

Remarks

Release notes with changes since version 6.1.8.

Upgrade instructions and a list with known issues will be published on developer.appway.com.

Appway Platform (Core)

💡 Feature

Area	Importance	Description
Back end - Cluster Storage	Medium	Binary resources attached to Business Objects are now only loaded into memory when needed. This saves memory for installations that rely on many large data handles, such as PDF files. To disable this feature and keep loading all data handles into the main memory, set the configuration property "nm.cluster.eviction.datahandles.maxidle = 0". By default, it is set to 3600 seconds.
Back end - Cluster Storage	Low	RelationalDbHazelcastStore extension: The relational Hazelcast store now uses the new map factory mechanism implemented in the Appway core.
Back end - Cluster Storage	Low	RelationalDbHazelcastStore extension: Updated the exception handling of the Hazelcast Store for relational databases. It is now aligned with the new retry mechanism in Appway's core.
Entity Manager - Indexers	Low	Added the new local function "term" to the EntityIndexFilterBuilder Primitive Type. You can use it to add new filter terms to query the Entity Indexer.
Entity Manager - Indexers	Medium	The "QueryData" function accepts an new "start" parameter. It defines the starting row from which results should be returned. You can use it in combination with the the "limit" parameter to create pagination queries for indexed data.
Entity Manager - Indexers	High	The Entity Indexer provides the means to create fast searchable indices for data entities that have been stored in an Entity Store.
Entity Manager - Stores	High	Entity Stores are a new concept for the management of business data. An Entity Store allows the system to manage data entities outside of a Value Store and persist them directly in a database. Managed data entities are lazy loaded: they are loaded only when and if the are accessed. The size of Value Stores can thus be reduced, as well as CPU usage (serialization) and network usage (replication). Entity Stores can be implemented with any supported relational database or Cassandra.
Monitoring - Cluster Log	Medium	By default, Cluster Log entries are now only collected in main memory instead of permanent storage. To re-enable persistence of the Cluster Log, set the configuration property "nm.cluster.log.persistent = true". Note: If you enable persistent Cluster Log entries right after migrating from Appway 6.1 to 6.2, you must manually delete all Cluster Log statements collected in Appway 6.1 during migration.
Monitoring - Cluster Log	Medium	You can now configure how long a Cluster Log statement list remains in the Cluster Log. By default, collected Cluster Log entries are evicted after 15 minutes: - nm.cluster.log.eviction.ttl = 900 - nm.cluster.log.eviction.maxidle = 0 Note that entries are also compacted every 10 minutes. In total, an entry remains in the Cluster Log between 18 and 28 minutes, as chunk and then as compaction.
Monitoring - Cluster Log	Medium	You can now limit the volume of the Cluster Log by throughput. Two new configuration properties allow you to configure the number of bytes collected per 10 seconds (chunk) and per 10 minutes (compaction). Regular file-based logging on each node is fully independent of the Cluster Log, and therefore not affected by this limit. For example: nm.cluster.log.limit.chunkvolume = 400000 nm.cluster.log.limit.compactionvolume = 4000000
Monitoring - I/O Statistics	Low	Lucene I/O statistics are now measured for Discussion messages.
Monitoring - JMX	Low	Implemented new MBeans with information about Hazelcast maps (com.nm > Cluster > HazelcastMaps).
Monitoring - JMX	Low	The MBean "HzMapServiceInfo" has a new property "TotalDirtyEntriesCount".
Process Engine	Low	Added the built-in functions "CommitProcessInstance" and "RollbackProcessInstance" to commit or roll back thread-local changes related to a given Process instance.
Process Engine	Low	Two new configuration properties can be used to override the configuration of the "Process Job Cleanup" job, which deletes scheduled process jobs for non-existing process instances. The property "nm.workflowengine.updatejob.cleanup.schedule" has the default

