgrade: 7.2 to 8.x' article for details: https://community.appway.com/screen/kb/article/system-upgrade-7-2-to-8-x-1633271182989#242-custom-sensors-extension
Extension	Low	DataStore Extension 3.4.3: - Change: Deprecated the FilterEntities Script Function as well as the Compound Term, Simple Term, and Sorting Term Primitive Types. - Change: Adapted extension to comply with new permission functionality in Appway 8.
Extension	Low	Deployment Extension 10.0.1: - Feature: Added the optional $includeDynamicGroups parameter to the ExportUsers() function, which allows including dynamic groups when exporting users (default: false). - Change: Implemented read-only user functionality to improve performance when exporting users. - Change: The ExportUsers Script Function now exports to JSON instead of XML.
Extension	Low	Inbox Extension 2.0.3: - Change: The extension now uses the user IDs functionality to improve performance when retrieving users in a role. - Change: The searchCriteria, sortCriteria, and pageCriteria parameters of the GetInboxWorkitems function are now optional. - Bugfix: WorkItemMyCasesFilter now also returns a Case even if no user has taken ownership of the Case yet.
Extension	Low	PDFTextExtraction Extension 0.4: - Change: The extension now uses the Apache PDFBox 2.0.11 library newly bundled with Appway 8.0.

Bugfix

Area	Importance	Description
Extension	Medium	SPNegoAuthenticator Extension 1.0.9: - Bugfix: Fixed an issue which blocked User Delegation when calling endpoints using Kerberos.
Extension	Low	Chat Channel 1.1.1: - Bugfix: The error message "Property Write-Method not found" is no longer displayed during start-up.
Extension	Low	Mail Extension 3.1.2: - Bugfix: Removed a non-ASCII character from the name of the email notification delivery channel threads. - Bugfix: Implemented a fix to avoid possible Expression Language cache poisoning when

		refactoring.
Extension	Low	ProcessMigration Extension 4.0.1: - Bugfix: Removed the maximum length limitation on input fields in the 'Options' step of the preview and run wizards.
Extension	Low	WebServices Extension 2.8.0: - Bugfix: Fixed an issue in the TranslateTo Script Function where inherited properties were not included in XML during serialization.