		value "0 0 0/4 * * ?". The property "nm.workflowengine.updatejob.cleanup.paused" is by default "false".
Process Engine	High	<p>You can now configure the locking behavior for Process instances. By default, the following system configuration properties are set:</p> <ul style="list-style-type: none"> - nm.cluster.lockpool.processinstances.acquiretimeout.first = -1 - nm.cluster.lockpool.processinstances.throwexception.first = true - nm.cluster.lockpool.processinstances.acquiretimeout.notfirst = 30 - nm.cluster.lockpool.processinstances.throwexception.notfirst <p>The "acquiretimeout" properties define the maximum duration in seconds after which trying to acquire the (first or not first) lock returns, having acquired the lock or not. Set it to -1 to disable the timeout; 10 or larger otherwise.</p> <p>Set the "throwexception" properties to true to throw an exception if the (first or not first) lock could not be acquired. Note that this property is only considered if a positive acquire timeout is set.</p>
Screen Component	Medium	Adaptive Tab: New component that helps provide access to information and metadata when space on a Screen is not readily available. For example, it can be used to show different types of information in a side bar.
Screen Component	Medium	Adaptive Table Of Contents: New component that analyzes the current Screen and displays a clickable list of the elements in it. Particularly on smaller devices like tablets, screens tend to grow vertically, and become very long. With the Adaptive Table Of Contents, users can easily and quickly see what's available, what the validation status of each section is, and jump to individual sections directly.
Screen Component	Medium	Border Layout Manager Trigger: New component representing a button to open or close an area of the Border Layout Manager. For example, use it in a Screen's header or footer to have the button always visible. Available from version 3 of the Workspace.
Screen Component	Low	Border Layout Manager: New design for version 3 of the Workspace CSS. Previous versions of the Workspace are not affected.
Screen Component	Medium	Card: New "Card" and "Card Layout" components to create Screens layouts made out of several disparate sections of content ("cards") in a responsive way. Available from version 3 of the Workspace.
Screen Component	Low	Data Table: Added a new numeric filter with which the user can filter for numbers and number ranges.
Screen Component	Low	Data Table: Added a pager to the Data Table as additional interaction mode. When setting up the component, you can select whether users scroll to view more rows (current "Scrolled" mode) or browse through pages of rows (new "Paged" mode).
Screen Component	Low	Data Table: Column labels are now also displayed as a tooltip, so that if the label is not fully visible, the user is still able to read the full text.
Screen Component	Low	Data Table: It is now possible to set a white-space mode for the column headers. This allows you to display multiple lines in the header and control line breaks. Possible values are normal, nowrap, pre, pre-line and pre-wrap.
Screen Component	Medium	Data Table: The Data Table component now actively responds to the available space, making it mobile-friendly. It is possible to set the thresholds where the table changes shape.
Screen Component	Medium	Data Table: The Data Table component now has a new centralized filter panel. It is adaptive and comes with specific features for each type of filter. For instance, you can now filter for text using wildcards, or choose whether to take the character case into account. The dropdown filter has been extended to support multi-value selection. Check the documentation for an exhaustive list of new features around Data Table filtering.
Screen Component	Low	Data Table: The Data Table component's new filtering panel generates a set of built-in labels. These labels can be modified, allowing you to change the text that appears in the filtering panel.
Screen Component	Low	Data Table: You can now force a reinitialization of the Data Table model. You can thus decide whether the state of a Data Table (e.g. filter settings) must be cleared when the component is rendered. By default, the component reuses the same model instance for the whole duration of a Process. If the "reinitialize" property returns true, a new instance of the model is generated each time the component is rendered.
Screen Component	Low	Data Table: You can now select "Entity Index" as data source for a Data Table. This displays the indexed data for a given Entity Store, thus providing fast filtering options in a big data setting.
Screen Component	Low	Data Table: You can now set a hover effect on the rows of a table. The coloring can be

		controlled using built-in "Color" Business Objects.
Screen Component	Low	Data Table: You can now set the direction of Data Column sorters dynamically.
Screen Component	Medium	Dropdown List: Re-added the ability to add read-only entries into Dropdown Lists that are searchable, and to load entries dynamically by prepending the inactive entry with three hashes (###).
Screen Component	Low	Dropdown List: You can now use the Label "component.dropdownList.noMatches" to modify the "no search results" text.
Screen Component	Low	File Upload: New design for version 3 of the Workspace CSS.
Screen Component	Medium	Flow Bar: New component that displays the main buttons to navigate in Processes, e.g. to the next Screen in a workflow. Available from version 3 of the Workspace.
Screen Component	Medium	Header: New component providing standard header functionality out of the box, such as a corporate logo, the title of the application and hyperlinks. The Header component is responsive: it adapts to any screen width. You can for example use it in the "North" area of the Border Layout Manager component. Available from version 3 of the Workspace.
Screen Component	Low	Icon: A new "color" dropdown allows you to change the color of an icon when the system's icon type is set to SVG.
Screen Component	Low	Info Table: Added "max-width" property to the Info Table component.
Screen Component	Low	Info Table: The color of Info Table borders is now retrieved from a "Color" Business Object. It can be changed globally.
Screen Component	Low	Link List: The Link List component now also accepts a Screen Link as child component.
Screen Component	Low	Link List: The Link List component now has a title property.
Screen Component	Medium	List Button: New component to display a list of tasks or buttons inside the Adaptive List component. Available from version 3 of the Workspace.
Screen Component	Medium	Notification List: Added buttons to delete all notifications, or to mark them all as read.
Screen Component	Low	Notification Topic Subscription: Added an "onsubscriptionchange" action.
Screen Component	Medium	Number Picker: New component to let users conveniently select numbers on all types of devices.
Screen Component	Low	Phase Chevron: New design for version 3 of the Workspace CSS. Previous versions of the Workspace are not affected.
Screen Component	Medium	Status Button: Added a new "Status Button" Screen component. It allows you to display numbers on which users can click. Available from version 3 of the Workspace.
Screen Component	Low	Tooltip: New design for version 3 of the Workspace CSS. Previous versions of the Workspace are not affected.
Script Language	Medium	Added local functions to the "Calendar" Primitive Type to conveniently retrieve a year, month, day of the month, day of the week, hours, minutes, seconds or milliseconds.
Script Language	High	Added the following new functions: - BindingProxy - CopyBinaryDataToStream - EscapeRegex - ExecuteDistributed - GetInstalledExtensions - GetUserGroups - GetUserRoles - NextDayOfMonth - NextDayOfWeek - SignData - TextFormat - UseValuestoreRO - InjectVariable
Script Language	Low	Added the new local functions "getLength" and getLastModified" to the Primitive Types "LocalFile" and "ClusterFile".
Script Language	Medium	The new function "TIMEDIFF" has been implemented. It calculates the time span from a start date to an end date in a given time unit.
Security - Authentication	Low	The new configuration property "nm.auth.roles.required" can be used to specify a list of required security roles. "Required" means that an authenticated user must be a member of at least one of these roles. This feature has been implemented for installations where users are authenticated even if they are not member of any security group. If a user is not

		authorized through this additional check, a "403 - Access Denied" error message is displayed. This prevents the creation of user accounts for such users. The default value of the configuration property is an empty string, which means that this authorization check is disabled by default (backward-compatible with previous versions of Appway).
Studio	Low	The Studio favicon now uses the new Appway logo typeface, and changes background color based on the background color set for the Studio.
Studio - Administration	Medium	System: Added a new System Health monitoring tool with sensors for critical system events.
Studio - Administration	Low	System: CPU statistics are now also tracked for registered Ajax helpers.
Studio - Business Objects	Low	Added the configuration property "nm.businessobjects.namepattern.useWhenIdAndNameEqual". If set to false (default), Business Objects with an identical name and ID will only use their ID as display name. If set to true, the name pattern will be used to render the display name even if name and ID are the same.
Studio - Console	Low	Process Instances tab: It is now possible to filter for "paused" instances.
Studio - Data Class Editor	Low	You can now alt-click on a toggle expand/collapse arrow next to an entry in order to expand or collapse all Data Class properties, functions, etc.
Studio - Deployment	Low	The CSV file that is generated during an import operation, and attached to a Discussion message, now also contains a list of missing dependencies, rather than just a list of imported Business Objects.
Studio - Home	Medium	Developer Dashboard: Added a new System Health Dashboard widget. It displays information on critical system events.
Studio - Library	Medium	Custom Lists now have the context menu entry "List Properties". It opens a window showing the List's properties (ID, change log, etc.). This is useful when accessing Custom Lists from scripts.
Studio - Library	Low	You can now edit the properties of multiple Business Objects at once. In the Studio Library, select multiple Business Objects and open the Meta Data editor. Changes will be applied to all selected Business Objects.
Studio - Process Editor	Low	The names of Gateways and Events are displayed as labels next to these elements.
Studio - Script Editor	Low	The Script Editor now offers code completion based on capital letters in camel-case code elements. For example, "getAH" suggests "getAdapterHome()".
Studio - Users	Low	When displaying a user preference column of a known type (Date, Boolean), the corresponding filter and sorter are applied to the column. For all other types, the text sorter and text filter are applied.
Workspace	High	Introduced a new default Workspace (version 3). It relies on a new default CSS and modifies the behavior of many Screen components. The properties of some Screen components are affected. Additionally, some Screen components introduced with 6.2 are only available when version 3 of the Workspace is activated. On new systems, version 3 of the Workspace is activated by default. On old systems, activate it by setting the configuration "nm.workspace.css.version" to "v3", or set it to "v1" or "v2" for backwards compatibility. For Internet Explorer, version 3 of the Workspace requires IE8 at a minimum.
Workspace Notifications	Medium	Added an "inbox" property to the Screen components "Notification Popup", "Notification List" and "Notification Alert". It allows you to select another notification inbox than the generic one.
Workspace Notifications	Low	Added the built-in function "GetNotificationReceivers" to collect the IDs of users who should receive a notification for the supplied topics. This allows you to use the notification subscription mechanisms but still explicitly send out the actual notification (e.g. an e-mail). This can be useful if there is no delivery channel implementation for the desired channel, or if you need to assemble a very specific notification containing more than text (e.g. images or additional data).
Workspace Notifications	Low	Added the built-in function "GetNotificationTopicName" to fetch the name of a notification topic.
Workspace Notifications	Medium	Added the built-in function "RemoveNotifications" to remove notifications with a given ID (both user inbox notifications and the actual message). Notifications can be removed from all inboxes or only one specific user's inbox.
Workspace	Medium	Added the configuration property "notification.security.level" to the Component extension.

Notifications		The default security level is "md5". You can set it to "none" to switch off security and avoid expensive cryptographic token hash computation.
Workspace Notifications	Medium	Added the Integration Link end component "Send Notification". Use it to generate Workspace notifications from an Integration Link.
Workspace Notifications	Low	For Screen components related to Workspace notifications, the Ajax helper's time and CPU usage is now tracked. You can view this information under Administration > System > CPU statistics.
Workspace Notifications	Low	In all Screen components related to Workspace Notifications and Collaboration, user names and avatars are now hyperlinks that lead to the corresponding user's profile page.
Workspace Notifications	Low	Notification topics are now taken into account for dependency analysis. In particular, if a topic that does not exist is referenced with a static string, an unsatisfied dependency is reported upon validation.
Workspace Notifications	Low	Notifications now support language Labels in text and type.
Workspace Notifications	Low	The Primitive Type "NotificationMessage" now offers methods to translate the message text (possibly annotated with links, attributions, and mentions) to HTML, plain text, or a custom format.
Workspace Notifications	Medium	There can now be multiple Appway-internal notification inboxes per user. You can configure a Script Function to define which inbox to choose for a given notification. To do so, use the configuration property "nm.usermessaging.notification.inbox.function.id". If this is not configured, the system behaves like before and all notifications go to the (single) default inbox. The built-in function "LoadNotifications" has the additional optional parameter "inbox" to choose an inbox. If it is not set, the default inbox is used. The built-in function "MarkNotificationRead" also has an additional optional "inbox" parameter to enable marking notifications as read in any inbox via a script.

Change

Area	Importance	Description
Back end - Cluster Storage	High	Default properties updated: - nm.cluster.lockpool.processinstances.throwexception.first: false -> true - nm.cluster.lockpool.processinstances.throwexception.notfirst: false -> true - nm.cluster.persistence.valuestores.writercount: 1 -> 2 - nm.cluster.nearcache.valuestores.maxidle: 0 -> 900 - nm.cluster.nearcache.valuestores.ttl: 3600 -> 1200
Back end - Cluster Storage	Medium	Non-persistent Process instances and Value Stores are saved to distributed maps with Hazelcast's "putTransient" operation. As a result, these objects are not passed to the map store implementation and therefore not persisted. The time to live is set to 0, which means that these entries live forever.
Back end - Cluster Storage	High	Persistence: "store" and "delete" operations are retried upon exceptions during parallel write to persistent storage.
Back end - Cluster Storage	High	Persistence: improved Map Store exception handling: "load()" now throws an exception while "loadAll()" does not. "store()", "storeAll()", "delete()" and "deleteAll()" all throw exceptions.
Back end - Cluster Storage	Low	RelationalDbHazelcastStore extension: Updated the parsing of the configuration property "com.nm.cluster.relationaldb.store.maps" (see "adapter.cfg").
Back end - Cluster Storage	Low	The optimized Hazelcast operations "set" and "delete" are used instead of "put" and "remove" when committing objects in cluster cache layers. These optimized operations do not return the old value and therefore generate less network traffic and CPU overhead due to serialization.
Back end - Core extensions	Low	Released a new version of the following core extensions for Appway 6.2: ComponentExtension (6.2.4), Functions (2.7.2), DrMoriartyAdapter (4.0.1), RelationalDbHazelcastStore (6.1.4)
Back end - Java libraries	Low	Upgrade Bouncy Castle Crypto API from version 1.37 for Java 1.4 to version 1.38 for Java 1.6.
Back end - Java libraries	High	Upgraded Hazelcast to 3.4.1.
Back end - System Start-up	Low	Moved the initialization of the Business Object index from Cluster service initialization (early) to Business Object Repository start-up (later).

Back end - System Start-up	Low	Moved the initialization of the index for messages in the Studio's Discussion Feed from Cluster service initialization (early) to Business Object Repository start-up (later).
Business Object Repository	Low	Improved exception handling in the Business Object Repository service.
Business Object Repository	Medium	Removed already deprecated functions on the Business Object Repository service: select(String), getVersionInfos(), getVersionInfos(VersionFilter), getVersionInfos(String), getVersionInfos(String, VersionFilter), get(String, String), delete(String, String), undelete(BusinessObject), commit(List, AjaxProgress), commit(List, String, AjaxProgress), get(ObjectRef), get(String, VersionFilter), select(), delete(BusinessObject), getVersionInfo(String). Replacement functions are available.
Monitoring - Cluster Log	Medium	Changed the format of the compaction key. This change requires deleting all existing Cluster Log statement lists. By default, all persistent entries are cleared upon every system start-up. It can be disabled by setting the configuration property "nm.cluster.log.clearonstartup = false".
Monitoring - Cluster Log	Medium	Removed the day compaction mechanism. This change requires deleting all existing Cluster Log statement lists. By default, all persistent entries are cleared upon every system start-up. It can be disabled by setting the configuration property "nm.cluster.log.clearonstartup = false".
Monitoring - Disk space	Low	The default value of the following configuration properties has changed: - "nm.diskspace.enabled" from "true" to "false" - "nm.diskspace.job.paused" from "false" to "true" Appway no longer collects information about free disk space on the volume where the Data Home is located. This operation has led to performance problems on systems where the Data Home is located on a network file system.
Process Engine	Medium	Value Stores for new Process instances are now assigned the same ID as their process instance. The Process instance and its corresponding Value Store are therefore owned by the same Cluster node. This has a positive impact on performance for operations working on local Process instances since the Value Store does not need to be loaded over the network anymore.
Screen Component	Low	Adaptive Flow Layout: Added a validation property to the Adaptive Flow Layout Group component.
Screen Component	Low	Adaptive Flow Layout: Changed the default settings for the Adaptive Flow Layout (e.g. label and child element position) to better suit the needs of typical use cases. You can modify the default settings globally in the Component extension's properties.
Screen Component	Low	Adaptive Flow Layout: Improved the performance of the Adaptive Flow Layout component's rendering.
Screen Component	Low	Adaptive Flow Layout: You can now change the colors of Adaptive Flow Layout components with "Color" Business Objects instead of CSS code.
Screen Component	Low	Add / Remove Listbox: Changed the colors of the "add" and "remove" arrows for increased visibility.
Screen Component	Medium	Ajax Throbber: The Ajax Throbber now has a new white GIF image.
Screen Component	Low	Border Layout Manager : You can now change the Border Layout Manager's colors with "Color" Business Objects.
Screen Component	Low	Button: You can now change the Button component's colors with "Color" Business Objects instead of CSS code.
Screen Component	Low	Data Table: If possible, the value of a filter will now be bound to the variable that initially set the filter.
Screen Component	Medium	Data Table: Renamed all CSS classes to fit Appway code conventions. If you had overwritten any class, make sure that you update it.
Screen Component	Low	Data Table: The "Date Time" filter for Data Columns no longer displays a calendar interface. Instead, users can pick a date from simple drop-down and input fields. This shortens the rendering phase and simplifies the user interface for complex values. It also improves the user experience on touch devices and small screens in general.
Screen Component	Low	Data Table: The Data Table component no longer relies on a "ViewState" object to store each user's filter and sorter settings. Instead, the model instance is kept in memory and reused. As a result, the Process instance attribute "DataTableViewState" is not necessary anymore.
Screen Component	Low	Data Table: The new layout property "ResizeMode" gives you more control on how the

		Data Table gets resized according to the space available. Select between the "Auto", "Content", "Styles" and "Expand" modes. Another new property, "Visible Row Count", lets you set the amount of rows that must be visible if no styles are applied and the Data Table is in scrolled interaction mode.
Screen Component	Low	Data Table: The status panel now format the current and total numbers with a thousands separator.
Screen Component	Low	Data Table: When adding an Action to a Data Content component, the text is now rendered using the corresponding HTML tag (<a>). Any links within a Data Table will thus look like any other Screen component containing links.
Screen Component	Low	Data Table: You can now change the Data Table's colors with "Color" Business Objects instead of CSS code.
Screen Component	Low	Date Picker: Minor modifications to the component's style.
Screen Component	Low	File Upload: You can now change the File Upload component's colors with "Color" Business Objects instead of CSS code.
Screen Component	Low	Icon: When rendering SVG icons in-line in HTML, the XML headers are no longer included in the HTML code rendered. This ensures that the rendered HTML can be parsed as proper XHTML.
Screen Component	Low	Icon: When rendering SVG icons inline in HTML, the XML headers are no longer included in the generated HTML code. This ensures that the rendered HTML can be parsed as XHTML properly.
Screen Component	Low	Image Scaler: Deprecated the "Image Scaler" Screen component.
Screen Component	High	Image Text: Deprecated the "Image Text" Screen component.
Screen Component	Low	Info Box: Labels in Info Boxes now have a maximum width of 500px. This makes sure that their text width is aligned with that of their child components, e.g. a Checkbox List.
Screen Component	Medium	Info Table: Cleaned up Info Table rendering. Unless Workspace CSS is set to v1 and auto layout is turned off, the table no longer inserts additional <tr> and <td> tags and "0.gif" images in order to create column and row spacing.
Screen Component	Low	Info Table: Improved small area rendering of the Info Table component. Header labels now no longer always use 50% of the available space.
Screen Component	Low	Info Table: Moved the Info Table renderer into the Component extension, so it can be updated more easily in the future.
Screen Component	Low	Notification Single Topic Subscription: Minor modifications to the component's style.
Screen Component	Low	Notification Topic Subscription: Minor modifications to the component's style.
Screen Component	Low	Notification Topic Subscription: Subscriptions are now sorted based on the list of topics defined in the "Topics" property. If they "Topics" property is not defined, they are sorted alphabetically.
Screen Component	High	PDF Viewer: Deprecated the "PDF Viewer" Screen component is now deprecated.
Screen Component	Low	Phase Chevron: You can now change the Phase Chevron component's colors with "Color" Business Objects instead of CSS code.
Screen Component	Medium	Portlet: The "Portlet" and all related Screen components are now only available if using version 1 or 2 of the Workspace. For version 3 of the Workspace or above, use different components, e.g. "Card".
Screen Component	Low	Slider: Swapped "Max" and "Min" positions when slider is in vertical orientation.
Screen Component	Low	Social Bookmark: Deprecated "Social Bookmark" component
Screen Component	High	Social Bookmark: The "Social Bookmark" Screen component is now deprecated.
Screen Component	Medium	Text Field with Suggestions: The Text Field with Suggestions and Text Field with Rich HTML Suggestions now use jQuery to display HTML, instead of an innerHTML call. This prevents security scans from wrongly flagging these JS files as potential security problems.
Screen Component	Low	Tooltip: You can now change the Tooltip component's colors with "Color" Business Objects instead of CSS code.
Screen Component	Low	Waitwheel: The Waitwheel component has a new default white GIF image.
Script Language	Low	Removed script callback functionality, since reacting to events is covered by Integration Links. The built-in functions "UnregisterCallback" and "UnregisterAllCallbacks" have been removed accordingly. If you used script callbacks, switch to Integration Links instead. Please contact Appway Support and ask for the Integration Link elements corresponding to your script callback implementation.

Script Language	Medium	Removed the temporary function "ProcessTokenRO". Use the "ProcessToken" function instead, which no longer acquires a write lock.
Script Language	Low	When you supply "null" as the collection argument to the "ToIndexed" function, the function now returns "null" instead of throwing a NullPointerException. This is more convenient when retrieving a Java collection via a local Primitive Type function. In this case, you don't have to perform a null-check before the conversion to an indexed collection any more.
Security - Authentication	Low	Key service: At system start-up, verify the availability of encryption algorithms used by Appway and generate an error message if an algorithm is not available or cannot be used for another reason.
Security - Authentication	Low	Updated to the latest version of HttpClient libraries to enable Kerberos impersonation.
Studio - Administration	Low	Logging: In the Log Viewer tab, the plain text representation of log entries now also includes the node name, the thread name and the logger name.
Studio - Administration	Low	Logging: Removed the "Active" column in the Log Files tab. Instead, the table is now filtered by default according to the log files modified today.
Studio - Administration	Low	System: Improved the display of I/O statistics.
Studio - Administration	Low	When an active tab can be reloaded, its parent section in the left-hand menu now also displays a reload button.
Studio - Console	Low	Process Instances tab: In the "Details" view, the context menu action "Reactivate" is no longer available for process tokens on script tasks. Reactivating such a process token had no effect anyway. Suspended tokens on script tasks must either be restarted or completed.
Studio - Console	Low	Notifications tab: The "appway" delivery channel is the first option displayed in the table of topics and in the Edit Subscriptions dialog.
Studio - Console	Low	Removed the menu entry "Delete All" in the Value Stores tab.
Studio - Data Class Editor	Low	Improved the interface for the "Multiple Undo" feature to make it easier to understand.
Studio - Data Class Editor	Low	Inherited Data Classes now show the display name, instead of just the ID, whenever possible.
Studio - Deployment	Low	Improved the header labels of the Archive import dialog. They should now be clearer to first-time users.
Studio - Discussion	Low	Applied consistent naming for "Discussion", "Messages" and "RSS Feed".
Studio - Extensions	Low	Added a help text explaining the meaning of an extension's priority.
Studio - Home	Low	Moved position of dashboard chart widget legends from SE to NE, so that the topmost entries are always visible.
Studio - Library	Low	Business Object dependencies now include dependencies on missing Business Objects, rendering them striked-through and in red color.
Studio - Library	Low	New Business Object icons
Studio - Library	Low	When starting a Screen to preview it from the Library's properties panel (independently of a process instance), that Screen will now open in a simple browser window. No restrictions such as hiding the status bar are set, so that you can take full advantage of browser dev tools.
Studio - Login Page	Low	Detect if the login page is rendered because of a login error. Custom login pages can use the inherited variable "\$error" of type "Boolean" to check if there has been a login error or not.
Studio - Login page	Low	Modified the design of the built-in login page.
Studio - Process Editor	Medium	New wizard to schedule the triggering of a "Timer" Start Event.
Studio - Process Editor	Low	Swimlane names, Phase names, Gateway labels, Event labels and Connection labels are now translated in the Process editor and process images.
Studio - Screen Editor	Low	In the Screen Preview tab, "Random Test Data" is now selected as the default test data.
Studio - Screen Editor	Low	Validation: A warning is generated if the "Enabled" property of an action contains only comments.
Studio - Screen Editor	Low	Validation: For the data source "Catalog", the validation tool check whether the referenced Catalog has a column named "id".

Studio - Users	Low	The filter for the column "Roles" is now a free-text input. This means that you can filter for custom roles as well.
System Administration	High	Dr Moriarty Adapter extension: The tools "Value Store Editor" and "Java Threads" have been disabled. They could cause severe performance problems on certain installations.
Workspace	Low	Improved the performance of the Layout Manager on Internet Explorer 8. The Layout Manager manages the position of Screen components on a page depending on the space available.
Workspace	Low	Removed button sizes; buttons are now always small. Button size was never stored, so no functionality is lost.
Workspace	Low	Removed the Workspace lock functionality. It was useless since Process instance locks already enforce the most restrictive locking mode supported by Workspace locks.
Workspace	Low	The Appway core's HTML output no longer includes language attributes in script tags. The corresponding API has been changed and this functionality is now deprecated. The corresponding property for the Screen component "HTML Head Script" has been removed. There will be no impact on existing solutions.
Workspace Notifications	Low	Hyperlinks created via link annotations within notifications, chat or discussion messages now open up in the same window instead of a new one.
Workspace Notifications	Low	Moved the Studio interface to manage notifications from the Component extension to the Appway core. It has also been moved from the Administration to the Console panel.
Workspace Notifications	Low	Optimization of the "GetNotificationSubscriptions" function: when a topic is set as filter criteria, only the specified topic is considered instead of traversing all topics to find the relevant one.

Bugfix

Area	Importance	Description
Back end - Cluster Storage	Low	Improved log message when trying to release a lock which is owned by another thread.
Back end - Integration Link	Low	Updated Apache Camel libraries to version 2.12.5. This fixes known vulnerabilities related to OWASP dependency-check (CVE-2014-0002, CVE-2014-0003) for Apache Camel version 2.12.2.
Back end - Process Data service	Low	Ensure that non-persistent process instances are deleted only in case of a cluster-wide shutdown or when the last node in an installation is stopped.
Back end - System Start-up	Medium	Disabled Hazelcast version check upon system start-up.
Business Object - Data Class	Low	Ensure that Data Class functions with syntax errors cannot break Business Object validation, dependency and rendering.
Business Object - Document	Low	If a non-replicated page followed a replicated page, it contained the wrong data.
Business Object - Integration Link	Medium	Ensure that the version filter configured under "nm.integrationlink.versionfilter" is taken when starting Integration Links (from the Console or at system start-up).
Business Object - Integration Link	Low	Fixed a bug whereby Integration Links with filters caused early exit of the processor chain and did not commit their work properly.
Business Object - Integration Link	Low	When an Integration Link Task in a Process is executed asynchronously, the binding expression is now executed with the correct version filter. It takes the Process instance's version filter and updates that Process instance using a process engine thread.
Business Object - PDF Output Table	Low	Setting vertical alignment on cells in PDF Output Tables did not have any effect.
Job Execution Service	Low	The test for execution of single-node jobs no longer relies on a distributed lock, a distributed map or any assumption about system time synchronization.
Process Engine	Low	A background job takes care of removing outdated information from the Workflow Token Lookup Cache. The job runs by default once every hour at xx:45:00. You can change the schedule or pause the job with the configuration properties "nm.workflowengine.tokenlookupcache.cleanupjob.schedule" and "nm.workflowengine.tokenlookupcache.cleanupjob.paused".
Process Engine	Medium	Forced unlock checks (to release the write locks of outdated Process instances) are now decoupled from the configured lock timeout setting. The force unlock thread now runs every 30 seconds.

Process Engine	Medium	WorkflowInstanceService.getWorkflowInstances() no longer returns a list of modifiable Process instances. The returned Process instances are now read-only, because they cannot efficiently be protected by write locks.
Screen Component	Low	Adaptive Flow Layout: Fixed issue whereby the width of the Adaptive Flow Layout (in terms of Adaptive Flow Layout Elements) was not properly evaluated. This happened when the width was not set on the component itself, but instead received its values from the extension's configuration.
Screen Component	Low	Adaptive Flow Layout: Fixed the rendering of Info Boxes inside Adaptive Flow Layout elements. It was incorrect when the Info Box was not the immediate child of the Adaptive Flow Layout, e.g. there was an Ajax Update Area around the Info Box.
Screen Component	Low	Adaptive Flow Layout: Fixed various issues for the Adaptive Flow Layout component, including rendering the heights of elements in flow layouts that contain full-width elements (Component extension).
Screen Component	Medium	Adaptive Flow Layout: Layout components can now be placed into the root of a Screen: It allows that Screen to be included directly in an Adaptive Flow Layout. Layout components now also accept Includes as children, so that Screens containing Groups and Elements can be dragged into Adaptive Flow Layouts.
Screen Component	High	Adaptive Flow Layout: Removed the "Style" tab from the Adaptive Flow Layout and related components. Any styles previously set will be removed.
Screen Component	Low	Adaptive List: Fixed problem whereby Adaptive Lists were not rendered correctly if they were not visible yet when the Screen had initially been rendered.
Screen Component	Low	Border Layout Manager: A "BorderLayoutManagerAction" can now also be triggered if the region is fully extended and permanent.
Screen Component	Low	Border Layout Manager: CSS rules are now applied only to direct children and not in general. This prevents issues with nested Border Layout Managers.
Screen Component	Low	Border Layout Manager: Removed a duplicate class attribute in the main "div" tag of the component.
Screen Component	Low	Border Layout Manager: The dynamic properties "Flap Label" and "Permanent" are now evaluated correctly.
Screen Component	Low	Checkbox List: Fixed issue whereby, in rare cases, horizontal Checkbox Lists would be rendered invisibly.
Screen Component	Low	Data Table: Changed the factors determining whether to set a default height for the Data Table or not. This is no longer dependent on whether an HTML ID is set. You can now define a predefined amount of rows to which the table's height is adjusted, unless the height is explicitly set with a CSS style.
Screen Component	Low	Date Picker: Date Picker now generates valid XHTML code.
Screen Component	Low	Date Picker: Date Pickers placed inside Ajax Update Areas are now reinitialized after an update.
Screen Component	Low	Date Picker: Removed a wrong validation error message for dynamic format expressions.
Screen Component	Low	Date Picker: The Date Picker is now hidden if a parent element starts scrolling. This prevents the Date Picker window to be at a fixed position during scrolling.
Screen Component	Low	Dropdown List: Fixed a bug in the rendering of Dropdown Lists with multiple-value selection. There was sometimes an empty space below the component when inside an Adaptive Flow Layout.
Screen Component	Low	Dropdown List: Fixed the background color used for multiple selections in Internet Explorer 9 and older.
Screen Component	Low	File Upload: Fixed a JavaScript trigger for file uploads which was denied in Internet Explorer 9 and 10.
Screen Component	Low	Generated PDF: The "Generated PDF" component has a new property to select which HTML element to generate: <iframe> (default) or <object>.
Screen Component	Low	Info Table: Fixed a layout issue in cases where a responsive Info Table contained other tables.
Screen Component	Low	Info Table: Fixed the mobile style of the Info Table component. It was not redrawn properly when a header contained a very long word.
Screen Component	Low	Info Table: Fixed the rendering of Info Tables for responsive mobile displays. In some situations, Info Tables were not displayed properly when redrawn using Ajax Update Areas.

Screen Component	Low	Info Table: When an Info Table was displayed in mobile mode, the last entry always had a bottom border when it should not have had one.
Screen Component	Low	Link Container: Changed the box model to inline block: Links now correctly adapt to the child component's width and height.
Screen Component	Low	List: The left margin is not affected anymore in small responsive screens.
Screen Component	Low	Notification Alert: Annotations in the notification text (e.g. usernames or hyperlinks) are now displayed with different style than the plain text.
Screen Component	Low	Notification Popup: Displays an infinity symbol when the notification count is greater than 99.
Screen Component	Low	Notification Popup: Fixed minor style errors when the pop-up is displayed on the top left or top right of the pop-up button.
Screen Component	Low	Notification Popup: Optimized performance of the Notification Popup by avoiding double requests to the server.
Screen Component	Low	Notification Popup: When users click outside a pop-up in Internet Explorer, it now closes it. Previously, users could interact with other elements in the page while the pop-up was still open.
Screen Component	Low	Notification Topic Subscription: Fixed an issue in Internet Explorer 8/9/10, whereby the first item of the new topic list was not clickable.
Screen Component	Low	Phase Chevron: Fixed an issue preventing users to close the overview on mobile devices.
Screen Component	Low	Phase Chevron: JQuery selector HTML IDs are now escaped when using the HTML ID Automation extension.
Screen Component	Low	Slider: Fixed bug whereby the slider didn't work without a label.
Screen Component	Low	Social Bookmark: Fixed the Social Bookmark component's XHTML script tag.
Screen Component	Low	Text Editor CK: Enabled the Text Editor CK component on mobile browsers.
Screen Component	Low	Text Editor CK: The Text Editor CK now loads properly when it is activated via an Ajax Update Area.
Screen Component	Low	Text Field with Suggestions: Fixed style to prevent cases of text overflow in suggestions.
Script Language	Low	Changed the elapsed time status message in the list of script execution contexts from "sleeping" to "unknown". (Administration > Script Language > "Contexts" tab)
Script Language	Low	Fixed the validation for Primitive Types, which produced a missing variable definition error when the variable \$this was used in Primitive Type functions.
Studio	Low	Fixed issue whereby the Studio would not always reliably detect if open editors had unsaved changes. It didn't show its own warning when it was being closed, relying instead on each editor's individual warning.
Studio	Low	When you change your name in your profile, this is now immediately reflected in the top right corner of the Studio as well as in the Workspace's Developer Toolbar.
Studio - Administration	Low	Global Search: A search query required at least three characters. This limit is now removed.
Studio - Administration	Low	Script Language: The Breakpoints tab now shows a warning if the breakpoints are not currently enabled.
Studio - Console	Low	Process Instances tab: Fixed an issue in the dialog to set a version filter when it appears in a detached window.
Studio - Console	Low	Process Instances tab: If there are no groups available, the dialog for assigning a process token will no longer display an empty dropdown.
Studio - Console	Low	Process Instances tab: When you set a version filter while the Details window for a Process instance is open, the content of that window is immediately updated.
Studio - Console	Low	Workitems tab: If there are no groups available, the dialog for assigning a workitem will no longer display an empty dropdown.
Studio - Data Class Editor	Low	The list of Data Classes is now generated anew every time a Type property is rendered. When you make changes to Data Classes, the modifications should be reflected within seconds. Previously, the Data Class editor kept a cache of all Data Classes that exist in a solution. When you changed the type of a Data Class property, the list of types were generated from that cached list. This meant that the editor would not reflect new or deleted Data Classes until the cache was emptied, which, in some cases, would only happen very rarely.
Studio -	Low	The export dialog now properly detects when selected Business Objects are no longer

Deployment		available for export due to the selected version filter. It displays a appropriate message if this means that no Business Objects will be exported. Previously, the export dialog box allowed you to start the export of a single Business Object with a version filter before the object existed. No .awexport file was generated and the export dialog tried to download that non-existing .awexport file anyway, triggering an exception.
Studio - Home	Low	System Dashboard: Fixed an integer overflow issue for values displayed in the table of system nodes.
Studio - PDF Output Table Editor	Low	Improved rendering performance for the PDF Output Table preview.
Studio - Screen Editor	Medium	The search tool sometimes didn't show the correct index for some elements in the search result element path. As a result, similar search results could be incorrectly merged because they ended up with the same search result element path.
Workspace Notifications	Low	Fixed an issue on the Ajax helpers, which throwed an exception for users who had a new session ID.
Workspace Notifications	Low	Fixed annotations (e.g. usernames or hyperlinks) that were not displayed correctly in Internet Explorer 8.
Workspace Notifications	Low	The relative timestamp displayed under each notification message is now updated in real time. This applies to the Notification List, Notification Popup, Notification Alert components.